

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

FORM 10-K

ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF
THE SECURITIES EXCHANGE ACT OF 1934
For The Fiscal Year Ended December 31, 2022
OR

TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d)
OF THE SECURITIES EXCHANGE ACT OF 1934

Commission File Number 1-3610

HOWMET AEROSPACE INC.

(Exact name of registrant as specified in its charter)

Delaware
(State of incorporation)

25-0317820
(I.R.S. Employer Identification No.)

201 Isabella Street, Suite 200, Pittsburgh, Pennsylvania 15212-5872

(Address of principal executive offices) (Zip code)

Investor Relations-----(412) 553-1950

Office of the Secretary----- (412) 553-1940

(Registrant's telephone numbers, including area code)

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Trading Symbol	Name of each exchange on which registered
Common Stock, par value \$1.00 per share	HWM	New York Stock Exchange
\$3.75 Cumulative Preferred Stock, par value \$100.00 per share	HWM PR	NYSE American

Securities registered pursuant to Section 12(g) of the Act: **None**

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes No .

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Exchange Act.

Yes No .

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months, and (2) has been subject to such filing requirements for the past 90 days. Yes No .

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes No .

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer Accelerated filer Non-accelerated filer
Smaller reporting company Emerging growth company

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act.

Indicate by check mark whether the registrant has filed a report on and attestation to its management's assessment of the effectiveness of its internal control over financial reporting under Section 404(b) of the Sarbanes-Oxley Act (15 U.S.C. 7262(b)) by the registered public accounting firm that prepared or issued its audit report.

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes No .

If securities are registered pursuant to Section 12(b) of the Act, indicate by check mark whether the financial statements of the registrant included in the filing reflect the correction of an error to previously issued financial statements.

Indicate by check mark whether any of those error corrections are restatements that required a recovery analysis of incentive-based compensation received by any of the registrant's executive officers during the relevant recovery period pursuant to § 240.10D-1(b). Yes No

The aggregate market value of the outstanding common stock, other than shares held by persons who may be deemed affiliates of the registrant, as of the last business day of the registrant's most recently completed second fiscal quarter was approximately \$13 billion. As of February 10, 2023, there were 412,282,856 shares of common stock, par value \$1.00 per share, of the registrant outstanding.

Documents incorporated by reference.

Part III of this Form 10-K incorporates by reference certain information from the registrant's definitive Proxy Statement for its 2023 Annual Meeting of Shareholders to be filed pursuant to Regulation 14A (Proxy Statement).

Explanatory Note

On April 1, 2020, Arconic Inc. completed the separation of its business into two independent, publicly-traded companies: Howmet Aerospace Inc. (the new name for Arconic Inc.) and Arconic Corporation. The financial results of Arconic Corporation for all periods prior to April 1, 2020 have been retrospectively reflected in the Statement of Consolidated Operations as discontinued operations and, as such, have been excluded from continuing operations and segment results for all periods prior to April 1, 2020. The cash flows, comprehensive income, and equity related to Arconic Corporation have not been segregated and are included in the Statement of Consolidated Cash Flows, Statement of Consolidated Comprehensive Income, and Statement of Changes in Consolidated Equity, respectively, for all periods prior to April 1, 2020.

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Note on Incorporation by Reference

In this Form 10-K, selected items of information and data are incorporated by reference to portions of Howmet Aerospace Inc.’s definitive proxy statement for its 2023 Annual Meeting of Shareholders (the “Proxy Statement”), which we expect to file with the Securities and Exchange Commission within 120 days after Howmet Aerospace Inc.’s fiscal year ended December 31, 2022. Unless otherwise provided herein, any reference in this report to disclosures in the Proxy Statement shall constitute incorporation by reference of only that specific disclosure into this Form 10-K.

Forward-Looking Statements

This report contains (and oral communications made by Howmet Aerospace Inc. (“Howmet”) may contain) statements that relate to future events and expectations and, as such, constitute forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. Forward-looking statements include those containing such words as “anticipates,” “believes,” “could,” “estimates,” “expects,” “forecasts,” “goal,” “guidance,” “intends,” “may,” “outlook,” “plans,” “projects,” “seeks,” “sees,” “should,” “targets,” “will,” “would,” or other words of similar meaning. All statements that reflect Howmet’s expectations, assumptions or projections about the future, other than statements of historical fact, are forward-looking statements, including, without limitation, statements, forecasts and outlook relating to the condition of end markets; future financial results, operating performance, or estimated or expected future capital expenditures; future strategic actions; Howmet’s strategies, outlook, and business and financial prospects; and any future dividends and repurchases of its debt or equity securities. These statements reflect beliefs and assumptions that are based on Howmet’s perception of historical trends, current conditions and expected future developments, as well as other factors Howmet believes are appropriate in the circumstances. Although Howmet believes that the expectations reflected in any forward-looking statements are based on reasonable assumptions, it can give no assurance that these expectations will be attained and it is possible that actual results may differ materially from those indicated by these forward-looking statements due to a variety of risks, uncertainties, and changes in circumstances that are difficult to predict. For a discussion of some of the specific factors that may cause Howmet’s actual results to differ materially from those projected in any forward-looking statements, see the following sections of this report: [Part I, Item 1A](#) (Risk Factors), [Part II, Item 7](#) (Management’s Discussion and Analysis of Financial Condition and Results of Operations), including the disclosures under Segment Information and Critical Accounting Policies and Estimates, and [Note V](#) to the Consolidated Financial Statements in [Part II, Item 8](#). Market projections are subject to the risks discussed in this report and other risks in the market. Howmet disclaims any intention or obligation to update publicly any forward-looking statements, whether in response to new information, future events or otherwise, except as required by applicable law.

PART I

Item 1. Business.

General

Howmet Aerospace Inc. (formerly known as Arconic Inc.) is a Delaware corporation with its principal office in Pittsburgh, Pennsylvania and the successor to Arconic Inc., a Pennsylvania corporation formed in 1888 and formerly known as Alcoa Inc. In this report, unless the context otherwise requires, “Howmet”, the “Company”, “we”, “us” and “our” refer to Howmet Aerospace Inc., a Delaware corporation, and its consolidated subsidiaries.

The Company’s Internet address is <http://www.howmet.com>. Howmet makes available free of charge on or through its website its annual report on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, and amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as well as proxy statements, as soon as reasonably practicable after the Company electronically files such material with, or furnishes it to, the Securities and Exchange Commission (“SEC”). The Company’s website is included in this annual report on Form 10-K as an inactive textual reference only. The information on, or accessible through, the Company’s website is not a part of, or incorporated by reference in, this annual report on Form 10-K. The SEC maintains an Internet site that contains these reports at <http://www.sec.gov>.

Background

As described below, Howmet Aerospace Inc. was previously named Arconic Inc. and, prior to that, Alcoa Inc.

The Arconic Inc. Separation Transaction. On April 1, 2020, Arconic Inc. separated its businesses (the “Arconic Inc. Separation Transaction”) into two independent, publicly traded companies: Howmet Aerospace Inc. (the new name for Arconic Inc.) and Arconic Corporation. Following this separation, Howmet retained the Engine Products, Fastening Systems, Engineered Structures, and Forged Wheels businesses; and its prior Rolled Products, Aluminum Extrusions, and Building and Construction Systems businesses were spun-off to Arconic Corporation. In connection with the Arconic Inc. Separation Transaction, Howmet and Arconic Corporation entered into several agreements that govern the relationship of the parties following the separation.

The 2017 Reincorporation in Delaware. On December 31, 2017, Arconic Inc., then a Pennsylvania corporation, changed its jurisdiction of incorporation from Pennsylvania to Delaware.

The Alcoa Inc. Separation Transaction. On November 1, 2016, Alcoa Inc. completed the separation of its business (the “Alcoa Inc. Separation Transaction”) into two independent, publicly traded companies: Arconic Inc. (the new name for Alcoa Inc., which, through the transactions described above, later became Howmet Aerospace Inc.) and Alcoa Corporation. Following this separation, the Company retained the Engineered Products and Solutions, Global Rolled Products, and Transportation and Construction Solutions businesses; and its previous Alumina and Primary Metals businesses, rolling mill operations in Warrick, Indiana and 25.1% interest in the Ma’aden Rolling Company were spun-off to Alcoa Corporation. In connection with the Alcoa Inc. Separation Transaction, the two companies entered into several agreements that govern their post-separation relationship.

Overview

Howmet is a leading global provider of advanced engineered solutions for the aerospace and transportation industries. The Company’s primary businesses focus on jet engine components, aerospace fastening systems, and airframe structural components necessary for mission-critical performance and efficiency in aerospace and defense applications, as well as forged aluminum wheels for commercial transportation. Howmet’s technological capabilities support the innovation and growth of next-generation aerospace programs. Its differentiated technologies enable lighter, more fuel-efficient aircraft and commercial trucks to operate with a lower carbon footprint and support more sustainable air and ground transportation.

Howmet is a global company operating in 20 countries. Based upon the country where the point of shipment occurred, North America and Europe generated 71% and 22%, respectively, of Howmet’s sales in 2022. In addition, Howmet has operating activities in numerous countries and regions outside of North America and Europe, including China and Japan.

Description of the Business

The Company produces products that are used primarily in the aerospace (commercial and defense), commercial transportation, and industrial and other markets. Howmet seeks to provide its customers with innovative solutions through offering differentiated products such as airfoils with advanced cooling and coatings for extreme temperature applications; specially-designed fasteners for lightweight composite airframe construction, reduced assembly costs, and lightning strike protection; and lightweight aluminum commercial wheels. Its products and solutions include investment castings for jet engines and industrial gas turbines (nickel superalloys, titanium, and aluminum), including airfoils and structural parts; seamless rolled rings for jet engines (mostly nickel superalloys); fastening systems for aerospace, industrial and commercial transportation applications (titanium, steel, and nickel superalloys); forged jet engine components (e.g., jet engine disks); machined and forged aircraft parts (titanium and aluminum); and forged aluminum commercial vehicle wheels, all of which are sold directly to customers and/or through distributors.

Aerospace (Commercial and Defense) Market. Howmet's largest market is aerospace, which represented approximately 62% of the Company's revenue in 2022. The Company produces a range of high performance multi-materials, highly engineered products, and vertically integrated machined solutions for aero engines and airframe structures, ranging from investment castings, advanced coatings, seamless rings, forgings, titanium extrusions, and titanium mill products, to fasteners that hold aircraft together. Wingtip to wingtip, nose to tail, Howmet can produce more than 90% of all structural and rotating aero engine components. Modernization of the commercial and defense platforms is driven by an array of challenging performance requirements. With its precision engineering, materials science expertise and advanced manufacturing processes, Howmet aims to help its customers achieve greater fuel economies, reduced emissions, passenger comfort, and maintenance efficiencies.

Commercial Transportation Market. The commercial transportation market represented approximately 23% of the Company's revenue in 2022. The Company invented the forged aluminum truck wheel in 1948, and continues to advance technology to deliver breakthrough solutions that make trucks and buses lighter, more fuel efficient and sharper-looking. Howmet's forged aluminum wheels are a leading choice for commercial trucks and mass transportation vehicles because they can reduce weight and save fuel. The strength of the Company's rivets, bolts and fasteners offers another lightweighting solution that delivers performance.

Industrial and Other Markets. Industrial and other markets include industrial gas turbines, oil and gas, and other industrials, which represented approximately 15% of the Company's revenue in 2022.

Howmet has four reportable segments, which are organized by product on a worldwide basis: Engine Products, Fastening Systems, Engineered Structures and Forged Wheels.

Engine Products

Engine Products utilizes advanced designs and techniques to support next-generation engine programs and produces components primarily for aircraft engines and industrial gas turbines, including airfoils and seamless rolled rings. Engine Products produces rotating parts as well as structural parts. Engine Products principally serves the commercial and defense aerospace markets as well as the industrial gas turbine market.

Fastening Systems

Fastening Systems produces aerospace and industrial fasteners, latches, bearings, fluid fittings and installation tools. In addition to highly engineered aerospace fasteners with a broad range of fastening systems, the segment also supplies the commercial transportation, renewable, and material handling industries. The business's high-tech, multi-material fastening systems are found nose to tail on commercial and military aircraft, as well as on jet engines, industrial gas turbines, automobiles, commercial transportation vehicles, wind turbines, solar power systems, and construction and industrial equipment.

Engineered Structures

Engineered Structures produces titanium ingots and mill products for aerospace and defense applications and is vertically integrated to produce titanium forgings, extrusions, forming and machining services for airframe, wing, aero-engine, and landing gear components. Engineered Structures also produces aluminum forgings, nickel forgings, and aluminum machined components and assemblies for aerospace and defense applications. The principal markets served by Engineered Structures are commercial aerospace, defense aerospace, and land and sea defense.

Forged Wheels

Forged Wheels manufactures forged aluminum wheels for trucks, buses, and trailers and related products for the global commercial transportation market. The Company's portfolio of wheels is sold under the product brand name Alcoa® Wheels, which are five times stronger and 47% lighter than steel wheels. The Ultra ONE® Wheel with MagnaForce® alloy is the lightest portfolio of wheels on the market. The Company's proprietary Dura-Bright® surface treatment is unmatched in appearance and corrosion protection.

For additional discussion of each segment's business, see "Results of Operations—Segment Information" in [Part II, Item 7](#) (Management's Discussion and Analysis of Financial Condition and Results of Operations) and [Note D](#) to the Consolidated Financial Statements in [Part II, Item 8](#).

Sales by Market and Significant Customer Revenue

Sales by market for the years ended December 31, 2022, 2021, and 2020, were:

	For the Year Ended December 31,		
	2022	2021	2020
Aerospace - Commercial	46 %	41 %	50 %
Aerospace - Defense	16 %	19 %	19 %
Commercial Transportation	23 %	23 %	16 %
Industrial and Other	15 %	17 %	15 %

In 2022, General Electric Company and Raytheon Technologies Corporation represented approximately 12% and 9%, respectively, of the Company's third-party sales. The loss of any such significant customer could have a material adverse effect on such businesses. See [Part I, Item 1A](#) (Risk Factors).

The Company's Principal Facilities⁽¹⁾

Country	Facility Location	Segment	Products
Australia	Oakleigh	Fastening Systems	Fasteners
Canada	Georgetown, Ontario ⁽²⁾	Engine Products	Aerospace Castings
	Laval, Québec	Engine Products; Engineered Structures	Aerospace Castings and Machining
China	Suzhou ⁽²⁾	Engine Products; Fastening Systems; Forged Wheels	Fasteners, Rings and Wheels Machining
France	Dives-sur-Mer	Engine Products	Aerospace and Industrial Gas Turbine Castings
	Evron	Engine Products	Aerospace and Specialty Castings
	Gennevilliers	Engine Products	Aerospace and Industrial Gas Turbine Castings
	St. Cosme-en-Vairais ⁽²⁾	Fastening Systems	Fasteners
	Toulouse	Fastening Systems	Fasteners
	Us-par-Vigny	Fastening Systems	Fasteners
Germany	Bestwig	Engine Products	Aerospace Castings
	Erwitte	Engine Products	Machining of Aerospace Castings
	Hildesheim-Bavenstedt ⁽²⁾	Fastening Systems	Fasteners
	Kelkheim ⁽²⁾	Fastening Systems	Fasteners
Hungary	Nemesvámos	Fastening Systems	Fasteners
	Székesfehérvár	Engine Products; Forged Wheels	Aerospace and Industrial Gas Turbine Castings and Forgings
Japan	Jōetsu City ⁽²⁾	Forged Wheels	Wheels Machining
	Nomi	Engine Products	Aerospace and Industrial Gas Turbine Castings
Mexico	Ciudad Acuña ⁽²⁾	Engine Products; Fastening Systems	Aerospace Castings/Rings and Fasteners
	Monterrey	Forged Wheels	Forgings
Morocco	Casablanca ⁽²⁾	Fastening Systems	Fasteners
United Kingdom	Ecclesfield	Engine Products	Metal, Billets
	Exeter ⁽²⁾	Engine Products	Aerospace and Industrial Gas Turbine Castings and Alloy
	Glossop	Engine Products	Metal, Billets
	Ickles	Engine Products	Metal, Billets
	Leicester ⁽²⁾	Fastening Systems	Fasteners
	Low Moor	Engineered Structures	Extrusions
	Redditch ⁽²⁾	Fastening Systems	Fasteners
	Telford	Fastening Systems	Fasteners
Welwyn Garden City	Engineered Structures	Aerospace Formed Parts	

Country	Facility Location	Segment	Products
United States	Tucson, AZ ⁽²⁾	Fastening Systems	Fasteners
	Carson, CA ⁽²⁾	Fastening Systems	Fasteners
	City of Industry, CA ⁽²⁾	Fastening Systems	Fasteners
	Fontana, CA	Engine Products	Rings
	Fullerton, CA ⁽²⁾	Fastening Systems	Fasteners
	Rancho Cucamonga, CA	Engine Products	Rings
	Torrance, CA	Fastening Systems	Fasteners
	Branford, CT	Engine Products	Aerospace Coatings
	Winsted, CT	Engine Products	Aerospace Machining
	Savannah, GA	Engineered Structures	Forgings, Disks
	La Porte, IN	Engine Products	Aerospace and Industrial Gas Turbine Castings
	Whitehall, MI	Engine Products	Aerospace and Industrial Gas Turbine Castings and Coatings, Titanium Alloy and Specialty Products
	Washington, MO	Engineered Structures	Aerospace Formed Parts, Titanium Mill Products
	Big Lake, MN	Engineered Structures	Aerospace Machining
	New Brighton, MN	Engineered Structures	Aerospace Machining
	Dover, NJ	Engine Products	Aerospace and Industrial Gas Turbine Castings and Alloy
	Kingston, NY ⁽²⁾	Fastening Systems	Fasteners
	Rochester, NY	Engine Products	Rings
	Barberton, OH	Forged Wheels	Wheels Machining
	Canton, OH ⁽²⁾	Engineered Structures	Titanium Mill Products
	Cleveland, OH	Engine Products; Engineered Structures; Forged Wheels	Forgings, Investment Casting Equipment, and Aerospace Components
	Niles, OH	Engineered Structures	Titanium Mill Products
	Morristown, TN ⁽²⁾	Engine Products	Aerospace and Industrial Gas Turbine Ceramic Products
	Houston, TX ⁽²⁾	Engineered Structures	Extrusions
	Waco, TX ⁽²⁾	Fastening Systems	Fasteners
	Wichita Falls, TX	Engine Products	Aerospace and Industrial Gas Turbine Castings
	Hampton, VA ⁽²⁾	Engine Products	Aerospace and Industrial Gas Turbine Castings
	Martinsville, VA	Engineered Structures	Titanium Mill Products

⁽¹⁾ Principal facilities are listed by location, with certain locations having more than one facility. The list in the above table does not include 19 locations that serve as sales and administrative offices, distribution centers or warehouses.

⁽²⁾ Leased property or partially leased property.

Sources and Availability of Raw Materials

Important raw materials purchased in 2022 for each of the Company's reportable segments are listed below.

Engine Products	Fastening Systems	Engineered Structures	Forged Wheels
Ceramics	Aluminum Alloys	Energy	Energy
Cobalt	Energy	Nickel Alloys	Primary and Scrap Aluminum
Energy	Nickel Alloys and Stainless Steels	Primary Aluminum	
Nickel	Steels	Titanium Scrap	
Platinum	Titanium Alloys	Titanium Sponge	
Titanium		Vanadium Alloys	

Generally, raw materials are purchased from third-party suppliers under competitively priced supply contracts or bidding arrangements. The Company believes that the raw materials necessary to its business are and will continue to be available.

Patents, Trade Secrets and Trademarks

The Company believes that its domestic and international patent, trade secret and trademark assets provide it with a significant competitive advantage. The Company's rights under its patents, as well as the products made and sold under them, are important to the Company as a whole and, to varying degrees, important to each business segment. The patents owned by Howmet generally concern particular products, manufacturing equipment or techniques. Howmet's business as a whole is not, however, materially dependent on any single patent, trade secret or trademark. As a result of product development and technological advancement, the Company continues to pursue patent protection in jurisdictions throughout the world. As of the end of 2022, the Company's worldwide patent portfolio consists of approximately 938 granted patents and 205 pending patent applications.

The Company also has a significant number of trade secrets, mostly regarding manufacturing processes and material compositions that give many of its businesses important advantages in their markets. The Company continues to strive to improve those processes and generate new material compositions that provide additional benefits. With respect to domestic and international registered trademarks, the Company has many that have significant recognition within the markets that are served. Examples include the name Howmet[®] metal castings, Huck[®] fasteners, and Dura-Bright[®] wheels with easy-clean surface treatments. A significant trademark filing campaign for the names "Howmet" and "Howmet Aerospace" along with its "H" logo was initiated in 2019, in support of the corporate launch of Howmet Aerospace Inc. As of the end of 2022, the Company's worldwide trademark portfolio consists of approximately 1,569 registered trademarks and 94 pending trademark applications. The Company's rights under its trademarks are important to the Company as a whole and, to varying degrees, important to each business segment.

Competitive Conditions

The Company's segments - Engine Products, Fastening Systems, Engineered Structures, and Forged Wheels - are subject to substantial and intense competition in the markets they serve. Although Howmet believes its advanced technology, manufacturing processes and experience provide advantages to Howmet's customers, such as high quality and superior mechanical properties that meet the Company's customers' most stringent requirements, many of the products Howmet makes can be produced by competitors using similar types of manufacturing processes as well as alternative forms of manufacturing. Despite intense competition, Howmet continues as a market leader in most of its principal markets. We believe that factors such as Howmet's technological expertise, state-of-the-art capabilities, capacity, quality, engaged employees and long-standing customer relationships enable the Company to maintain its competitive position.

Principal competitors include Berkshire Hathaway Inc., through its 2016 acquisition of Precision Castparts Corporation and subsidiaries, for titanium and titanium-based alloys, precision forgings, seamless rolled rings, investment castings, including airfoils, and aerospace fasteners; VSMPO (Russia) for titanium and titanium-based alloys and precision forgings; Allegheny Technologies, Inc.'s High-Performance Materials & Components segment for titanium and titanium-based alloys and precision forgings; Lisi Aerospace (France) for aerospace fasteners; and Aubert & Duval (part of Eramet Group in France) for precision forgings. Other competitors include Doncasters Group Ltd. (U.K.) and Consolidated Precision Products Corp. (owned by Warburg Pincus and Berkshire Partners) for investment castings; Weber Metals (part of Otto Fuchs) for precision forgings; and Forgital and Frisa (Mexico) for seamless rings.

Forged Wheels competes against aluminum and steel wheel suppliers in the commercial transportation industry under the product brand name Alcoa[®] Wheels for the major regions that it serves (North America, Europe, Japan, China, South America, and Australia). Its larger aluminum wheel competitors are Accuride Corporation, Speedline (member of the Ronal Group), Nippon Steel Corporation, Dicastal, Alux, and Wheels India Limited. In recent years, Forged Wheels has seen an increase in the number of aluminum wheel suppliers (both forged and cast aluminum wheels) from China, Taiwan, India and South Korea attempting to penetrate the global commercial transportation market.

Several of Howmet’s largest customers have captive superalloy furnaces for producing airfoil investment castings for their own use. Many other companies around the world also produce superalloy investment castings, and some of these companies currently compete with Howmet in the aerospace and other markets, while others are capable of competing with the Company should they choose to do so.

International competition in the investment castings, fasteners, rings and forgings markets may also increase in the future as a result of strategic alliances among engine original equipment manufacturers (“OEMs”), aero-structure prime contractors, and overseas companies, especially in developing markets, particularly where “offset” or “local content” requirements create purchase obligations with respect to products manufactured in or directed to a particular country.

Government Regulations and Environmental Matters

Our operations and activities are global and are subject to various federal, state, local, and foreign laws, rules and regulations, including those relating to the environment. In 2022, compliance with these laws, rules and regulations did not have a material effect on our capital expenditures, results of operations or competitive position. Additionally, we do not currently anticipate material capital expenditures for environmental control facilities in 2023. For a discussion of the risks associated with certain applicable laws and regulations, see “Risk Factors.” Information relating to environmental matters is included in [Note V](#) to the Consolidated Financial Statements in [Part II, Item 8](#) under the caption “Environmental Matters.”

Human Capital

To attract, recruit, develop and retain world-class talent, the Company has created a culture that embraces diversity, drives inclusion, and empowers and engages our employees. Our Code of Conduct describes how we lead with integrity and work with one another while supporting our stakeholders. The Company provides competitive wages, benefits and terms of employment.

Attracting and recruiting candidates through workforce planning, increased hiring efficiency and effective onboarding has been a priority for the Company. The Company’s new Applicant Tracking System supports the dissemination of our job vacancies to a wider range of diverse partners. As an example, our campus recruitment platform provides an ability to proactively reach a broad talent network as the system of record for more than 9.2 million students and 1,300 schools across the United States. To retain new talent, the Company offers an onboarding program to develop a sense of belonging, teamwork and productivity that is uniform across the organization.

The Company enables our employees to own their development and create rewarding careers that draw on their aptitudes and support their ambitions. Using a human capital management platform, employees can build a professional profile to share their career aspirations and learn new skills. This platform allows us to align employee goals and growth with the Company’s future business needs so that we can pinpoint potential successor candidates and build their readiness for their future roles. Our talent review and succession planning process is an ongoing priority and is sponsored and led by our CEO with oversight by the Board of Directors.

We have started to use a data-driven approach to track how our employees are progressing through our organization. We seek to identify high performers and support their development into potential future leaders, with a particular focus on providing equitable opportunities to individuals who are members of underrepresented groups. Our Employee Resource Groups continue to be fundamental to building our culture of inclusion. Focusing on Gender, LGBTQ+, African Heritage, Hispanic, Veteran, European and Next Generation, these networks provide colleagues with valuable support and advice, create development opportunities, and provide leadership with feedback that raises awareness of issues and challenges. The Company also provides diversity awareness training and resources. Our Board of Directors and Executive Leadership team review diversity, equity and inclusion activity on a regular basis, and have been actively involved in ‘Meet the Leader’ sessions with our employees throughout the year.

Howmet’s strong health and safety culture empowers our employees and contractors to take personal responsibility for their actions and the safety of their coworkers. This culture is supported by internal policies, standards, rules and procedures that clearly articulate our stringent requirements for working safely in all of our worldwide facilities. The Company embeds annual health and safety goals and objectives into its operating plans to progress against our ultimate goal of zero incidents. We prioritize our risk management processes toward the prevention of fatality and serious injury.

Employees

Total worldwide employment at the end of 2022 was approximately 21,400 employees in 23 countries.

Within the United States, there are eight collective bargaining agreements with varying expiration dates between Howmet and various labor unions. Of these eight, the largest workforce covered under a collective bargaining agreement is between Howmet and the United Autoworkers (“UAW”) at our Whitehall, Michigan location. This covers approximately 1,300 employees; the current agreement expires on March 31, 2023. The Whitehall, Michigan location has been preparing for the expiration of this collective bargaining agreement over the course of several months and has started negotiations with the union prior to the

agreement's expiration date. In addition to the employees covered by the Whitehall UAW collective bargaining agreement, approximately 1,700 other employees in the United States are also represented by labor unions. On a regional basis, collective bargaining agreements with varying expiration dates cover employees in Europe, North America, South America, and Asia. The Company believes that it has positive relationships with its employees and any respective labor union representatives.

Executive Officers of the Registrant

The names, ages, positions and areas of responsibility of the executive officers of the Company as of February 14, 2023 are listed below. The Company's executive officers are annually elected or appointed to serve until the next annual meeting of the Board of Directors (held in conjunction with the annual meeting of shareholders), except in the case of earlier death, retirement, resignation or removal.

Michael N. Chanatry, 62, Vice President and Chief Commercial Officer. Mr. Chanatry was initially elected Vice President and Chief Commercial Officer of Howmet effective May 16, 2018. Prior to joining Howmet, from 2015 to April 2018, he was Vice President of Supply Chain for General Electric's Power Division. Mr. Chanatry served as General Manager of Supply Chain for General Electric Appliances from 2013 to 2015; and General Electric Aviation Systems from 2009 to 2013. Prior to his leadership roles at General Electric Power, General Electric Appliances and General Electric Aviation Systems, Mr. Chanatry held numerous positions within the General Electric Aviation & Aerospace divisions, as well as at Lockheed Martin from 1983 to 2009.

Ken Giacobbe, 57, Executive Vice President and Chief Financial Officer. Mr. Giacobbe was initially elected Executive Vice President and Chief Financial Officer of Howmet effective November 1, 2016. Mr. Giacobbe joined Howmet in 2004 as Vice President of Finance for Global Extruded Products, part of Alcoa Forgings and Extrusions. He then served as Vice President of Finance for the Company's Building and Construction Systems business from 2008 until 2011. In 2011, he assumed the role of Group Controller for the Engineered Products and Solutions segment. From January 2013 until October 2016, Mr. Giacobbe served as Chief Financial Officer of the Engineered Products and Solutions segment. Before joining Howmet, Mr. Giacobbe held senior finance roles at Avaya and Lucent Technologies.

Lola F. Lin, 48, Executive Vice President, Chief Legal and Compliance Officer and Secretary. Ms. Lin was initially elected Executive Vice President, Chief Legal Officer and Secretary of Howmet effective June 28, 2021. Prior to joining Howmet, she served as Senior Vice President and General Counsel of Airgas, Inc. from 2016 to May 2021. Prior to her time at Airgas, Ms. Lin held various legal roles at Air Liquide USA LLC from 2007 to 2016, including as Vice President and Deputy General Counsel. Prior to her roles at Airgas Inc. and Air Liquide, Ms. Lin held roles at Dell Inc., Sutherland Asbill & Brennan LLP and Locke Liddell & Sapp LLP.

Neil E. Marchuk, 65, Executive Vice President, Chief Human Resources Officer and Interim President, Fastening Systems. Mr. Marchuk was initially elected Executive Vice President and Chief Human Resources Officer of Howmet effective March 1, 2019. Prior to joining Howmet, from January 2016 to February 2019, he was Executive Vice President and Chief Human Resources Officer at Adient, an automotive manufacturer. From July 2006 to May 2015, Mr. Marchuk was Executive Vice President of Human Resource at TRW Automotive, and served as TRW's Vice President, Human Resources from September 2004 to July 2006. Prior to joining TRW, from December 2001 to August 2004, Mr. Marchuk was Director, Corporate Human Resources for E.I. Du Pont De Nemours and Company ("E.I. Du Pont"). From September 1999 to November 2001, Mr. Marchuk was Director, Global HR Delivery for E.I. Du Pont. From February 1999 to August 1999, Mr. Marchuk served E.I. Du Pont as its Global HR Director, Global Services Division.

John C. Plant, 69, Executive Chairman and Chief Executive Officer. Mr. Plant was appointed Howmet's Chief Executive Officer effective October 14, 2021, and was Co-Chief Executive Officer from April 2020 to October 2021. From February 2019 to April 2020, he was the Chief Executive Officer of Arconic Inc., as the Company was then known prior to its separation. He has served as chairman of Howmet's Board of Directors since October 2017 and as a member of the Board since February 2016. Mr. Plant previously served as Chairman of the Board, President and Chief Executive Officer of TRW Automotive from 2011 to 2015, and as its President and Chief Executive Officer from 2003 to 2011. TRW Automotive was acquired by ZF Friedrichshafen AG in May 2015. Mr. Plant was a co-member of the Chief Executive Office of TRW Inc. from 2001 to 2003 and an Executive Vice President of TRW from 1999 (when the company acquired Lucas Varity) to 2003. Prior to TRW, Mr. Plant was President of Lucas Varity Automotive and managing director of the Electrical and Electronics division from 1991 through 1997.

Barbara L. Shultz, 49, Vice President and Controller. Ms. Shultz was initially elected Vice President and Controller of Howmet effective May 25, 2021. Ms. Shultz joined Howmet in 2005 and served in numerous financial accounting positions until 2012 when she was appointed Director of Finance for the Company's Alcoa Wheel and Transportation Products business. She then served as Director of Compliance for the Company's then Structures business from July 2015 to February 2019, Director of Compliance from February 2019 to June 2020, and Assistant Controller from June 2020 to May 2021. Prior to joining Howmet, Ms. Shultz held several roles at PricewaterhouseCoopers LLP from 1995 to 2005.

Item 1A. Risk Factors.

Howmet's business, financial condition and results of operations may be impacted by a number of factors. In addition to the factors discussed elsewhere in this report, the following risks and uncertainties could materially harm the Company's business, results of operations, financial condition and/or cash flows, including causing its actual results to differ materially from those projected in any forward-looking statements. The following list of risk factors is not all-inclusive or necessarily in order of importance. Additional risks and uncertainties not presently known to Howmet or that Howmet currently deems immaterial may also adversely affect the Company materially in future periods.

Risks Related to Our Business and Operations

The markets for Howmet's products are cyclical, and such markets and Howmet's operations are influenced by a number of factors, including global economic conditions.

Howmet is subject to cyclical fluctuations in global economic conditions and lightweight metals end-use markets. Howmet sells many products to industries that are cyclical, such as the aerospace and commercial transportation industries, and the demand for our products is sensitive to, and quickly impacted by, demand for the finished goods manufactured by our customers in these industries, which may change as a result of changes in regional or worldwide economies, currency exchange rates, interest rates, inflation, energy prices or other factors beyond our control. In addition, Howmet derives a significant portion of our revenue from products sold to the aerospace industry, which is cyclical and reflective of changes in the general economy. The commercial aerospace industry is historically driven by the demand from commercial airlines for new aircraft and spare parts. Demand for commercial aircraft and spare parts is influenced by airline industry profitability, trends in airline passenger traffic domestically and globally, the state of U.S., regional and world economies, the ability of aircraft purchasers to obtain required financing and numerous other factors. The defense aerospace cycle is highly dependent on U.S. and foreign government funding; and, it is also driven by the effects of terrorism, a changing global geopolitical environment, U.S. foreign policy, whether older military aircraft are retired, and technological improvements to new engines and airframes. Further, the demand for Howmet's commercial transportation products is driven by the number of vehicles produced by commercial transportation manufacturers. Commercial transportation sales and production are affected by many factors, including the age of the vehicle fleet, labor relations issues, fuel prices, regulatory requirements, government initiatives, trade agreements, and levels of competition.

The ongoing conflict between Russia and Ukraine has impacted global energy markets, particularly in Europe, leading to high volatility and increasing prices for crude oil, natural gas and other energy supplies. Higher energy costs result in increases in operating expenses at our manufacturing facilities, in the expense of shipping raw materials to our facilities, and in the expense of shipping products to our customers. The costs of certain raw materials (including, but not limited to, nickel, titanium, aluminum, cobalt, and rhenium) necessary for the manufacture of Howmet's products and other manufacturing and operating costs are influenced by market forces and governmental constraints, including inflation, supply and demand, and shortages, and could be further influenced by export limits, sanctions, new or increased import duties, and countervailing or anti-dumping duties. Recent high levels of inflation worldwide and in the United States has resulted in an increase in the costs of materials and labor. While we generally attempt to pass along higher raw material and energy costs to our customers through contractual agreements in the form of price increases, there can be a delay between an increase in our costs and our ability to increase the prices of our products. Additionally, we may not be able to increase the prices of our products due to competitive pricing pressure and other factors. If the Company is unable to offset significant cost increases through customer price increases, productivity improvements, cost reduction or other programs, Howmet's business, operating results or financial condition could be materially adversely affected.

Howmet is unable to predict the future course of industry variables, the strength of the U.S., regional or global economies, or the effects of government actions. Negative economic conditions, such as a major economic downturn or recession, continued inflation, or disruptions in the financial markets, could have a material adverse effect on Howmet's business, financial condition or results of operations.

A material disruption of, or manufacturing difficulties at, Howmet's manufacturing operations could adversely affect Howmet's business.

If Howmet's operations, particularly one of its key manufacturing facilities, were to be disrupted, including because of significant equipment failures, natural disasters, power outages, fires, explosions, terrorism, theft, sabotage, adverse weather conditions, public health crises, labor disputes, labor shortages or other reasons, Howmet may be unable to effectively meet its obligations to, or demand from, its customers. In addition, the manufacture of many of Howmet's products is a complex process. Manufacturing problems arising from equipment failure or malfunction, inadvertent failure to follow regulatory or customer specifications and procedures, including those related to quality or safety, and problems with raw materials could have an adverse impact on the Company's ability to fulfill orders or meet product quality or performance requirements, which may result in negative publicity and damage to our reputation, adversely impacting product demand and customer relationships. Interruptions in production capability could increase Howmet's costs and reduce its sales, including causing the Company to

incur costs for premium freight, make substantial capital expenditures, or purchase alternative material at higher costs to fulfill customer orders. Additionally, a delivery delay by us due to production interruptions could subject us to liability from customer claims that such delay resulted in losses to the customer. Furthermore, product manufacturing or performance issues could result in recalls, customer penalties, contract cancellation and product liability exposure in addition to a material adverse effect on our business, financial condition or results of operations. Because of approval, license and qualification requirements applicable to manufacturers and/or their suppliers, sources of alternatives to mitigate manufacturing disruptions may not be readily available to Howmet or its customers.

Howmet is dependent on a limited number of suppliers for materials and services essential to our operations, including raw materials, and supply chain disruptions could have a material adverse effect on our business.

Howmet has supply arrangements with suppliers for various materials and services, including raw materials. We maintain annual or long-term contracts for a majority of our supply requirements, and, for the remainder, we depend on spot purchases. There can be no assurance that we will be able to renew, or obtain replacements for, any of our long-term contracts when they expire on terms that are as favorable as our existing agreements, or at all. For certain raw materials and services, we depend on a number of limited source or sole source suppliers. Supply constraints could impact our production or force us to purchase materials and other supplies from alternative sources, which may not be available in sufficient quantities or at prices that are favorable to us. Howmet could also have exposure if a key supplier is unable to deliver sufficient quantities of a necessary material on a timely basis. Several of our suppliers have recently had constraints on their ability to supply Howmet with its full requirements due to lack of capacity, labor shortages and/or material availability. If such constraints continue or escalate, it could result in an adverse impact on our business. Because of approval, license and qualification requirements applicable to manufacturers and/or their suppliers, sources of alternatives to mitigate supply disruptions may not be readily available to Howmet. Any delay in supply from these suppliers could prevent us from meeting customer demand for our products. The availability and costs of certain raw materials necessary for the production of Howmet's products may also be influenced by private or government entities, including as a result of changes in geopolitical conditions or regulatory requirements, labor relations between the producers and their work forces, and unstable governments in exporting nations. Any of the foregoing supply chain disruptions or those due to trade barriers, business continuity, quality, cyberattacks, transportation, delivery or logistics challenges, weather, natural disaster, or pandemic events could adversely affect Howmet's business, results of operations or financial condition.

Howmet's business depends, in part, on its ability to successfully meet program demand, production targets and commitments.

Howmet is currently under contract to supply components for a number of existing and new commercial, general aviation, military aircraft and aircraft engine programs. Many of these contracts contemplate production increases over the next several years. If Howmet fails to meet production targets and commitments, or encounters difficulty or unexpected costs in meeting such levels, it could have a material adverse effect on the Company's reputation, business, operating results or financial condition. Similarly, to the extent demand for our products increases rapidly and significantly in future periods, we may not be able to ramp up production quickly enough to meet the demand, which could result in lost opportunities for growth and adversely affect our business, financial condition, results of operations or competitive position.

Failure to attract and retain a qualified workforce and key personnel or to provide adequate succession planning could adversely affect Howmet's operations and competitiveness.

Howmet's global operations require qualified and skilled personnel with relevant industry and technical experience. Shortages in certain skills, in areas such as engineering, manufacturing and technology, and other labor market inadequacies have created more competition for talent. A sustained labor shortage, lack of skilled labor, increased turnover, labor inflation, or increase in general labor costs could lead to higher labor, recruiting or training costs to attract and retain personnel. If the Company fails to attract, train, develop and retain a global workforce with the skills and in the locations we need to operate and grow our business, our business and operations could be adversely impacted. Furthermore, the continuity of key personnel and the preservation of institutional knowledge are vital to the success of the Company's growth and business strategy. The loss of key personnel could significantly harm Howmet's business, and any unplanned turnover or failure to develop adequate succession plans for key positions could deplete the Company's institutional knowledge base, result in loss of technical or other expertise, delay or impede the execution of the Company's business plans and erode Howmet's competitiveness.

Howmet could be adversely affected by the loss of key customers or significant changes in the business or financial condition of its customers.

Howmet has long-term contracts with a significant number of its customers, some of which are subject to renewal, renegotiation or re-pricing at periodic intervals or upon changes in competitive supply conditions. Howmet's failure to successfully renew, renegotiate or favorably re-price such agreements, or a material deterioration in or termination of these customer relationships, could result in a reduction or loss in customer revenue. Additionally, a significant downturn or deterioration in the business or financial condition or loss of a key customer supplied by Howmet could adversely affect Howmet's financial results. Howmet's

customers may experience delays in the launch of new products, labor strikes, diminished liquidity or credit unavailability, weak demand for their products, supply chain constraints or other difficulties in their businesses. For example, our sales were negatively affected by Boeing's pause in deliveries of its 787 aircraft from May 2021 through 2022 as a result of Boeing's significantly reduced 787 production rates. Howmet's customers may also change their business strategies or modify their business relationships with Howmet, including to reduce the amount of Howmet's products they purchase, to switch to alternative suppliers, or to enter into the markets themselves to compete with Howmet. If Howmet's customers reduce, terminate or delay purchases from Howmet due to the foregoing factors or otherwise and Howmet is unsuccessful in enforcing its contract rights or replacing such business in whole or in part or replaces it with less profitable business, our financial condition and results of operations may be adversely affected.

Howmet's products are used in a variety of military applications, including military aircraft. Although many of the military programs in which Howmet participates extend several years, changes in military strategy, policy and priorities, or reductions in defense spending, may affect current and future funding of these programs and could reduce the demand for Howmet's products, which could adversely affect Howmet's business, financial condition or results of operations.

Information technology system failures, cyberattacks and security breaches may threaten the integrity of Howmet's intellectual property and other sensitive information, disrupt its business operations, and result in reputational harm and other negative consequences having a material adverse effect on its financial condition and results of operations.

Howmet's information technology systems could be subject to damage or interruption from power outages; computer network and telecommunications failures; computer viruses; catastrophic events, such as fires, floods, earthquakes, tornadoes, hurricanes, acts of war or terrorism; and usage errors by employees. If Howmet's information technology systems are damaged or cease to function properly, the Company may have to make a significant investment to fix or replace them, and Howmet may suffer loss of critical data and interruptions or delays in its operations. Any material disruption in the Company's information technology systems, or delays or difficulties in implementing or integrating new systems or enhancing current systems, could have an adverse effect on Howmet's business, financial condition or results of operations.

Increased global cybersecurity vulnerabilities, threats and more sophisticated and targeted cyberattacks pose a risk to the security of our and our customers', suppliers' and third-party service providers' products, systems and networks, and the confidentiality, availability and integrity of our data. The Company believes that it faces threats of cyberattacks due to the industries it serves, the locations of its operations, and its technological innovations. The Company has experienced cybersecurity attacks in the past, including breaches of its information technology systems in which information was taken, and may experience them in the future, potentially with more frequency or sophistication. Although past attacks did not result in known losses of any critical data or have a material impact on Howmet's financial condition or results of operations, the scope and impact of any future incident cannot be predicted. While the Company continually works to safeguard its systems and mitigate potential risks, there is no assurance that such actions will be sufficient to prevent cyberattacks or security breaches that manipulate or improperly use the Company's systems or networks, compromise confidential, personal or otherwise protected information, destroy or corrupt data, block access to its systems, or otherwise disrupt its operations. The occurrence of such events could negatively impact Howmet's reputation and its competitive position and could result in litigation with third parties, regulatory action, loss of business, potential liability and increased remediation costs, any of which could have a material adverse effect on its financial condition and results of operations.

Our business, results of operations, financial condition and/or cash flows have been and could continue to be adversely impacted materially by the continued effects of the COVID-19 pandemic.

The COVID-19 pandemic affecting the global community has had and may continue to have a material adverse effect on our business, results of operations, financial condition and/or cash flows, and the nature and extent of the impact over time remain uncertain. A sustained impact to our operations, financial results and market capitalization may require material impairments of our assets, including, but not limited to, goodwill and other intangible assets, long-lived assets, and right-of-use assets. The impact over time will depend on future developments that are beyond our control, including the duration of the pandemic, the continued severity of the virus, resurgences and emergence of variants of the virus, the efficacy and availability or uptake of vaccines and related drugs, and the actions that may be taken in response to COVID-19, such as travel limitations. For instance, the decrease in domestic and international air travel due to the pandemic adversely affected demand for narrow-body and wide-body aircraft. Although domestic air travel now approximates pre-pandemic levels, China domestic air travel is still below pre-pandemic 2019 levels on an average monthly basis in 2022. International travel also continues to be lower than pre-pandemic 2019 levels. We expect commercial aerospace growth to continue, with narrow-body demand returning faster than wide-body demand. The commercial wide-body aircraft market is taking longer to recover, which is creating a shift in our product mix compared to pre-pandemic conditions. In addition, several of our commercial aerospace and transportation customers have encountered, and may continue to encounter, challenges in their ability to increase production rates to meet demand due to labor and supply chain constraints stemming from the pandemic. Additionally, the COVID-19 pandemic has or may continue to exacerbate other risks disclosed herein, including, but not limited to, risks related to global economic conditions, competition,

loss of customers, costs of supplies, supply chain disruptions, manufacturing difficulties and disruptions, investment returns, our credit profile, our credit ratings, and interest rates.

Howmet faces significant competition, which may have an adverse effect on profitability.

As discussed in “Competitive Conditions” in [Part I, Item 1](#) (Business) of this report, the markets for Howmet’s products are highly competitive. Howmet’s competitors include a variety of both U.S. and non-U.S. companies in our product markets, which could include existing customers. New entrants in our markets, new product offerings, new and/or emerging technologies in the marketplace, or new facilities may compete with or replace Howmet products. The willingness of customers to accept alternate solutions for the products sold by Howmet, pricing pressure from competitors, and technological advancements or other developments by or affecting Howmet’s competitors or customers could adversely affect Howmet’s business, financial condition or results of operations. Howmet’s competitive position and future performance depends, in part, on the Company’s ability to develop and innovate products, deploy technology initiatives and implement advanced manufacturing technologies. While Howmet intends to continue to develop innovative new products and services, it may not be able to successfully differentiate its products or services from those of its competitors or achieve and maintain technological advantages.

In addition, Howmet may face increased competition due to industry consolidation. Companies that are strategic partners in some areas of Howmet’s business may acquire or form alliances with Howmet’s competitors, thereby reducing their business with Howmet. Industry consolidation may result in stronger competitors who are better able to obtain favorable terms from suppliers or who are better able to compete as sole-source vendors for customers. Consolidation within Howmet’s customer base may result in customers who are better able to exert leverage in negotiating prices and other terms of sale, or may lead to reduced demand for Howmet’s products if a combined entity replaces Howmet with a Howmet competitor with which it had prior relationships. The result of these circumstances could have a material adverse effect on Howmet’s business, operating results and financial condition.

Risks Related to Liquidity and Capital Resources

A decline in Howmet’s financial performance or outlook could negatively impact its credit profile, its access to capital markets and its borrowing costs.

A decline in the Company’s financial performance or outlook due to internal or external factors, such as macroeconomic conditions, a deterioration in the Company’s financial metrics or a contraction in the Company’s liquidity, could adversely affect the Company’s credit ratings and its access to the capital or credit markets on terms and conditions that the Company finds acceptable. A downgrade of Howmet’s credit ratings could result in negative consequences, including limiting its ability to obtain future financing on favorable terms, if at all, increasing borrowing costs and credit facility fees, triggering collateral postings, and adversely affecting the market price of Howmet securities. For information on our credit ratings, see “Liquidity and Capital Resources” in [Part II, Item 7](#) (Management’s Discussion and Analysis of Financial Condition and Results of Operations). Limitations on Howmet’s ability to access global capital markets, a reduction in Howmet’s liquidity or an increase in borrowing costs could materially and adversely affect Howmet’s ability to maintain or grow its business, which in turn may adversely affect its financial condition, liquidity and results of operations.

An adverse decline in the liability discount rate, lower-than-expected investment return on pension assets and other factors could adversely affect Howmet’s results of operations or amount of pension funding contributions in future periods.

Howmet’s results of operations may be negatively affected by the amount of expense Howmet records for its pension and other postretirement benefit plans, by reductions in the fair value of plan assets and by other factors. Howmet calculates income or expense for its plans using actuarial valuations in accordance with accounting principles generally accepted in the United States of America. These valuations reflect assumptions about financial market and other economic conditions, which may change due to changes in key economic indicators. The most significant year-end assumptions used by Howmet to estimate pension or other postretirement benefit income or expense for the following year are the discount rate applied to plan liabilities and the expected long-term rate of return on plan assets. In addition, Howmet is required to make an annual measurement of plan assets and liabilities, which may result in a significant charge to shareholders’ equity. For a discussion regarding how Howmet’s financial statements can be affected by pension and other postretirement benefits accounting policies, see “Critical Accounting Policies and Estimates—Pension and Other Postretirement Benefits” in [Part II, Item 7](#) (Management’s Discussion and Analysis of Financial Condition and Results of Operations) and [Note H](#) to the Consolidated Financial Statements in [Part II, Item 8](#).

Adverse capital market conditions could result in reductions in the fair value of plan assets and increase the Company’s liabilities related to such plans. Additionally, unpredictable future declines in the discount rate or lower-than-expected investment returns on plan assets could lead to a decline in the plans’ funded status and result in higher than expected pension contributions. The foregoing factors may adversely affect the Company’s financial condition, liquidity and results of operations.

Dividends and share repurchases fall within the discretion of our Board of Directors and depend on a number of factors.

Share repurchases and the declaration of dividends fall within the discretion of Howmet's Board of Directors, and the Board's decision regarding such matters depends on many factors, including Howmet's financial condition, earnings, capital requirements, debt service obligations, covenants associated with certain of the Company's debt obligations, industry practice, legal requirements, regulatory constraints and other factors that the Board deems relevant. There can be no assurance that the Company will declare dividends or repurchase stock in the future in any particular amounts, or at all.

Risks Related to Legal and Regulatory Matters

Howmet may be exposed to significant legal proceedings, investigations or changes in U.S. federal, state or foreign law, regulation or policy.

The manufacture and sale of our products expose Howmet to potential product liability, personal injury, property damage and related claims. In the event that a Howmet product fails to perform as expected, regardless of fault, or is used in an unexpected manner, and such failure or use results in, or is alleged to result in, bodily injury and/or property damage or other losses, Howmet may be subject to product liability lawsuits and other claims, or may participate in a recall or other corrective action involving such product. In addition, if a Howmet product is perceived to be defective or unsafe, Howmet's sales could decrease, its reputation could be adversely impacted and Howmet could be exposed to government investigations or regulatory enforcement actions.

Howmet is also subject to a variety of global legal and regulatory compliance risks in connection with its business and products. These risks include, among other things, potential claims, class action lawsuits or compliance issues, including those relating to securities laws, employment laws, intellectual property rights, cyber, security and privacy, insurance, commercial matters, antitrust and competition, human rights, third-party relationships, ESG (including climate-related/sustainability and other) rules and regulations, supply chain operations and the manufacture and sale of products. An adverse outcome in one or more of proceedings or investigations, or unfavorable changes in laws, regulations or policies, or other contingencies that the Company cannot predict with certainty, could have a material adverse effect on the Company's financial condition, results of operations or cash flows, including reputational harm, loss of customers and substantial monetary damages and/or non-monetary penalties. For additional information regarding the legal proceedings involving the Company, see [Note V](#) to the Consolidated Financial Statements in [Part II, Item 8](#).

Our business may be adversely affected if we fail to comply with government contracting regulations.

We derive a portion of our revenue from sales to U.S. and foreign governments and their respective agencies. Such contracts are subject to various procurement laws and regulations and contract provisions relating to their formation, administration and performance. New laws and regulations or changes to existing ones (including, but not limited to, those related to subcontracting, cybersecurity and specialty metals) can increase our risks and/or costs. Failure to comply with these laws, regulations or provisions in our government contracts could result in the imposition of various civil and criminal penalties, termination of contracts, forfeiture of profits, suspension of payments, increased pricing pressure or suspension from future government contracting. If our government contracts are terminated, if we are suspended from government work, or if our ability to compete for new contracts is adversely affected, our financial condition and results of operation could be adversely affected.

Howmet's global operations expose Howmet to risks that could adversely affect its business, financial condition, results of operations, cash flows or the market price of its securities.

Howmet has operations or activities in numerous countries and regions outside the United States, including Europe, Mexico, China, and Japan. As a result, Howmet's global operations are affected by economic, political, legal, and other conditions in the United States and foreign countries in which Howmet does business, including (i) economic and commercial instability risks, including changes in local government laws, regulations and policies, such as those related to tariffs, sanctions and trade barriers, taxation, exchange controls, employment regulations and repatriation of assets or earnings; (ii) geopolitical risks such as political instability, civil unrest, expropriation, nationalization of properties by a government, imposition of sanctions, and renegotiation or nullification of existing agreements; (iii) war, cyber threats, terrorist activities or other dangerous conditions; (iv) compliance with applicable U.S. and foreign laws, including antitrust and competition regulations, the Foreign Corrupt Practices Act and other anti-bribery and corruption laws, and laws concerning trade, including the International Traffic in Arms Regulations, the Export Administration Regulations, and the sanctions, regulations and embargoes administered by the U.S. Department of Treasury's Office of Foreign Assets Control; (v) aggressive, selective or lax enforcement of laws and regulations by foreign governmental authorities; (vi) exposure to fluctuations in foreign currency exchange rates and interest rates, as well as inflation, economic factors, and currency controls in the countries in which it operates; and (vii) imposition of currency controls. Although the effect of any of the foregoing factors is difficult to predict, any one or more of them could adversely affect Howmet's business, financial condition or results of operations.

Howmet may face challenges to its intellectual property rights which could adversely affect the Company's reputation, business and competitive position.

Howmet owns important intellectual property, including patents, trademarks, copyrights and trade secrets. The Company's intellectual property plays an important role in maintaining Howmet's competitive position in a number of the markets that the Company serves. Howmet's competitors may develop technologies that are similar or superior to Howmet's proprietary technologies, or design around the patents Howmet owns or licenses. Despite its controls and safeguards, Howmet's technology may be misappropriated by its employees, its competitors or other third parties. The pursuit of remedies for any misappropriation of Howmet intellectual property is expensive and the ultimate remedies may be deemed insufficient. Further, in jurisdictions where the enforcement of intellectual property rights is less robust, the risk of misappropriation of Howmet intellectual property increases, despite efforts the Company undertakes to protect it. Developments or assertions by or against Howmet relating to intellectual property rights, and any inability to protect or enforce Howmet's rights sufficiently, could adversely affect Howmet's business and competitive position.

Unanticipated changes in Howmet's tax provisions or exposure to additional tax liabilities could affect Howmet's future profitability.

Howmet is subject to income taxes in both the United States and various non-U.S. jurisdictions. Its domestic and international tax liabilities are dependent upon the distribution of income among these different jurisdictions. Changes in applicable domestic or foreign tax laws and regulations, or their interpretation and application, including the possibility of retroactive effect, could affect the Company's tax expense and profitability. Howmet's tax expense includes estimates of additional tax that may be incurred for tax exposures and reflects various estimates and assumptions. The assumptions include assessments of future earnings of the Company that could impact the valuation of its deferred tax assets. The Company's future results of operations could be adversely affected by changes in the effective tax rate as a result of a change in the mix of earnings in countries with differing statutory tax rates, changes in the overall profitability of the Company, changes in tax legislation and rates, changes in generally accepted accounting principles, changes in the valuation of deferred tax assets and liabilities, the results of tax audits and examinations of previously filed tax returns or related litigation and continuing assessments of its tax exposures.

Labor disputes and other employee relations issues could adversely affect Howmet's business, financial condition or results of operations.

A significant portion of Howmet's employees are represented by labor unions in several countries under various collective bargaining agreements, each with varying durations and expiration dates. For more information, see "Employees" in [Part I, Item 1](#) (Business) of this report. Howmet may not be able to negotiate successor collective bargaining agreements upon expiration, in the United States and other countries, without a risk of labor disputes, including strikes or work stoppages. Howmet may also be subject to general country strikes or work stoppages unrelated to its business or collective bargaining agreements. Any such labor disputes or work stoppages (or potential work stoppages) could have a material adverse effect on Howmet's business, financial condition or results of operations.

Howmet is exposed to environmental, health and safety risks and is subject to a broad range of health, safety and environmental laws and regulations which may result in substantial costs and liabilities.

Howmet's operations worldwide are subject to numerous complex and increasingly stringent health, safety and environmental laws and regulations. The costs of complying with such laws and regulations, as well as participation in assessments and cleanups of sites, and internal voluntary programs, have been, and in the future could be, significant. Environmental matters for which Howmet may be liable may arise in the future at its present sites, at sites owned or operated by its predecessors or affiliates, at sites that it may acquire in the future, or at third-party sites used by Howmet, its predecessors or affiliates for material and waste handling and disposal. Compliance with health, safety and environmental laws and regulations, including remediation obligations, may impact Howmet's results of operations or liquidity in a particular period.

In addition, the industrial activities conducted at Howmet's facilities present a significant risk of injury or death to our employees or third parties that may be on site. Our operations are subject to regulation by various federal, state and local agencies in the United States, including the Occupational Safety and Health Administration, and regulation by foreign government entities abroad responsible for employee health and safety. Material liabilities relating to injury, death or other workers' compensation claims could have a material adverse effect on our results of operations and financial condition or result in negative publicity and/or significant reputational harm.

Howmet may be affected by global climate change or by legal, regulatory, customer or supplier responses to such change.

Increased concern over climate change has led to new and proposed legislative and regulatory initiatives, such as cap-and-trade systems and additional limits on emissions of greenhouse gases, which in turn may trigger customer decarbonization requirements. New or revised laws, regulations and policies in this area and customer decarbonization requirements could directly and indirectly affect Howmet and its customers and suppliers, including by increasing the costs of production or impacting demand for certain products, which could result in an adverse effect on our financial condition, results of operations and cash flows. Additionally, Howmet utilizes natural gas, electricity and other fuels to operate its facilities. Significant increased energy costs and/or costs to transition to renewable energy sources, as a result of new laws, such as carbon pricing or product energy efficiency requirements, or as a result of customer requirements, could be passed along to the Company and its customers and suppliers. Compliance with any new or more stringent laws or regulations, or stricter interpretations of existing laws, could require additional expenditures by the Company or its customers or suppliers.

Physical risks associated with climate change may result in an increase of the exposure to, and impact of, events with damage due to flooding, extreme winds and extreme precipitation for Howmet locations, suppliers or customers. Prolonged periods of drought may result in wildfires and/or restrictions on process water use. These climate-related impacts may have an adverse effect on production capacity of Howmet sites, suppliers and customers. These types of incidents could have a material adverse effect on our results of operations and financial condition.

With respect to the various transaction agreements that the Company entered into in connection with its separation transactions, if the counterparties fail to meet their obligations or if we have material indemnification obligations under such agreements, our business, results of operations and financial condition may be materially adversely affected.

In connection with our separation transactions, we entered into various agreements with Arconic Corporation and Alcoa Corporation, including respective Separation and Distribution agreements pursuant to which Arconic Corporation and Alcoa Corporation agreed to indemnify us for certain liabilities, and we agreed to indemnify those parties for certain liabilities. We rely on these parties to satisfy their performance and payment obligations under these agreements. If either party is unable or unwilling to satisfy its obligations under its applicable agreements, we could incur operational difficulties and/or material losses. The indemnities that we are required to provide Alcoa Corporation and Arconic Corporation under these agreements are currently not material. If either Alcoa Corporation or Arconic Corporation, as applicable, is not able to fully satisfy its indemnification obligations to us, we may be required to bear such losses. Each of these risks could negatively affect our business, results of operations and financial condition.

The Arconic Inc. Separation Transaction could result in substantial tax liability.

It was a condition to the distribution of all outstanding shares of Arconic Corporation common stock to the Company's stockholders (the "Distribution of Arconic"), which effected the Arconic Inc. Separation Transaction, that we receive an opinion of our outside counsel regarding the qualification of the distribution as a "reorganization" within the meaning of Sections 355 and 368(a)(1)(D) of the Internal Revenue Code of 1986, as amended (the "Code"). This condition was satisfied prior to the Distribution of Arconic. However, if any of the facts, representations, or undertakings of the opinion is, or becomes, inaccurate or incomplete, the opinion of counsel may be invalid and the conclusions reached therein could be jeopardized. Further, the Internal Revenue Service (the "IRS") could determine that any of the facts, representations or undertakings are false or have been violated. Additionally, the opinion of counsel is not binding on the IRS or any court and the IRS or a court may disagree with the conclusions in the opinion of counsel. In the event the IRS were to prevail with such challenge, we, our stockholders and Arconic Corporation could be subject to significant U.S. federal income tax liability. In addition, even if the Distribution of Arconic, together with certain related transactions, otherwise qualifies for tax-free treatment under current U.S. federal income tax law, the Distribution of Arconic may nevertheless be rendered taxable to us as a result of certain post-distribution transactions, including certain acquisitions of shares or assets of ours or Arconic Corporation.

Under the tax matters agreement we entered into with Arconic Corporation in connection with the Arconic Inc. Separation Transaction, Arconic Corporation may be required to indemnify us for any taxes resulting from the separation due to certain actions, including Arconic Corporation's representations, covenants or undertakings contained in the separation agreement and certain other agreements, including the opinion of counsel, being incorrect or violated. However, Arconic Corporation may not be able to fully satisfy its indemnification obligations. In addition, we may incur other tax costs in connection with the Arconic Inc. Separation Transaction, including non-U.S. tax costs resulting from transactions in non-U.S. jurisdictions, which may be material. Each of these risks could negatively affect our business, results of operations and financial condition.

Item 1B. Unresolved Staff Comments.

None.

Item 2. Properties.

Howmet's principal office and corporate center is located at 201 Isabella Street, Suite 200, Pittsburgh, Pennsylvania 15212-5872. In the second quarter of 2022, the Company sold this property and entered into a 12-year lease with the purchaser for a portion of the property.

Howmet leases some of its facilities; however, it is the opinion of management that the leases do not materially affect the continued use of the properties or the properties' values.

Howmet believes that its facilities are suitable and adequate for its operations. Although no title examination of properties owned by Howmet has been made for the purpose of this report, the Company knows of no material defects in title to any such properties. See [Note A](#) and [Note O](#) to the Consolidated Financial Statements in [Part II, Item 8](#) of this Form 10-K.

Howmet has active plants and holdings in various geographic areas. See the table regarding the Company's principal facilities in [Part I, Item 1](#) (Business).

Item 3. Legal Proceedings.

In the ordinary course of its business, Howmet is involved in a number of lawsuits and claims, both actual and potential. For a discussion of legal proceedings, see [Note V](#) to the Consolidated Financial Statements in [Part II, Item 8](#) of this Form 10-K.

Item 4. Mine Safety Disclosures.

Not applicable.

PART II

Item 5. Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities.

The Company's common stock is listed on the New York Stock Exchange under the symbol "HWM." Prior to the Arconic Inc. Separation Transaction on April 1, 2020, the Company was known as Arconic Inc. and was listed under the stock symbol "ARNC."

The number of holders of record of common stock was 9,404 as of February 13, 2023.

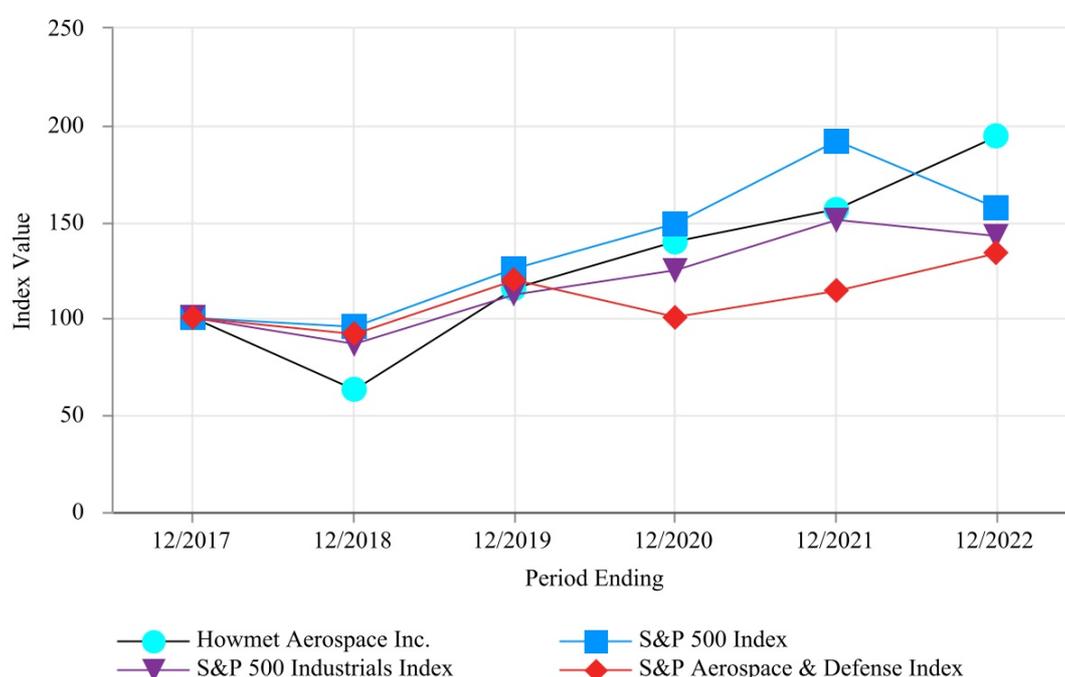
Stock Performance Graph

The following graph compares the most recent five-year performance of the Company’s common stock with (1) the Standard & Poor’s (“S&P”) 500[®] Index, (2) the S&P 500[®] Industrials Index, a group of 70 companies categorized by Standard & Poor’s as active in the “industrials” market sector, and (3) the S&P Aerospace & Defense Index, which comprises General Dynamics Corporation, Howmet Aerospace Inc., Huntington Ingalls Industries, L3Harris Technologies, Inc., Lockheed Martin Corporation, Northrop Grumman Corporation, Raytheon Technologies Corporation, Textron Inc., The Boeing Company, and Transdigm Group Inc.

The graph assumes, in each case, an initial investment of \$100 on December 31, 2017, and the reinvestment of dividends. The historical prices of the Company presented in the graph and table have been adjusted to reflect the impact of the April 2020 Arconic Inc. Separation Transaction. Because the starting point of the graph is December 31, 2017, the effect of the November 2016 Alcoa Inc. Separation Transaction is already reflected in the Company’s stock price on December 31, 2017. The graph, table and related information shall not be deemed to be “filed” with the SEC, nor shall such information be incorporated by reference into future filings under the Securities Act of 1933 or Securities Exchange Act of 1934, each as amended, except to the extent that the Company specifically incorporates it by reference into such filing.

Cumulative Total Return

Based upon an initial investment of \$100 at December 31, 2017 with dividends reinvested



As of December 31,	2017	2018	2019	2020	2021	2022
Howmet Aerospace Inc.	\$ 100.00	\$ 62.78	\$ 115.45	\$ 139.82	\$ 156.14	\$ 193.87
S&P 500 [®] Index	100.00	95.62	125.72	148.85	191.58	156.89
S&P 500 [®] Industrials Index	100.00	86.71	112.17	124.59	150.89	142.63
S&P Aerospace & Defense Index	100.00	91.93	119.81	100.56	113.86	133.64

Issuer Purchases of Equity Securities

The following table presents information with respect to the Company’s open-market repurchases of its common stock during the quarter ended December 31, 2022:

Period	Total Number of Shares Purchased	Average Price Paid Per Share ⁽¹⁾	Total Number of Shares Purchased as Part of Publicly Announced Repurchase Plans or Programs	Approximate Dollar Value of Shares that May Yet Be Purchased Under the Plans or Programs ⁽¹⁾⁽²⁾ (in millions)
October 1 - October 31, 2022	—	\$ —	—	\$ 1,012
November 1 - November 30, 2022	—	\$ —	—	\$ 1,012
December 1 - December 31, 2022	1,677,711 ⁽³⁾	\$ 38.83	1,674,082	\$ 947
Total for quarter ended December 31, 2022	1,677,711	\$ 38.83	1,674,082	

⁽¹⁾ Excludes commissions cost.

⁽²⁾ On August 18, 2021, the Company announced that its Board of Directors authorized a share repurchase program of up to \$1,500 million of the Company’s outstanding common stock. After giving effect to the share repurchases made through the fourth quarter of 2022, approximately \$947 million Board authorization remained available as of January 1, 2023. Under the Company’s share repurchase programs (the “Share Repurchase Programs”), the Company may repurchase shares by means of trading plans established from time to time in accordance with Rule 10b5-1 under the Securities Exchange Act of 1934, as amended, block trades, private transactions, open market repurchases and/or accelerated share repurchase agreements or other derivative transactions. There is no stated expiration for the Share Repurchase Programs. Under its Share Repurchase Programs, the Company may repurchase shares from time to time, in amounts, at prices, and at such times as the Company deems appropriate, subject to market conditions, legal requirements and other considerations. The Company is not obligated to repurchase any specific number of shares or to do so at any particular time, and the Share Repurchase Programs may be suspended, modified or terminated at any time without prior notice.

⁽³⁾ Amount includes the surrender of 3,629 shares of Howmet common stock by a participant in the Company’s stock incentive plan to the Company to satisfy the exercise price and tax withholding obligations of employee stock options at the time of exercise. These surrendered shares are not part of any Share Repurchase Programs.

Item 6. Selected Financial Data.

Reserved.

Item 7. Management’s Discussion and Analysis of Financial Condition and Results of Operations.

(dollars in millions, except share and per-share amounts)

The following Management’s Discussion and Analysis of Financial Condition and Results of Operations (“MD&A”) is intended to help the reader understand our results of operations and financial condition. The MD&A is provided as a supplement to, and should be read in conjunction with, our consolidated financial statements and notes thereto included in [Part II, Item 8](#) (Financial Statements and Supplementary Data) of this Form 10-K.

Overview

Our Business

Howmet is a global leader in lightweight metals engineering and manufacturing. Howmet’s innovative, multi-material products, which include nickel, titanium, aluminum, and cobalt, are used worldwide in the aerospace (commercial and defense), commercial transportation, and industrial and other markets.

Howmet is a global company operating in 20 countries. Based upon the country where the point of shipment occurred, North America and Europe generated 71% and 22%, respectively, of Howmet’s sales in 2022. In addition, Howmet has operating activities in numerous countries and regions outside of North America and Europe, including China and Japan. Governmental policies, laws and regulations, and other economic factors, including inflation and fluctuations in foreign currency exchange rates and interest rates, affect the results of operations in countries with such activities.

Management Review of 2022 and Outlook

The Company derived approximately 46% of its revenue from products sold to the commercial aerospace market for the year ended December 31, 2022 which is substantially less than the pre-pandemic 2019 annual rate of approximately 60%. Due to the global COVID-19 pandemic and its impact on the commercial aerospace industry to date, there has been a decrease in domestic and international air travel, which in turn has adversely affected demand for narrow-body and wide-body aircraft. Although domestic air travel now approximates pre-pandemic levels, China domestic air travel is still below pre-pandemic 2019 levels on an average monthly basis in 2022. International travel also continues to be lower than pre-pandemic 2019 levels. We expect commercial aerospace growth to continue, with narrow-body demand returning faster than wide-body demand. The commercial wide-body aircraft market is taking longer to recover, which is creating a shift in our product mix compared to pre-pandemic conditions. In addition to the impact from the pandemic, the timing and level of future aircraft builds by OEMs are subject to changes and uncertainties, such as declines in Boeing 787 production rates due to delays in its recertification, which may cause our future results to differ from prior periods due to changes in product mix in certain segments.

In 2022, Sales increased 14% over 2021 primarily as a result of higher sales in the commercial aerospace market, an increase in material cost pass through of \$225, and favorable product pricing of \$67, partially offset by lower sales in the defense aerospace market. Price increases are in excess of material and inflationary cost pass through to our customers.

Income from continuing operations before income taxes increased 87% from 2021. Total Segment Adjusted EBITDA⁽¹⁾ increased 13% from 2021 due to favorable sales in the commercial aerospace market, cost reductions, and favorable product pricing, partially offset by Boeing 787 production declines and lower sales in the defense aerospace market and inflationary costs.

Management continued its focus on liquidity and cash flows as well as improving its operating performance through profitable revenue, efficient operations, and margin enhancement. Management has also continued its intensified focus on capital efficiency. Management’s focus and the related results enabled Howmet to end 2022 with a solid financial position.

The following financial information reflects certain key highlights of Howmet’s 2022 results:

- Sales of \$5,663, an increase of 14% from 2021, with higher sales in the commercial aerospace market;
- Net income from continuing operations of \$469, or \$1.11 per diluted share;
- Income from continuing operations before income taxes of \$606, an increase of \$282, or 87%, from 2021;
- Total Segment Adjusted EBITDA⁽¹⁾ of \$1,352, an increase of \$152, or 13%, from 2021;
- Cash on hand and restricted cash at the end of the year of \$792;
- Cash provided from operations of \$733; cash used for financing activities of \$526; and cash used for investing activities of \$135;
- Purchased approximately 11 million shares of Common Stock under the Share Repurchase Programs for approximately \$400;

- Total debt of \$4,162, a decrease of \$70 from 2021, reflecting repurchases of \$69 of the 5.125% Notes due October 2024 (the “5.125% Notes”) during 2022; and
- The Company’s common stock had a closing price of \$39.41 per share at December 30, 2022, an increase of \$26.21 per share, or 199%, since the Arconic Inc. Separation Transaction on April 1, 2020, compared to an increase of 55% for both the S&P 500® Index and S&P Aerospace & Defense Select Industry Index over the same period.

⁽¹⁾ See below in Results of Operations for the reconciliation of Total Segment Adjusted EBITDA to Income from continuing operations before income taxes.

In 2023, management projects sales to increase as we expect solid growth in the commercial aerospace market, and the Company’s strong position in that market is expected to continue. Earnings per share is expected to grow as management continues to focus on operational performance. Cash provided from operations is expected to increase for the full year in 2023 compared with 2022, resulting from a continued focus on operating performance and on capital efficiency. Capital expenditures are expected to be less than depreciation and amortization.

Results of Operations

Earnings Summary

Sales. Sales for 2022 were \$5,663 compared with \$4,972 in 2021, an increase of \$691, or 14%. The increase was primarily due to higher sales in the commercial aerospace market, an increase in material cost pass through of \$225, and favorable product pricing of \$67, partially offset by lower sales in the defense aerospace market. Price increases are in excess of material and inflationary pass through to our customers.

Sales for 2021 were \$4,972 compared with \$5,259 in 2020, a decrease of \$287, or 5%. The decrease was primarily due to lower sales in the commercial aerospace market driven by the impact of COVID-19 and Boeing 787 production declines and lower sales in the defense aerospace market, partially offset by growth in the commercial transportation and industrial gas turbine markets as well as favorable product pricing of \$97. Price increases are in excess of material and inflationary cost pass through to our customers.

Cost of goods sold (“COGS”). COGS as a percentage of Sales was 72.5% in 2022 compared with 72.3% in 2021. The increase was primarily due to increased costs related to three plant fires, as well as material cost pass through and increased net headcount, primarily in the Engine Products and Fastening Systems segments, in anticipation of future revenue increases, partially offset by higher volumes and favorable product pricing. The Company had total COGS charges of \$59 in 2022, offset by partial insurance claims reimbursements of \$23, related to fires that occurred in 2019 at a Fastening Systems plant in France (the “France Plant Fire”), at a Forged Wheels plant in Barberton, Ohio in mid-February 2020 (the “Barberton Plant Fire”), and a mechanical failure resulting in substantial heat and fire-related damage to equipment at the Company’s cast house in Barberton, Ohio in the third quarter of 2022 (the “Barberton Cast House Incident”), compared to total COGS charges of \$28 in 2021, offset by partial insurance claims reimbursements of \$32, related to the France Plant Fire and the Barberton Plant Fire. The insurance claims related to these three plant fires were in excess of the insurance deductible. During the fourth quarter of 2022, the Company settled the insurance claim related to the Barberton Plant Fire. The downtime related to these plant fires in 2022 and 2021 reduced production levels and affected productivity at the plants. The Company anticipates additional charges related to these plant fires of approximately \$5 to \$10 in 2023.

COGS as a percentage of Sales was 72.3% in 2021 compared with 73.7% in 2020. The decrease was primarily due to structural cost reductions and favorable product pricing. Additionally, the Company submitted insurance claims related to the France Plant Fire and Barberton Plant Fire and received partial settlements of \$32 in 2021 compared to \$39 in 2020, which were in excess of the insurance deductibles. In 2021, the Company recorded charges of \$28 related to plant fires compared to \$41 in 2020. The downtime reduced production levels and affected productivity at the plants.

Selling, general administrative, and other expenses (“SG&A”). SG&A expenses were \$288, or 5.1% of Sales, in 2022 compared with \$251, or 5.0% of Sales, in 2021. The increase in SG&A of \$37, or 15%, was primarily due to higher employment, travel, and lease costs in 2022, as well as legal and other advisory reimbursements received in 2021 that did not recur in 2022.

SG&A expenses were \$251, or 5.0% of Sales, in 2021 compared with \$277, or 5.3% of Sales, in 2020. The decrease in SG&A of \$26, or 9%, was primarily due to overhead cost reductions in 2021 and costs incurred in 2020 associated with the Arconic Inc. Separation Transaction that did not recur in 2021.

Research and development expenses (“R&D”). R&D expenses were \$32 in 2022 compared with \$17 in 2021. The increase of \$15, or 88%, was primarily due to higher spending on technology projects across all segments.

R&D expenses were \$17 in both 2021 and 2020.

Provision for depreciation and amortization (“D&A”). The provision for D&A was \$265 in 2022 compared with \$270 in 2021. The decrease of \$5, or 2%, was primarily driven by lower corporate software amortization and reduced depreciation due to the sale of the corporate center.

The provision for D&A was \$270 in 2021 compared with \$279 in 2020. The decrease of \$9, or 3%, was primarily driven by lower corporate software amortization and research center depreciation as well as \$1 of D&A related to the Barberton Plant Fire in 2021 compared to \$6 in 2020.

Restructuring and other charges. Restructuring and other charges were \$56 in 2022 compared with \$90 in 2021 and \$182 in 2020.

Restructuring and other charges in 2022 consisted primarily of a \$58 charge for U.S. and United Kingdom (“U.K.”) pension plans' settlement accounting and a \$6 charge for various other exit costs. These charges were partially offset by a gain of \$8 on the sale of assets at a small U.S. manufacturing facility in Engine Products. The Company has closed some small manufacturing facilities and may in the future close additional small facilities in order to consolidate operations, reduce fixed costs, and exit less profitable businesses.

Restructuring and other charges in 2021 consisted primarily of a \$75 charge for U.K. and U.S. pension plans' settlement accounting, a \$15 charge for accelerated depreciation primarily related to the closure of small U.S. manufacturing facilities in Engine Products and Fastening Systems, a \$7 charge for layoff costs, a \$4 charge for impairment of assets associated with an agreement to sell a small manufacturing business in France, and a \$4 charge for various other exit costs. These charges were partially offset by a gain of \$12 on the sale of assets at a small U.S. manufacturing facility in Fastening Systems and a benefit of \$3 related to the reversal of a number of layoff reserves related to prior periods.

Restructuring and other charges in 2020 consisted primarily of a \$113 charge for layoff costs, a \$74 charge for U.K. and U.S. pension plans' settlement accounting, a \$5 post-closing adjustment related to the sale of the Company's U.K. forgings business, a \$5 charge for impairment of assets associated with an agreement to sell an aerospace components business in the U.K, which ultimately did not occur and the business was returned to held for use, and a \$5 charge related to the impairment of a cost method investment. These charges were partially offset by a benefit of \$21 related to the reversal of a number of prior period programs.

See [Note E](#) to the Consolidated Financial Statements in [Part II, Item 8](#) (Financial Statements and Supplementary Data) of this Form 10-K.

Interest expense, net. Interest expense, net was \$229 in 2022 compared with \$259 in 2021. The decrease of \$30, or 12%, was primarily due to a reduced average level of debt for the year ended December 31, 2022 compared to the year ended December 31, 2021. On an annual basis, the partial repayment of the 5.125% Notes in 2022 will decrease Interest expense, net by approximately \$4.

Interest expense, net was \$259 in 2021 compared with \$317 in 2020. The decrease of \$58, or 18%, was primarily due to a reduced average level of debt for the year ended December 31, 2021 compared to the year ended December 31, 2020.

See [Note R](#) to the Consolidated Financial Statements in [Part II, Item 8](#) (Financial Statements and Supplementary Data) of this Form 10-K.

Loss on debt redemption. Debt redemption or tender premiums include the cost to redeem or repurchase certain of the Company's notes at a price which may be equal to the greater of the principal amount or the sum of the present values of the remaining scheduled payments, discounted using a defined treasury rate plus a spread, or a price based on the market price of its notes. Loss on debt redemption was \$2 in 2022 compared with \$146 in 2021. The decrease of \$144 was primarily due to higher debt premiums paid in 2021 related to the repurchases of the 6.875% Notes due 2025 (the “6.875% Notes”), the 5.870% Notes due 2022, and the 5.125% Notes.

Loss on debt redemption was \$146 in 2021 compared with \$64 in 2020. The increase of \$82, or 128%, was primarily due to debt premiums paid in 2021 on the 6.875% Notes, partially offset by debt redemption or tender premiums, as applicable, paid in 2020 on the repurchases of the 6.150% Notes due 2020 (the “6.150% Notes”) and the 5.400% Notes due 2021.

See [Note R](#) to the Consolidated Financial Statements in [Part II, Item 8](#) (Financial Statements and Supplementary Data) of this Form 10-K.

Other expense, net. Other expense, net was \$82 in 2022 compared with \$19 in 2021. The increase in expense of \$63 was primarily driven by the adverse judgment of \$65 related to Lehman Brothers International (Europe) (“LBIE”) swaps that were entered into in 2007 and 2008, which were assumed as part of the Firth Rixson acquisition in 2014, an increase from net realized and unrealized losses of \$9, primarily related to mark-to-market adjustments on exchange-traded fixed income securities and losses on sales of receivables, and higher non-service related net periodic benefit costs related to pension and other postretirement benefit plans in 2022 of \$7, partially offset by the impacts of deferred compensation arrangements of \$16

and higher interest income of \$4. Non-service related net periodic benefit costs related to defined benefit plans is expected to increase by approximately \$20 from 2022 to 2023.

Other expense, net was \$19 in 2021 compared with \$74 in 2020. The decrease in expense of \$55 was primarily driven by the write-off of an indemnification receivable of \$53 related to a Spanish tax reserve, reflecting Alcoa Corporation's 49% share and Arconic Corporation's 33.66% share, that occurred in 2020 and did not occur in 2021 and lower non-service related net periodic benefit costs related to pension and other postretirement benefit plans in 2021 of \$17, which were partially offset by an increase in foreign currency gains of \$13. Non-service related net periodic benefit costs related to defined benefit plans declined approximately 65% from 2020 to 2021.

Income taxes. Howmet's effective tax rate was 22.6% (provision on pre-tax income) in 2022 compared with the U.S. federal statutory rate of 21%. The effective rate differs from the U.S. federal statutory rate primarily as a result of a \$12 charge related to an increase in the valuation allowance on a foreign tax credit carryforward in the U.S., \$8 of charges related to U.S. tax on Global Intangible Low-Taxed Income ("GILTI") and other foreign earnings, \$8 of charges related to nondeductible expenses, and \$5 of incremental state tax and foreign taxes on earnings also subject to U.S. federal income tax, partially offset by a \$6 benefit for the release of a valuation allowance on interest deduction carryforwards in the U.K., a \$5 benefit related to a tax accounting method change, a \$5 excess benefit for stock compensation, and a \$3 benefit related to a distribution of foreign earnings. The Inflation Reduction Act of 2022 (the "Act") was signed into law on August 16, 2022. The Act includes various tax provisions, including a 1% excise tax on stock repurchases, expanded tax credits for clean energy incentives, and a corporate alternative minimum tax that generally applies to U.S. corporations with average adjusted financial statement income over a three-year period in excess of \$1,000. The Company does not expect the Act to materially impact its financial statements. Howmet anticipates that the effective tax rate in 2023 will be between 22.5% and 23.5%.

Howmet's effective tax rate was 20.4% (provision on pre-tax income) in 2021 compared with the U.S. federal statutory rate of 21%. The effective rate differs from the U.S. federal statutory rate primarily as a result of a \$32 benefit from the recognition of income tax credits related to development incentives in Hungary, and a \$9 benefit related to updated U.S. regulatory guidance concerning the utilization of foreign tax credits in connection with the one-time transition tax on the deemed repatriation of previously non-taxed post-1986 earnings and profits of certain foreign subsidiaries enacted as part of the U.S. Tax Cuts and Jobs Act of 2017 (the "2017 Act"), partially offset by \$9 of charges from the decision to no longer permanently reinvest earnings in certain foreign subsidiaries, \$7 of charges from distributions of foreign earnings, \$8 of charges to establish a valuation allowance on certain net operating losses in Switzerland, \$6 of charges related to U.S. tax on foreign income, and other impacts related to nondeductible expenses including foreign losses with no tax benefit.

Howmet's effective tax rate was 23.4% (benefit on pre-tax income) in 2020 compared with the U.S. federal statutory rate of 21%. The effective rate differs from the U.S. federal statutory rate primarily as a result of a \$64 benefit related to the release of an income tax reserve following a favorable Spanish tax case decision, a \$30 benefit related to the recognition of a previously uncertain U.S. tax position, and a \$30 benefit for a U.S. tax law change related to the issuance of final regulations that provide for an exclusion of certain high-taxed foreign earnings from the calculation of GILTI, partially offset by U.S. tax on foreign earnings, \$8 of charges related to the remeasurement of deferred tax balances as a result of the Arconic Inc. Separation Transaction, the tax impact of \$49 of nondeductible loss related to the reversal of indemnification receivables associated with the favorable Spanish tax case decision, and the tax impact of other nondeductible expenses.

Net income from continuing operations. Net income from continuing operations was \$469, or \$1.11 per diluted share, for 2022 compared to \$258, or \$0.59 per diluted share, in 2021. The increase in results of \$211, or 82%, was primarily due to higher sales in the commercial aerospace market, a decrease in the Loss on debt redemption of \$144, favorable product pricing of \$67, a decrease of \$34 in Restructuring and other charges, and a decrease in Interest expense, net of \$30, partially offset by lower sales in the defense aerospace market, an increase in other inflationary costs, the adverse judgment related to the LBIE legal proceeding of \$65, and an increase in the Provision for income taxes primarily driven by an increase in income before income taxes.

Net income from continuing operations was \$258, or \$0.59 per diluted share, for 2021 compared to \$211, or \$0.48 per diluted share, in 2020. The increase in results of \$47, or 22%, was primarily due to cost reductions, a decrease of \$92 in Restructuring and other charges, and a decrease of \$58 in Interest expense, net, due to lower long-term debt levels, partially offset by lower sales in the commercial aerospace and defense aerospace market, an increase in the Provision for income taxes, and an increase in the Loss on debt redemption of \$82.

Net income. Net income was \$469 for 2022, all of which was composed of \$469 of income from continuing operations, or \$1.11 per diluted share.

Net income was \$258 for 2021, all of which was composed of \$258 of income from continuing operations, or \$0.59 per diluted share.

Net income was \$261 for 2020, composed of \$211 of income from continuing operations and \$50 from discontinued operations as a result of the Arconic Inc. Separation Transaction, or \$0.48 and \$0.11 per diluted share, respectively.

See details of discontinued operations in [Note C](#) to the Consolidated Financial Statements in [Part II, Item 8](#) (Financial Statements and Supplementary Data) of this Form 10-K.

Segment Information

The Company's operations consist of four worldwide reportable segments: Engine Products, Fastening Systems, Engineered Structures and Forged Wheels. Segment performance under Howmet's management reporting system is evaluated based on a number of factors; however, the primary measure of performance is Segment Adjusted EBITDA. Prior to the first quarter of 2022, the Company used Segment operating profit as its primary measure of performance. However, the Company's CEO believes that Segment Adjusted EBITDA is now a better representation of its business because it provides additional information with respect to the Company's operating performance and the Company's ability to meet its financial obligations. Howmet's definition of Segment Adjusted EBITDA (Earnings before interest, taxes, depreciation, and amortization) is net margin plus an add-back for depreciation and amortization. Net margin is equivalent to Sales minus the following items: Cost of goods sold; Selling, general administrative, and other expenses; Research and development expenses; and Provision for depreciation and amortization. Special items, including Restructuring and other charges, are excluded from Net margin and Segment Adjusted EBITDA. Segment Adjusted EBITDA may not be comparable to similarly titled measures of other companies. Differences between the total segment and consolidated totals are in Corporate (see [Note D](#) to the Consolidated Financial Statements in [Part II, Item 8](#) (Financial Statements and Supplementary Data) of this Form 10-K).

The Company has aligned its operations consistent with how the CEO assesses operating performance and allocates capital.

The Company produces aerospace engine parts and components and aerospace fastening systems for 737 MAX airplanes. From late December 2019 and throughout 2020, Boeing suspended production of 737 MAX airplanes. While regulatory authorities in the United States and certain other jurisdictions lifted grounding orders beginning in late 2020, our sales remained at lower levels throughout 2021 due to the residual impacts of the 737 MAX grounding. Sales related to the 737 MAX improved in 2022 year over year, contributing to commercial aerospace growth.

The Company also produces aerospace engine parts and components and aerospace fastening systems for Boeing 787 airplanes. Boeing paused deliveries of its 787 aircraft between May 2021 and August 2022. As a result of the significant decline in Boeing 787 production rates, our sales remained at lower levels throughout 2022. We expect increased sales related to the Boeing 787 in 2023 year over year.

Income from continuing operations before income taxes totaled \$606 in 2022, \$324 in 2021, and \$171 in 2020. Segment Adjusted EBITDA for all reportable segments totaled \$1,352 in 2022, \$1,200 in 2021, and \$1,152 in 2020. See below for the reconciliation of Income from continuing operations before income taxes to Total Segment Adjusted EBITDA.

The following information provides Sales, Segment Adjusted EBITDA, and Segment Adjusted EBITDA Margin for each reportable segment for each of the three years in the period ended December 31, 2022.

Engine Products

	2022	2021	2020
Third-party sales	\$ 2,698	\$ 2,282	\$ 2,406
Segment Adjusted EBITDA	729	564	540
Segment Adjusted EBITDA Margin	27.0 %	24.7 %	22.4 %

Engine Products produces investment castings, including airfoils, and seamless rolled rings primarily for aircraft engines (aerospace commercial and defense) and industrial gas turbines. Engine Products produces rotating parts as well as structural parts, which are sold directly to customers. Generally, the sales and costs and expenses of this segment are transacted in the local currency of the respective operations, which are mostly the U.S. dollar, British pound, euro, and Japanese yen.

Third-party sales for the Engine Products segment increased \$416, or 18%, in 2022 compared with 2021, primarily due to higher volumes in the commercial aerospace and oil and gas markets as well as an increase in material cost pass through and favorable product pricing.

Third-party sales for the Engine Products segment decreased \$124, or 5%, in 2021 compared with 2020, primarily due to lower volumes in the commercial aerospace market driven by the impact of COVID-19 and Boeing 787 production declines and lower volumes in the defense aerospace market, partially offset by higher volumes in the industrial gas turbine market.

Segment Adjusted EBITDA for the Engine Products segment increased \$165, or 29%, in 2022 compared with 2021, primarily due to higher volumes in the commercial aerospace and oil and gas markets as well as productivity gains and favorable product pricing. The segment added approximately 950 net headcount since the end of 2021 in anticipation of revenue increases into 2023.

Segment Adjusted EBITDA for the Engine Products segment increased \$24, or 4%, in 2021 compared with 2020, primarily due to cost reductions and favorable product pricing, partially offset by lower volumes in the commercial aerospace market driven by the impact of COVID-19 and Boeing 787 production declines, and lower volumes in the defense aerospace market.

Segment Adjusted EBITDA Margin for the Engine Products segment increased approximately 230 basis points in 2022 compared with 2021, primarily due to higher volumes in the commercial aerospace and oil and gas markets as well as productivity gains, partially offset by an increase in material cost pass through.

Segment Adjusted EBITDA Margin for the Engine Products segment increased approximately 230 basis points in 2021 compared with 2020, primarily due to cost reductions and favorable product pricing, partially offset by lower volumes in the commercial aerospace market driven by the impact of COVID-19 and Boeing 787 production declines, and lower volumes in the defense aerospace market.

In 2023, as compared to 2022, demand in the commercial aerospace, industrial gas turbine, and oil and gas markets is expected to increase. Additionally, an increase in other inflationary costs is expected to contribute to an increase in sales as the Company generally passes through these costs.

Fastening Systems

	2022	2021	2020
Third-party sales	\$ 1,117	\$ 1,044	\$ 1,245
Segment Adjusted EBITDA	234	239	295
Segment Adjusted EBITDA Margin	20.9 %	22.9 %	23.7 %

Fastening Systems produces aerospace fastening systems, as well as commercial transportation fasteners. The business's high-tech, multi-material fastening systems are found nose to tail on aircraft and aero engines. The business's products are also critical components of automobiles, commercial transportation vehicles, and construction and industrial equipment. Fastening Systems are sold directly to customers and through distributors. Generally, the sales and costs and expenses of this segment are transacted in the local currency of the respective operations, which are mostly the U.S. dollar, British pound, and euro.

Third-party sales for the Fastening Systems segment increased \$73, or 7%, in 2022 compared with 2021, primarily due to higher volumes in the commercial aerospace market, with narrow body recovery more than offsetting Boeing 787 production declines, higher volumes in the commercial transportation market, and an increase in material cost pass through, partially offset by lower volumes in the industrial market.

Third-party sales for the Fastening Systems segment decreased \$201, or 16%, in 2021 compared with 2020, primarily due to lower volumes in the commercial aerospace market, driven by the impact of COVID-19 and Boeing 787 production declines, partially offset by higher volumes in the commercial transportation and industrial markets.

Segment Adjusted EBITDA for the Fastening Systems segment decreased \$5, or 2%, in 2022 compared with 2021, primarily due to Boeing 787 production declines, lower volumes in the industrial market, and inflationary costs, partially offset by higher volumes in the narrow body commercial aerospace and commercial transportation markets. The segment added approximately 400 net headcount since the end of 2021 in anticipation of revenue increases into 2023.

Segment Adjusted EBITDA for the Fastening Systems segment decreased \$56, or 19%, in 2021 compared with 2020, primarily due to lower volumes in the commercial aerospace market, driven by the impact of COVID-19 and Boeing 787 production declines, partially offset by cost reductions and higher volumes in the commercial transportation and industrial markets.

Segment Adjusted EBITDA Margin for the Fastening Systems segment decreased approximately 200 basis points in 2022 compared with 2021, primarily due to Boeing 787 production declines, lower volumes in the industrial market, and inflationary costs, partially offset by favorable volumes in the narrow body commercial aerospace and commercial transportation markets.

Segment Adjusted EBITDA Margin for the Fastening Systems segment decreased approximately 80 basis points in 2021 compared with 2020, primarily due to lower volumes in the commercial aerospace market, driven by the impact of COVID-19 and Boeing 787 production declines, partially offset by cost reductions and higher volumes in the commercial transportation and industrial markets.

In 2023, as compared to 2022, demand in the commercial aerospace and industrial markets is expected to increase. Additionally, an increase in other inflationary costs is expected to contribute to an increase in sales as the Company generally passes through these costs.

Engineered Structures

	2022	2021	2020
Third-party sales	\$ 790	\$ 725	\$ 927
Segment Adjusted EBITDA	111	103	125
Segment Adjusted EBITDA Margin	14.1 %	14.2 %	13.5 %

Engineered Structures produces titanium ingots and mill products for aerospace and defense applications and is vertically integrated to produce titanium forgings, extrusions forming and machining services for airframe, wing, aero-engine, and landing gear components. Engineered Structures also produces aluminum forgings, nickel forgings, and aluminum machined components, and assemblies for aerospace and defense applications. The segment's products are sold directly to customers and through distributors, and sales and costs and expenses of this segment are generally transacted in the local currency of the respective operations, which are mostly the U.S. dollar and British pound.

Third-party sales for the Engineered Structures segment increased \$65, or 9%, in 2022 compared with 2021, primarily due to higher volumes in the narrow body commercial aerospace market as well as an increase in material cost pass through and favorable product pricing, partially offset by lower volumes in the defense aerospace market, including lower F-35 program volumes, and Boeing 787 production declines.

Third-party sales for the Engineered Structures segment decreased \$202, or 22%, in 2021 compared with 2020, primarily due to lower volumes in the commercial aerospace market, driven by the impact of COVID-19 and Boeing 787 production declines, and lower volumes in the defense aerospace market, including lower F-35 program volumes.

Segment Adjusted EBITDA for the Engineered Structures segment increased \$8, or 8%, in 2022 compared with 2021, primarily due to higher volumes in the narrow body commercial aerospace market and favorable product pricing, partially offset by lower volumes in the defense aerospace market, including lower F-35 program volumes, and Boeing 787 production declines as well as inflationary costs.

Segment Adjusted EBITDA for the Engineered Structures segment decreased \$22, or 18%, in 2021 compared with 2020, primarily due to lower volumes in the commercial aerospace market, driven by the impact of COVID-19 and Boeing 787 production declines, and lower volumes in the defense aerospace market, including lower F-35 program volumes, partially offset by cost reductions.

Segment Adjusted EBITDA Margin for the Engineered Structures segment decreased approximately 10 basis points in 2022 compared with 2021, primarily due to lower volumes in the defense aerospace market and Boeing 787 production declines as well as continued inflationary cost pressures, partially offset by higher volumes in the narrow body commercial aerospace market.

Segment Adjusted EBITDA Margin for the Engineered Structures segment increased approximately 70 basis points in 2021 compared with 2020, primarily due to cost reductions, partially offset by lower volumes in the commercial aerospace market, driven by the impact of COVID-19 and Boeing 787 production declines, and lower volumes in the defense aerospace market, including lower F-35 program volumes.

In 2023, as compared to 2022, demand in the commercial aerospace market is expected to increase. Additionally, an increase in material and other inflationary costs is expected to contribute to an increase in sales as the Company generally passes through these costs.

Forged Wheels

	2022	2021	2020
Third-party sales	\$ 1,058	\$ 921	\$ 679
Segment Adjusted EBITDA	278	294	192
Segment Adjusted EBITDA Margin	26.3 %	31.9 %	28.3 %

Forged Wheels produces forged aluminum wheels and related products for heavy-duty trucks, trailers, and buses globally. Forged Wheels' products are sold directly to OEMs and through distributors. Generally, the sales and costs and expenses of this segment are transacted in the local currency of the respective operations, which are mostly the U.S. dollar and euro.

Third-party sales for the Forged Wheels segment increased \$137, or 15%, in 2022 compared with 2021, primarily due to an increase in aluminum material and other inflationary cost pass through and higher commercial transportation volumes, partially offset by unfavorable foreign currency movements.

Third-party sales for the Forged Wheels segment increased \$242, or 36%, in 2021 compared with 2020, primarily due to higher commercial transportation volumes and an increase in aluminum material cost pass through.

Segment Adjusted EBITDA for the Forged Wheels segment decreased \$16, or 5%, in 2022 compared with 2021, primarily due to unfavorable foreign currency movements, partially offset by higher commercial transportation volumes.

Segment Adjusted EBITDA for the Forged Wheels segment increased \$102, or 53%, in 2021 compared with 2020, primarily due to higher commercial transportation volumes, fixed cost reductions, and maximizing production in low-cost countries.

Segment Adjusted EBITDA Margin for the Forged Wheels segment decreased approximately 560 basis points in 2022 compared with 2021, primarily due to aluminum material and European energy cost pass through as well as unfavorable foreign currency movements, partially offset by higher volumes.

Segment Adjusted EBITDA Margin for the Forged Wheels segment increased approximately 360 basis points in 2021 compared with 2020, primarily due to higher commercial transportation volumes, fixed cost reductions, and maximizing production in low-cost countries, partially offset by aluminum material cost pass through.

In July 2022, the Company's cast house in Barberton, Ohio, which produces aluminum ingot used in the production of wheels for the North American commercial transportation market, experienced a mechanical failure resulting in substantial heat and fire-related damage to equipment. The downtime temporarily reduced production levels and affected productivity at the plant. The plant has been repaired and resumed normal operations in the fourth quarter of 2022. The Company has insurance with a deductible of \$10.

In mid-February 2020, a fire occurred at the Company's forged wheels plant located in Barberton, Ohio. The downtime reduced production levels and affected productivity at the plant. During the fourth quarter of 2022, the Company settled the insurance claim related to the Barberton Plant Fire.

In 2023, as compared to 2022, demand in the commercial transportation markets served by Forged Wheels is expected to decrease in most regions due to lower OEM builds. A decrease in material costs partially offset by an increase in other inflationary costs is expected to contribute to a net decrease in sales as the Company generally passes through these costs. Sales in the Forged Wheels segment could also be negatively impacted by component supply chain constraints at our customers.

Reconciliation of Total Segment Adjusted EBITDA to Income from continuing operations before income taxes

	2022	2021	2020
Income from continuing operations before income taxes	\$ 606	\$ 324	\$ 171
Loss on debt redemption	2	146	64
Interest expense, net	229	259	317
Other expense, net ⁽¹⁾	82	19	74
Operating income	\$ 919	\$ 748	\$ 626
Segment provision for depreciation and amortization	258	261	262
Unallocated amounts:			
Restructuring and other charges	56	90	182
Corporate expense	119	101	82
Total Segment Adjusted EBITDA	\$ 1,352	\$ 1,200	\$ 1,152

⁽¹⁾ See the Contingencies section of [Note V](#) to the Consolidated Financial Statements in [Part II, Item 8](#) of this Form 10-K.

Total Segment Adjusted EBITDA is a non-GAAP financial measure. Management believes that this measure is meaningful to investors because it provides additional information with respect to the Company's operating performance and the Company's ability to meet its financial obligations. Differences between the total segment and consolidated totals are in Corporate.

See Restructuring and other charges, D&A, Loss on debt redemption, Interest expense, net, and Other expense, net discussions above under "Results of Operations" for reference.

Corporate expense increased \$18, or 18%, in 2022 compared with 2021, primarily due to higher net costs related to the France Plant Fire, the Barberton Plant Fire, and the Barberton Cast House Incident of \$39, higher employment, travel, and lease costs in 2022, and higher nonrecurring legal and other advisory reimbursements received in 2021 compared to 2022 of \$1, partially offset by 2021 costs of \$32 associated with closures, shutdowns, and other items which did not recur in 2022.

Corporate expense increased \$19, or 23%, in 2021 compared with 2020, primarily due to costs associated with closures, shutdowns, and other items of \$32 and nonrecurring legal and other advisory reimbursements received in 2020 that did not recur in 2021 aggregating to \$8, partially offset by lower costs driven by overhead cost reductions, as well as costs incurred in 2020 associated with the Arconic Inc. Separation Transaction of \$7 that did not recur in 2021 and lower net costs related to the Barberton Plant Fire and the France Plant Fire of \$6.

Environmental Matters

See the Environmental Matters section of [Note V](#) to the Consolidated Financial Statements in [Part II, Item 8](#) of this Form 10-K.

Liquidity and Capital Resources

Howmet maintains a disciplined approach to cash management and the strengthening of its balance sheet. Management continued to focus on actions to improve Howmet's cost structure and liquidity, providing the Company with the ability to operate effectively. Such actions included procurement efficiencies and overhead rationalization to reduce costs, working capital initiatives, and maintaining a sustainable level of capital expenditures.

Cash provided from operations and financing activities is expected to be adequate to cover Howmet's operational and business needs over the next 12 months. For an analysis of long-term liquidity, see "Contractual Obligations" and "Off-Balance Sheet Arrangements" below.

At December 31, 2022, cash and cash equivalents of Howmet were \$791, of which \$283 was held by Howmet's non-U.S. subsidiaries. If the cash held by non-U.S. subsidiaries were to be repatriated to the U.S., the Company does not expect there to be material income tax consequences.

The cash flows related to Arconic Corporation have not been segregated and are included in the Statement of Consolidated Cash Flows for the period prior to the Arconic Inc. Separation Transaction.

Operating Activities

Cash provided from operations in 2022 was \$733 compared with \$449 in 2021 and \$9 in 2020.

The increase in cash provided from operations of \$284, or 63%, between 2022 and 2021 was due to lower working capital of \$165, higher operating results of \$89, and lower pension contributions of \$53, partially offset by higher payments on noncurrent liabilities of \$37. The components of the change in working capital included favorable changes in receivables of \$176, including collections of employee retention credit receivables, accrued expenses of \$169, accounts payable of \$102, and taxes, including income taxes, of \$29, partially offset by inventories of \$294 and prepaid expenses and other current assets of \$17.

The increase in cash provided from operations of \$440 between 2021 and 2020 was primarily due to lower working capital of \$357, lower pension contributions of \$161, and lower noncurrent liabilities of \$12, partially offset by lower operating results of \$38 and the write-off of an indemnification receivable of \$53 related to a Spanish tax reserve that occurred in 2020 and did not occur in 2021. The components of the change in working capital included favorable changes in accounts payable of \$525, accrued expenses of \$71, and prepaid expenses and other current assets of \$13, partially offset by taxes, including income taxes of \$139, receivables of \$99, including employee retention credit receivables, and inventories of \$14.

Financing Activities

Cash used for financing activities was \$526 in 2022 compared with \$1,444 in 2021 and \$369 in 2020.

The use of cash in 2022 was primarily related to the repurchase of common stock of \$400, the repayments on the aggregate outstanding principal amount of long-term debt of approximately \$69, and dividends paid to shareholders of \$44. These items were partially offset by proceeds from the exercise of employee stock options of \$16. On an annual basis, the partial repayment of the 5.125% Notes due October 2024 (the "5.125% Notes") in 2022 will decrease Interest expense, net by approximately \$4.

The use of cash in 2021 was primarily related to the repayments on the aggregate outstanding principal amount of long-term debt of approximately \$1,537, repurchase of common stock of \$430, premiums paid on the redemption of debt of \$138, dividends paid to shareholders of \$19, and debt issuance costs of \$11. These items were partially offset by long-term debt issuance of \$700 and proceeds from the exercise of employee stock options of \$22.

The use of cash in 2020 was primarily related to the repayments on borrowings under certain revolving credit facilities (see below) and repayments on debt, primarily the aggregate outstanding principal amount of the 6.150% Notes of approximately \$2,040, cash distributed to Arconic Corporation at the Arconic Inc. Separation Transaction of \$500, repurchase of common stock of \$73, debt issuance costs of \$61, premiums paid on the redemption of debt of \$59, and dividends paid to shareholders of \$11. These items were partially offset by long-term debt issuance of \$2,400 (of which \$1,200 went with Arconic Corporation at the Arconic Inc. Separation Transaction) and proceeds from the exercise of employee stock options of \$33.

The Company has an effective shelf registration statement on Form S-3, filed with the SEC, which allows for offerings of debt securities from time to time. The Company may opportunistically issue new debt securities under such registration statement or otherwise in accordance with securities laws, including but not limited to in order to refinance existing indebtedness.

For further details regarding the Company's debt and stock repurchases, see [Note R](#) and [Note J](#), respectively, to the Consolidated Financial Statements in [Part II, Item 8](#) (Financial Statements and Supplementary Data) of this Form 10-K.

The Company maintains a credit facility pursuant to its Five-Year Revolving Credit Agreement (the “Credit Agreement”) with a syndicate of lenders and issuers named therein. Following the end of the covenant relief period on December 31, 2022, the restriction on common stock dividends and share repurchases under the Credit Agreement, along with certain covenants, no longer applies. See [Note R](#) to the Consolidated Financial Statements in [Part II, Item 8](#) (Financial Statements and Supplementary Data) of this Form 10-K.

The Company may in the future repurchase additional portions of its debt or equity securities from time to time, in either the open market or through privately negotiated transactions, in accordance with applicable SEC and other legal requirements. The timing, prices, and sizes of purchases depend upon prevailing trading prices, general economic and market conditions, and other factors, including applicable securities laws. Such purchases may be completed by means of trading plans established from time to time in accordance with Rule 10b5-1 under the Securities Exchange Act of 1934, as amended, block trades, private transactions, open market repurchases, tender offers, and/or accelerated share repurchase agreements or other derivative transactions.

The Company’s costs of borrowing and ability to access the capital markets are affected not only by market conditions but also by the short-term and long-term debt ratings assigned to the Company by the major credit rating agencies.

The Company’s credit ratings from the three major credit rating agencies are as follows:

	Issuer Rating	Outlook	Date of Last Update
S&P Ratings Service	BB+	Stable	November 29, 2022
Moody’s Investors Service (“Moody’s”)	Ba1	Stable	April 27, 2022
Fitch Investors Service (“Fitch”)	BBB-	Stable	March 22, 2022

On November 29, 2022, S&P affirmed the following ratings for Howmet: long-term debt at BB+ and the current outlook as stable.

On April 27, 2022, Moody’s upgraded Howmet’s long-term debt rating from Ba2 to Ba1 citing the Company’s ability to improve its financial leverage, strong cash generation, and well-balanced financial policies and affirmed the current outlook as stable.

On March 22, 2022, Fitch affirmed the following ratings for Howmet: long-term debt at BBB- and the current outlook as stable.

Investing Activities

Cash used for investing activities was \$135 in 2022 compared with cash provided from investing activities of \$107 in 2021 and \$271 in 2020.

The use of cash in 2022 was capital expenditures of \$193 primarily related to various automation projects, information technology upgrades, and sustaining capital projects across all segments, partially offset by proceeds from the sale of assets of \$58, which was primarily due to the sale of the corporate center and a manufacturing facility in Engine Products. In the second quarter of 2022, the Company sold the corporate headquarters in Pittsburgh, PA. The proceeds from the sale of the corporate headquarters were \$44, excluding \$3 of transaction costs, and a carrying value of \$41. The Company entered into a 12-year lease with the purchaser for a portion of the property. Additionally, in the fourth quarter of 2022, the Company sold the property of an Engine Products segment’s manufacturing facility. The proceeds from the sale of this property were \$15 and a carrying value of \$7.

The source of cash in 2021 was primarily cash receipts from sold receivables of \$267 and proceeds from the sale of a small manufacturing plant in France of \$8 and the sale of assets at a small U.S. manufacturing facility in Fastening Systems of \$23, partially offset by capital expenditures of \$199 primarily related to capacity expansion investments in Hungary and Mexico in Forged Wheels and various automation projects. As a result of accounts receivables securitization program changes in 2021, there was no additional activity related to cash receipts from sold receivables within investing activities in the Statement of Consolidated Cash Flows in future periods. The net cash funding from the sale of accounts receivable was neither a use of cash nor a source of cash during 2022.

The source of cash in 2020 was primarily cash receipts from sold receivables of \$422 and proceeds from the sale of a rolling mill business in Itapissuma, Brazil of \$50 and a hard alloy extrusions plant in South Korea of \$62, both of which were related to Arconic Corporation (see [Note C](#) to the Consolidated Financial Statements in [Part II, Item 8](#) (Financial Statements and Supplementary Data) of this Form 10-K), partially offset by capital expenditures of \$267.

Contractual Obligations and Off-Balance Sheet Arrangements

Contractual Obligations

Howmet is required to make future payments under various contracts, including long-term purchase obligations, financing arrangements, and lease agreements. Howmet also has commitments to fund its pension plans, provide payments for other postretirement benefit plans, and fund capital projects.

In order to better understand Howmet's outstanding contractual obligations, the table below represents a summary of these commitments as of December 31, 2022 (these contractual obligations are grouped in the same manner as they are classified in the Statement of Consolidated Cash Flows in order to provide a better understanding of the nature of the obligations and to provide a basis for comparison to historical information):

	Total	2023	2024-2025	2026-2027	Thereafter
Operating activities:					
Raw material purchase obligations	\$ 413	\$ 257	\$ 154	\$ 2	\$ —
Other purchase obligations	8	8	—	—	—
Operating leases	134	39	47	24	24
Interest related to total debt	1,413	227	376	238	572
Estimated minimum required pension funding	325	45	132	148	—
Other postretirement benefit payments	102	11	22	21	48
Layoff and other restructuring payments	8	2	6	—	—
Uncertain tax positions	1	—	—	—	1
Financing activities:					
Total debt	4,181	—	1,681	625	1,875
Investing activities:					
Capital projects	156	125	31	—	—
Totals	\$ 6,741	\$ 714	\$ 2,449	\$ 1,058	\$ 2,520

Obligations for Operating Activities

Raw material purchase obligations consist mostly of aluminum, titanium, cobalt, nickel, and various other metals with expiration dates ranging from less than one year to five years. Many of these purchase obligations contain variable pricing components, and, as a result, actual cash payments may differ from the estimates provided in the preceding table. The Company generally passes through metal costs in customer contracts with limited exceptions. As a result, the Company expects higher metal costs to contribute to increased sales in 2023. In connection with the Arconic Inc. Separation Transaction, the Company entered into several agreements with Arconic Corporation that govern the relationship between the Company and Arconic Corporation following the separation, including raw material supply agreements.

Operating leases represent multi-year obligations for certain land and buildings, plant equipment, vehicles, and computer equipment.

Interest related to total debt is based on interest rates in effect as of December 31, 2022 and is calculated on debt with maturities that extend to 2042.

Estimated minimum required pension funding and other postretirement benefit payments are based on actuarial estimates using current assumptions for discount rates, long-term rate of return on plan assets, and health care cost trend rates, among others. It is Howmet's policy to fund amounts for pension plans sufficient to meet the minimum requirements set forth in the benefits laws and tax laws of the applicable country. Periodically, Howmet contributes additional amounts as deemed appropriate. Howmet has determined that it is not practicable to present pension funding and other postretirement benefit payments beyond 2027 and 2032, respectively.

Layoff and other restructuring payments to be paid within one year primarily relate to severance costs.

Uncertain tax positions taken or expected to be taken on an income tax return may result in additional payments to tax authorities. The amount in the preceding table includes interest and penalties accrued related to such positions as of December 31, 2022. The total amount of uncertain tax positions is included in the "Thereafter" column as the Company is not able to reasonably estimate the timing of potential future payments. If a tax authority agrees with the tax position taken or expected to be taken or the applicable statute of limitations expires, then additional payments will not be necessary. Tax assessments received may also result in payments to be made in order to preserve our right to appeal any tax positions challenged by tax authorities for which we have concluded that we are more likely than not to prevail.

Contingencies such as legal proceedings and environmental matters may also result in additional cash payments. The timing of these payments, if necessary, depends on several factors, including the timing of litigation and settlements of liability claims. Accordingly, amounts have not been included in the preceding table. See [Note V](#) to the Consolidated Financial Statements in [Part II, Item 8](#) (Financial Statements and Supplementary Data) of this Form 10-K for further discussion.

Obligations for Financing Activities

Howmet has historically paid quarterly dividends on its preferred and common stock. The Company paid an aggregate of \$44 in common stock and preferred stock dividends to shareholders during 2022. Because all dividends are subject to approval by Howmet's Board of Directors, amounts are not included in the preceding table unless such authorization has occurred. As of December 31, 2022, there were 412,155,057 shares of outstanding common stock and 546,024 shares of outstanding Class A preferred stock. In 2022, the preferred stock dividend was \$3.75 per share. A dividend of \$0.10 per share on the Company's common stock was paid in 2022 (\$0.02 per share in each of the first, second, and third quarters of 2022 and \$0.04 in the fourth quarter of 2022). Fully diluted shares outstanding as of December 31, 2022 were 418,011,145.

The Company's Board of Directors authorized a share repurchase program of up to \$1,500 of the Company's outstanding common stock. After giving effect to the share repurchases made through the fourth quarter of 2022, approximately \$947 Board authorization remained available as of January 1, 2023. There is no stated expiration for the Share Repurchase Programs. Accordingly, amounts have not been included in the preceding table. See "Liquidity and Capital Resources" for additional information.

Obligations for Investing Activities

Capital projects in the preceding table only include amounts approved by management as of December 31, 2022. Funding levels may vary in future years based on anticipated construction schedules of the projects. It is expected that significant expansion projects will be funded through various sources, including cash provided from operations. Total capital expenditures are anticipated to be approximately 4% of sales in 2023.

Off-Balance Sheet Arrangements

At December 31, 2022, the Company had outstanding bank guarantees related to tax matters, outstanding debt, workers' compensation, environmental obligations, energy contracts, and customs duties, among others. The total amount committed under these guarantees, which expire at various dates between 2023 and 2040, was \$13 at December 31, 2022.

Pursuant to the Separation and Distribution Agreement, dated as of October 31, 2016, between Howmet and Alcoa Corporation, Howmet was required to provide certain guarantees for Alcoa Corporation, which had a combined fair value of \$6 at both December 31, 2022 and 2021, and were included in Other noncurrent liabilities and deferred credits in the Consolidated Balance Sheet. The remaining guarantee, for which the Company and Arconic Corporation are secondarily liable in the event of a payment default by Alcoa Corporation, relates to a long-term energy supply agreement that expires in 2047 at an Alcoa Corporation facility. The Company currently views the risk of an Alcoa Corporation payment default on its obligations under the contract to be remote. The Company and Arconic Corporation are required to provide a guarantee up to an estimated present value amount of approximately \$1,040 and \$1,406 at December 31, 2022 and 2021, respectively, in the event of an Alcoa Corporation payment default. In December 2020, December 2021, and December 2022, a surety bond with a limit of \$80 relating to this guarantee was obtained by Alcoa Corporation to protect Howmet's obligation. This surety bond is expected to be renewed on an annual basis by Alcoa Corporation.

Howmet has outstanding letters of credit primarily related to workers' compensation, environmental obligations, and insurance obligations. The total amount committed under these letters of credit, which automatically renew or expire at various dates, mostly in 2023, was \$120 at December 31, 2022.

Pursuant to the Separation and Distribution Agreements between the Company and Arconic Corporation and between the Company and Alcoa Corporation, the Company is required to retain letters of credit of \$53 (which are included in the \$120 in the above paragraph) that had previously been provided related to the Company, Arconic Corporation, and Alcoa Corporation workers' compensation claims that occurred prior to the respective separation transactions of April 1, 2020 and November 1, 2016. Arconic Corporation and Alcoa Corporation workers' compensation and letter of credit fees paid by the Company are proportionally billed to, and are reimbursed by, Arconic Corporation and Alcoa Corporation, respectively. Also, the Company was required to provide letters of credit for certain Arconic Corporation environmental obligations and, as a result, the Company has \$17 of outstanding letters of credit relating to such liabilities (which are included in the \$120 in the above paragraph). Arconic Corporation has issued surety bonds to cover these environmental obligations. Arconic Corporation is being billed for these letter of credit fees paid by the Company and will reimburse the Company for any payments made under these letters of credit.

Howmet has outstanding surety bonds primarily related to tax matters, contract performance, workers' compensation, environmental-related matters, energy contracts, and customs duties. The total amount committed under these annual surety bonds, which expire and automatically renew at various dates, primarily in 2023 and 2024, was \$43 at December 31, 2022.

Pursuant to the Separation and Distribution Agreements between the Company and Arconic Corporation and between the Company and Alcoa Corporation, the Company is required to provide surety bonds of \$22 (which are included in the \$43 in the above paragraph) that had previously been provided related to the Company, Arconic Corporation and Alcoa Corporation workers' compensation claims paid that occurred prior to the respective separation transactions of April 1, 2020 and November 1, 2016. Arconic Corporation and Alcoa Corporation workers' compensation claims and surety bond fees paid by the Company are proportionally billed to, and are reimbursed by, Arconic Corporation and Alcoa Corporation.

Critical Accounting Policies and Estimates

The preparation of the Consolidated Financial Statements in accordance with accounting principles generally accepted in the United States of America requires management to make certain judgments, estimates, and assumptions regarding uncertainties that affect the amounts reported in the Consolidated Financial Statements and disclosed in the accompanying Notes. These estimates are based on historical experience and, in some cases, assumptions based on current and future market experience, including considerations relating to the impact of COVID-19 and changes in the aerospace industry as a result of the pandemic. The impact of these changes is rapidly changing and of unknown duration and macroeconomic impact and, as a result, these conditions remain highly uncertain. Areas that require significant judgments, estimates, and assumptions include the testing of goodwill, properties, plants, and equipment, and other intangible assets for impairment; estimating fair value of businesses acquired or divested; pension plans and other postretirement benefits obligations; stock-based compensation; and income taxes.

Management uses historical experience and all available information to make these judgments, estimates, and assumptions, and actual results may differ from those used to prepare the Company's Consolidated Financial Statements at any given time. Despite these inherent limitations, management believes that Management's Discussion and Analysis of Financial Condition and Results of Operations and the Consolidated Financial Statements and accompanying Notes provide a meaningful and fair perspective of the Company.

A summary of the Company's significant accounting policies is included in [Note A](#) to the Consolidated Financial Statements of this Form 10-K. Management believes that the application of these policies on a consistent basis enables the Company to provide the users of the Consolidated Financial Statements with useful and reliable information about the Company's operating results and financial condition.

Goodwill. Howmet reviews goodwill for impairment annually (in the fourth quarter) or more frequently if indicators of impairment exist or if a decision is made to sell or realign a business. The Company has the option to assess impairment through qualitative assessment, which includes factors such as general economic conditions, negative developments in equity and credit markets, adverse changes in the markets in which an entity operates, increases in input costs that have a negative effect on earnings and cash flows, or a trend of negative or declining cash flows over multiple periods, among others. Howmet can also assess goodwill impairment through a quantitative analysis, using a discounted cash flow ("DCF") model to estimate a reporting unit's fair value. Assumptions and estimates utilized in the DCF model include weighted average cost of capital ("WACC") rates, revenue, future profitability, working capital, cash flows and a number of other items. For more information on these matters, see [Note A](#) to the Consolidated Financial Statements of this Form 10-K.

Properties, Plants, and Equipment and Other Intangible Assets. Properties, plants, and equipment and Other intangible assets are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount of such assets (asset group) may not be recoverable. Recoverability of assets is determined by comparing the estimated undiscounted net cash flows of the operations related to the assets (asset group) to their carrying amount. An impairment loss would be recognized when the carrying amount of the assets (asset group) exceeds the estimated undiscounted net cash flows. The amount of the impairment loss to be recorded is measured as the excess of the carrying value of the assets (asset group) over their fair value, with fair value determined using the best information available, which generally is a DCF model. The determination of what constitutes an asset group, the associated estimated undiscounted net cash flows, and the estimated useful lives of the assets also require significant judgments.

Discontinued Operations and Assets Held for Sale. The fair values of all businesses to be divested are estimated using accepted valuation techniques such as a DCF model, valuations performed by third parties, earnings multiples, or indicative bids, when available. A number of significant estimates and assumptions are involved in the application of these techniques, including the forecasting of markets and market share, sales volumes and prices, costs and expenses, and multiple other factors. Management considers historical experience and all available information at the time the estimates are made; however, the fair value that is ultimately realized upon the divestiture of a business may differ from the estimated fair value reflected in the Consolidated Financial Statements.

Pension and Other Postretirement Benefits. Liabilities and expenses for pension and other postretirement benefits are determined using actuarial methodologies and incorporate significant assumptions, including the interest rate used to discount the future estimated liability, the expected long-term rate of return on plan assets, and several assumptions relating to the employee workforce (health care cost trend rates, retirement age, and mortality). The pension and other postretirement benefits obligation was \$1,719 and \$2,461, with a funded status of \$(749) and \$(930) at December 31, 2022 and 2021, respectively. The total benefit obligation reduction of \$742 was primarily driven by changes in discount rate. The improvement in the funded status of \$181 was primarily driven by changes in discount rates partially offset by actual asset losses in comparison to expected asset returns. Excluding settlements and curtailments, net periodic benefit cost of pension and other postretirement benefits is expected to be approximately \$40 in 2023 compared to \$22 and \$16 in 2022 and 2021, respectively. These costs increased by \$6, or 38%, in 2022 compared to 2021 as a result of changes in discount rates and annuity purchases.

Employer contributions for pension benefits were \$43 and \$96 for the years ended December 31, 2022 and 2021, respectively. No additional employer contributions for pension benefits were required for the pension settlements in 2022. Benefits paid for other postretirement benefits were \$13 and \$17 for the years ended December 31, 2022 and 2021, respectively. Total pension contributions and other postretirement benefits paid decreased by \$57, or 50%, in 2022 compared to 2021 primarily driven by additional 2021 contributions related to annuity buyouts and funding balances of the plans. Cash pension contributions in 2023 are expected to be approximately \$45. Howmet's funded status under the Employee Retirement Income Security Act was approximately 87% as of January 1, 2022.

The interest rate used to discount future estimated liabilities for the U.S. is determined using a Company-specific yield curve model (above-median) developed with the assistance of an external actuary, while both the U.K. and Canada utilize models developed by the respective actuary. The cash flows of the plans' projected benefit obligations are discounted using a single equivalent rate derived from yields on high quality corporate bonds, which represent a broad diversification of issuers in various sectors, including finance and banking, industrials, transportation, and utilities, among others. The yield curve models parallel the plans' projected cash flows, which have a global average duration of 10 years. The underlying cash flows of the bonds included in the models exceed the cash flows needed to satisfy the Company's plans' obligations multiple times. In 2022, 2021, and 2020, the discount rate used to determine benefit obligations for pension and other postretirement benefit plans was 5.40%, 2.70%, and 2.40%, respectively. The impact on the liabilities of a change in the discount rate of 1/4 of 1% would be approximately \$36 and either a charge or credit of less than \$1 to earnings in the following year.

The expected long-term rate of return on plan assets is generally applied to a five-year market-related value of plan assets. The process used by management to develop this assumption is one that relies on a combination of historical asset return information and forward-looking returns by asset class. As it relates to historical asset return information, management focuses on various historical moving averages when developing this assumption. While consideration is given to recent performance and historical returns, the assumption represents a long-term, prospective return. Management also incorporates expected future returns on current and planned asset allocations using information from various external investment managers and consultants, as well as management's own judgment.

For 2022, 2021, and 2020, management used 6.70%, 6.20%, and 6.00%, respectively, as its weighted-average global expected long-term rate of return on plan assets, which was based on the prevailing and planned strategic asset allocations, as well as estimates of future returns by asset class for each plan. These rates were within the respective range of the 20-year moving average of actual performance and the expected future return developed by asset class for each plan. The increase in expected long-term rate of return of plan assets compared to prior years is due to current asset allocations and estimates of future returns by country. For 2023, management anticipates that the expected long-term rate of return for global plan assets will remain at approximately 7%. A change in the assumption for the expected long-term rate of return on plan assets of 1/4 of 1% would impact earnings by approximately \$3 for 2023.

In 2022, net income of \$146 (after-tax) was recorded in other comprehensive loss, primarily due to the increase in the discount rate and amortization of actuarial losses, partially offset by plan asset returns that were less than expected. In 2021, net income of \$181 (after-tax) was recorded in other comprehensive loss, primarily due to the increase in the discount rate, plan asset performance that was greater than expected, and amortization of actuarial losses. In 2020, a net loss of \$46 (after-tax) was recorded in other comprehensive loss, primarily due to the decrease in the discount rate, partially offset by plan asset performance that was greater than expected, and amortization of actuarial losses.

Stock-Based Compensation. Howmet recognizes compensation expense for employee equity grants using the non-substantive vesting period approach, in which the expense is recognized ratably over the requisite service period based on the grant date fair value. Forfeitures are accounted for as they occur. The fair value of new stock options is estimated on the date of grant using a lattice-pricing model. The fair value of performance awards containing a market condition is valued using a Monte Carlo valuation model. Determining the fair value at the grant date requires judgment, including estimates for the average risk-free interest rate, dividend yield, volatility, and exercise behavior. These assumptions may differ significantly between grant dates because of changes in the actual results of these inputs that occur over time.

Compensation expense recorded in 2022, 2021, and 2020 was \$54 (\$49 after-tax), \$40 (\$36 after-tax), and \$46 (\$42 after-tax), respectively.

Income Taxes. The provision (benefit) for income taxes is determined using the asset and liability approach of accounting for income taxes. Under this approach, the provision (benefit) for income taxes represents income taxes paid or payable (or received or receivable) based on current year pre-tax income plus the change in deferred taxes during the year. Deferred taxes represent the future tax consequences expected to occur when the reported amounts of assets and liabilities are recovered or paid, and result from differences between the financial and tax bases of Howmet's assets and liabilities and are adjusted for changes in tax rates and tax laws when enacted.

Valuation allowances are recorded to reduce deferred tax assets when it is more likely than not that a tax benefit will not be realized. In evaluating the need for a valuation allowance, management considers all potential sources of taxable income, including income available in carry-back periods, future reversals of taxable temporary differences, projections of taxable income, and income from tax planning strategies, as well as all available positive and negative evidence. Positive evidence includes factors such as a history of profitable operations, projections of future profitability within the carryforward period, including from tax planning strategies, and Howmet's experience with similar operations. Existing favorable contracts and the ability to sell products into established markets are additional positive evidence. Negative evidence includes items such as cumulative losses, projections of future losses, or carryforward periods that are not long enough to allow for the utilization of a deferred tax asset based on existing projections of income. Deferred tax assets for which no valuation allowance is recorded may not be realized upon changes in facts and circumstances, resulting in a future charge to establish a valuation allowance. Existing valuation allowances are re-examined under the same standards of positive and negative evidence. If it is determined that it is more likely than not that a deferred tax asset will be realized, the appropriate amount of the valuation allowance, if any, is released. Deferred tax assets and liabilities are also re-measured to reflect changes in underlying tax rates due to law changes and the granting and lapse of tax holidays.

It is Howmet's policy to apply a tax law ordering approach when considering the need for a valuation allowance on net operating losses expected to offset GILTI inclusions. Under this approach, reductions in cash tax savings are not considered as part of the valuation allowance assessment. Instead, future GILTI inclusions are considered a source of taxable income that support the realizability of deferred tax assets.

It is Howmet's policy to treat taxes due from future inclusions in U.S. taxable income related to GILTI as a current period expense when incurred.

Tax benefits related to uncertain tax positions taken or expected to be taken on a tax return are recorded when such benefits meet a more likely than not threshold. Otherwise, these tax benefits are recorded when a tax position has been effectively settled, which means that the statute of limitations has expired or the appropriate taxing authority has completed their examination even though the statute of limitations remains open. Interest and penalties related to uncertain tax positions are recognized as part of the provision for income taxes and are accrued beginning in the period that such interest and penalties would be applicable under relevant tax law until such time that the related tax benefits are recognized.

Litigation and Contingent Liabilities. From time to time, we are involved in various lawsuits, claims, investigations, and proceedings. These matters may include speculative claims for substantial or indeterminate amounts of damages. Management determines the likelihood of an unfavorable outcome based on many factors, such as the nature of the matter, available defenses and case strategy, progress of the matter, views and opinions of legal counsel and other advisors, applicability and success of appeals processes, and the outcome of similar historical matters, among others. If an unfavorable outcome is deemed probable and the amount of the potential loss can be estimated, the most reasonable loss estimate is recorded. If an unfavorable outcome of a matter is deemed probable but the loss is not reasonably estimable, or if an unfavorable outcome is deemed reasonably possible, then the matter is disclosed but no liability is recorded. Legal matters are reviewed on a continuous basis to determine if there has been a change in management's judgment regarding the likelihood of an unfavorable outcome or the estimate of a potential loss. For more information on these matters, see [Note V](#) to the Consolidated Financial Statements in [Part II, Item 8](#) (Financial Statements and Supplementary Data) of this Form 10-K.

Recently Adopted Accounting Guidance.

See the Recently Adopted Accounting Guidance section of [Note B](#) to the Consolidated Financial Statements in [Part II, Item 8](#) (Financial Statements and Supplementary Data) of this Form 10-K.

Recently Issued Accounting Guidance.

See the Recently Issued Accounting Guidance section of [Note B](#) to the Consolidated Financial Statements in [Part II, Item 8](#) (Financial Statements and Supplementary Data) of this Form 10-K.

Item 7A. Quantitative and Qualitative Disclosures About Market Risk.

Not material.

Item 8. Financial Statements and Supplementary Data.

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Management's Reports to Howmet Shareholders

Management's Report on Financial Statements and Practices

The accompanying Consolidated Financial Statements of Howmet Aerospace Inc. and its subsidiaries (the "Company") were prepared by management, which is responsible for their integrity and objectivity. The statements were prepared in accordance with accounting principles generally accepted in the United States of America and include amounts that are based on management's best judgments and estimates. The other financial information included in the annual report is consistent with that in the financial statements.

Management also recognizes its responsibility for conducting the Company's affairs according to the highest standards of personal and corporate conduct. This responsibility is characterized and reflected in key policy statements issued from time to time regarding, among other things, conduct of its business activities within the laws of the host countries in which the Company operates and potentially conflicting outside business interests of its employees. The Company maintains a systematic program to assess compliance with these policies.

Management's Report on Internal Control over Financial Reporting

Management is responsible for establishing and maintaining adequate internal control over financial reporting for the Company. In order to evaluate the effectiveness of internal control over financial reporting, as required by Section 404 of the Sarbanes-Oxley Act, management has conducted an assessment, including testing, using the criteria in *Internal Control—Integrated Framework* (2013), issued by the Committee of Sponsoring Organizations of the Treadway Commission ("COSO"). The Company's system of internal control over financial reporting is designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. The Company's internal control over financial reporting includes those policies and procedures that (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the Company; (ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with accounting principles generally accepted in the United States of America, and that receipts and expenditures of the Company are being made only in accordance with authorizations of management and directors of the Company; and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the Company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Based on the assessment, management has concluded that the Company maintained effective internal control over financial reporting as of December 31, 2022, based on criteria in *Internal Control—Integrated Framework* (2013) issued by the COSO.

The effectiveness of the Company's internal control over financial reporting as of December 31, 2022 has been audited by PricewaterhouseCoopers LLP, an independent registered public accounting firm, as stated in their report, which is included herein.

/s/ John C. Plant

John C. Plant
Executive Chairman and Chief Executive Officer

/s/ Ken Giacobbe

Ken Giacobbe
Executive Vice President and Chief Financial Officer

Report of Independent Registered Public Accounting Firm

To the Board of Directors and Shareholders of Howmet Aerospace Inc.

Opinions on the Financial Statements and Internal Control over Financial Reporting

We have audited the accompanying consolidated balance sheets of Howmet Aerospace Inc. and its subsidiaries (the “Company”) as of December 31, 2022 and 2021, and the related consolidated statements of operations, of changes in equity, of comprehensive income and of cash flows for each of the three years in the period ended December 31, 2022, including the related notes (collectively referred to as the “consolidated financial statements”). We also have audited the Company’s internal control over financial reporting as of December 31, 2022, based on criteria established in *Internal Control - Integrated Framework* (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO).

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of the Company as of December 31, 2022 and 2021, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2022 in conformity with accounting principles generally accepted in the United States of America. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2022, based on criteria established in *Internal Control - Integrated Framework* (2013) issued by the COSO.

Basis for Opinions

The Company’s management is responsible for these consolidated financial statements, for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Management’s Report on Internal Control over Financial Reporting. Our responsibility is to express opinions on the Company’s consolidated financial statements and on the Company’s internal control over financial reporting based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud, and whether effective internal control over financial reporting was maintained in all material respects.

Our audits of the consolidated financial statements included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

Definition and Limitations of Internal Control over Financial Reporting

A company’s internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company’s internal control over financial reporting includes those policies and procedures that (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company’s assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Critical Audit Matters

The critical audit matter communicated below is a matter arising from the current period audit of the consolidated financial statements that was communicated or required to be communicated to the audit committee and that (i) relates to accounts or disclosures that are material to the consolidated financial statements and (ii) involved our especially challenging, subjective, or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the consolidated financial statements, taken as a whole, and we are not, by communicating the critical audit matter below, providing a separate opinion on the critical audit matter or on the accounts or disclosures to which it relates.

Goodwill Impairment Assessment – Engineered Structures Reporting Unit

As described in Notes A and P to the consolidated financial statements, the Company’s consolidated goodwill balance was \$4,013 million as of December 31, 2022, and the amount of the goodwill associated with the Engineered Structures reporting unit was \$304 million. Goodwill is reviewed for impairment annually (in the fourth quarter) or more frequently if indicators of impairment exist. Under the quantitative impairment test, the evaluation of impairment involves comparing the current fair value of each reporting unit to its carrying value, including goodwill. Fair value is estimated by management using a discounted cash flow model. The determination of fair value using this technique requires management to use significant estimates and assumptions related to forecasting operating cash flows, including sales growth, production costs, capital spending and discount rate.

The principal considerations for our determination that performing procedures relating to the goodwill impairment assessment of the Engineered Structures reporting unit is a critical audit matter are the significant judgment by management when determining the fair value of the reporting unit. This in turn led to a high degree of auditor judgment, subjectivity, and effort in performing procedures and evaluating management’s significant assumptions related to sales growth, production costs, and discount rate. In addition, the audit effort involved the use of professionals with specialized skill and knowledge.

Addressing the matter involved performing procedures and evaluating audit evidence in connection with forming our overall opinion on the consolidated financial statements. These procedures included testing the effectiveness of controls relating to management’s goodwill impairment assessment, including controls over the valuation of the Company’s Engineered Structures reporting unit. These procedures also included, among others (i) testing management’s process for determining the fair value of the reporting unit; (ii) evaluating the appropriateness of the discounted cash flow model; (iii) testing the completeness and accuracy of underlying data used in the model; and (iv) evaluating the reasonableness of the significant assumptions used by management related to sales growth, production costs, and discount rate. Evaluating management’s significant assumptions related to sales growth and production costs involved evaluating whether the significant assumptions used by management were reasonable by considering: (i) the current and past performance of the reporting unit; (ii) the consistency with relevant industry data; and (iii) considering whether the assumptions were consistent with evidence obtained in other areas of the audit. Professionals with specialized skill and knowledge were used to assist in the evaluation of the discounted cash flow model and the evaluation of the reasonableness of the discount rate significant assumption.

/s/ PricewaterhouseCoopers LLP
Pittsburgh, Pennsylvania
February 14, 2023

We have served as the Company’s auditor since 1950.

Howmet Aerospace Inc. and subsidiaries
Statement of Consolidated Operations
(in millions, except per-share amounts)

For the year ended December 31,	2022	2021	2020
Sales (D)	\$ 5,663	\$ 4,972	\$ 5,259
Cost of goods sold (exclusive of expenses below)	4,103	3,596	3,878
Selling, general administrative, and other expenses	288	251	277
Research and development expenses	32	17	17
Provision for depreciation and amortization	265	270	279
Restructuring and other charges (E)	56	90	182
Operating income	<u>919</u>	<u>748</u>	<u>626</u>
Loss on debt redemption (R)	2	146	64
Interest expense, net (F)	229	259	317
Other expense, net (G)	82	19	74
Income from continuing operations before income taxes	<u>606</u>	<u>324</u>	<u>171</u>
Provision (benefit) for income taxes (I)	137	66	(40)
Income from continuing operations after income taxes	<u>\$ 469</u>	<u>\$ 258</u>	<u>\$ 211</u>
Income from discontinued operations after income taxes (C)	—	—	50
Net income	<u><u>\$ 469</u></u>	<u><u>\$ 258</u></u>	<u><u>\$ 261</u></u>

Amounts Attributable to Howmet Aerospace Inc. Common Shareholders (K):

Net income	\$ 467	\$ 256	\$ 259
Earnings per share - basic			
Continuing operations	\$ 1.12	\$ 0.60	\$ 0.48
Discontinued operations	\$ —	\$ —	\$ 0.11
Earnings per share - diluted			
Continuing operations	\$ 1.11	\$ 0.59	\$ 0.48
Discontinued operations	\$ —	\$ —	\$ 0.11
Average Shares Outstanding (J):			
Average shares outstanding - basic	416	430	435
Average shares outstanding - diluted	421	435	439

The accompanying notes are an integral part of the consolidated financial statements.

Howmet Aerospace Inc. and subsidiaries
Statement of Consolidated Comprehensive Income
(in millions)

For the year ended December 31,	2022	2021	2020
Net income	\$ 469	\$ 258	\$ 261
Other comprehensive income (loss), net of tax (L):			
Change in unrecognized net actuarial loss and prior service cost (benefit) related to pension and other postretirement benefits	146	181	(46)
Foreign currency translation adjustments	(131)	(96)	58
Net change in unrecognized gains (losses) on cash flow hedges	7	(5)	4
Total Other comprehensive income, net of tax	22	80	16
Comprehensive income	\$ 491	\$ 338	\$ 277

The accompanying notes are an integral part of the consolidated financial statements.

Howmet Aerospace Inc. and subsidiaries
Consolidated Balance Sheet
(in millions)

December 31,	2022	2021
Assets		
Current assets:		
Cash and cash equivalents	\$ 791	\$ 720
Receivables from customers, less allowances of \$1 in 2022 and \$— in 2021 (M)	506	367
Other receivables (M)	31	53
Inventories (N)	1,609	1,402
Prepaid expenses and other current assets	206	195
Total current assets	3,143	2,737
Properties, plants, and equipment, net (O)	2,332	2,467
Goodwill (A and P)	4,013	4,067
Deferred income taxes (I)	54	184
Intangibles, net (P)	521	549
Other noncurrent assets (A and Q)	192	215
Total assets	\$ 10,255	\$ 10,219
Liabilities		
Current liabilities:		
Accounts payable, trade	\$ 962	\$ 732
Accrued compensation and retirement costs	195	198
Taxes, including income taxes	48	61
Accrued interest payable	75	74
Other current liabilities (A and Q)	202	183
Short-term debt (R and S)	—	5
Total current liabilities	1,482	1,253
Long-term debt, less amount due within one year (R and S)	4,162	4,227
Accrued pension benefits (H)	633	771
Accrued other postretirement benefits (H)	109	153
Other noncurrent liabilities and deferred credits (A and Q)	268	307
Total liabilities	6,654	6,711
Contingencies and commitments (V)		
Equity		
Howmet Aerospace Inc. shareholders' equity:		
Preferred stock (J)	55	55
Common stock (J)	412	422
Additional capital (J)	3,947	4,291
Retained earnings (A)	1,028	603
Accumulated other comprehensive loss (A and L)	(1,841)	(1,863)
Total equity	3,601	3,508
Total liabilities and equity	\$ 10,255	\$ 10,219

The accompanying notes are an integral part of the consolidated financial statements.

Howmet Aerospace Inc. and subsidiaries
Statement of Consolidated Cash Flows
(in millions)

For the year ended December 31,	2022	2021	2020
Operating activities			
Net income	\$ 469	\$ 258	\$ 261
Adjustments to reconcile net income to cash provided from operations:			
Depreciation and amortization	265	270	338
Deferred income taxes	79	38	2
Restructuring and other charges	56	90	164
Net realized and unrealized losses	18	9	8
Net periodic pension cost (H)	24	18	51
Stock-based compensation	54	41	45
Loss on debt redemption (R)	2	146	64
Other	12	20	(5)
Changes in assets and liabilities, excluding effects of acquisitions, divestitures, and foreign currency translation adjustments:			
Increase in receivables	(161)	(337)	(238)
(Increase) decrease in inventories	(234)	60	74
(Increase) decrease in prepaid expenses and other current assets	(6)	11	(2)
Increase (decrease) in accounts payable, trade	246	144	(381)
Increase (decrease) in accrued expenses	23	(146)	(217)
(Decrease) increase in taxes, including income taxes	(12)	(41)	98
Pension contributions	(43)	(96)	(257)
Decrease (increase) in noncurrent assets	1	(13)	39
Decrease in noncurrent liabilities	(60)	(23)	(35)
Cash provided from operations	733	449	9
Financing Activities			
Net change in short-term borrowings	(5)	(9)	(15)
Additions to debt (R)	—	700	2,400
Repurchases and payments on debt (R)	(69)	(1,538)	(2,043)
Debt issuance costs (C and R)	—	(11)	(61)
Premiums paid on early redemption of debt (R)	(2)	(138)	(59)
Repurchase of common stock (J)	(400)	(430)	(73)
Proceeds from exercise of employee stock options	16	22	33
Dividends paid to shareholders (J)	(44)	(19)	(11)
Net cash transferred to Arconic Corporation at separation	—	—	(500)
Other	(22)	(21)	(40)
Cash used for financing activities	(526)	(1,444)	(369)
Investing Activities			
Capital expenditures (D and I)	(193)	(199)	(267)
Proceeds from the sale of assets and businesses (O and U)	58	32	114
Sales of debt securities	—	6	—
Cash receipts from sold receivables (M)	—	267	422
Other	—	1	2
Cash (used for) provided from investing activities	(135)	107	271
Effect of exchange rate changes on cash, cash equivalents and restricted cash	(2)	(1)	(3)
Net change in cash, cash equivalents and restricted cash	70	(889)	(92)
Cash, cash equivalents and restricted cash at beginning of year	722	1,611	1,703
Cash, cash equivalents and restricted cash at end of year	\$ 792	\$ 722	\$ 1,611

The accompanying notes are an integral part of the consolidated financial statements.

Howmet Aerospace Inc. and subsidiaries
Statement of Changes in Consolidated Equity
(in millions, except per-share amounts)

	Howmet Shareholders						
	Preferred stock	Common stock	Additional capital	Retained earnings (Accumulated deficit)	Accumulated other comprehensive loss	Noncontrolling interests	Total equity
Balance at December 31, 2019	\$ 55	\$ 433	\$ 7,319	\$ 113	\$ (3,329)	\$ 14	\$ 4,605
Net income	—	—	—	261	—	—	261
Other comprehensive income (L)	—	—	—	—	16	—	16
Cash dividends declared:							
Preferred—Class A @ \$3.75 per share	—	—	—	(2)	—	—	(2)
Common @ \$0.02 per share	—	—	—	(8)	—	—	(8)
Repurchase and retirement of common stock (J)	—	(3)	(70)	—	—	—	(73)
Stock-based compensation (J)	—	—	45	—	—	—	45
Common stock issued: compensation plans (J)	—	3	(9)	—	—	—	(6)
Distributions to Arconic Corporation (C)	—	—	(2,617)	—	1,370	(14)	(1,261)
Balance at December 31, 2020	\$ 55	\$ 433	\$ 4,668	\$ 364	\$ (1,943)	\$ —	\$ 3,577
Net income	—	—	—	258	—	—	258
Other comprehensive income (L)	—	—	—	—	80	—	80
Cash dividends declared:							
Preferred—Class A @ \$3.75 per share	—	—	—	(2)	—	—	(2)
Common @ \$0.04 per share	—	—	—	(17)	—	—	(17)
Repurchase and retirement of common stock (J)	—	(13)	(417)	—	—	—	(430)
Stock-based compensation (J)	—	—	40	—	—	—	40
Common stock issued: compensation plans (J)	—	2	—	—	—	—	2
Balance at December 31, 2021	\$ 55	\$ 422	\$ 4,291	\$ 603	\$ (1,863)	\$ —	\$ 3,508
Net income	—	—	—	469	—	—	469
Other comprehensive income (L)	—	—	—	—	22	—	22
Cash dividends declared:							
Preferred—Class A @ \$3.75 per share	—	—	—	(2)	—	—	(2)
Common @ \$0.10 per share	—	—	—	(42)	—	—	(42)
Repurchase and retirement of common stock (J)	—	(12)	(388)	—	—	—	(400)
Stock-based compensation (J)	—	—	54	—	—	—	54
Common stock issued: compensation plans (J)	—	2	(10)	—	—	—	(8)
Balance at December 31, 2022	\$ 55	\$ 412	\$ 3,947	\$ 1,028	\$ (1,841)	\$ —	\$ 3,601

The accompanying notes are an integral part of the consolidated financial statements.

Howmet Aerospace Inc. and subsidiaries
Notes to the Consolidated Financial Statements
(dollars in millions, except share and per-share amounts)

A. Summary of Significant Accounting Policies

Basis of Presentation. The Consolidated Financial Statements of Howmet Aerospace Inc. (formerly known as Arconic Inc.) and subsidiaries (“Howmet” or the “Company” or “we” or “our”) are prepared in conformity with accounting principles generally accepted in the United States of America (“GAAP”) and require management to make certain judgments, estimates, and assumptions. These estimates are based on historical experience and, in some cases, assumptions based on current and future market experience, including considerations relating to the impact of COVID-19 and changes in the aerospace industry as a result of the pandemic. The impact of these changes is rapidly changing and of unknown duration and macroeconomic impact and, as a result, these conditions remain highly uncertain. We have made our best estimates using all relevant information available at the time, but it is possible that our estimates will differ from our actual results and affect the Consolidated Financial Statements in future periods and potentially require adverse adjustments to the recoverability of goodwill, intangible and long-lived assets, the realizability of deferred tax assets, and other judgments and estimations and assumptions. These may affect the reported amounts of assets and liabilities and the disclosure of contingent assets and liabilities at the date of the financial statements. They also may affect the reported amounts of sales and expenses during the reporting period. Actual results could differ from those estimates upon subsequent resolution of identified matters. Certain amounts in previously issued financial statements were reclassified to conform to the current period presentation.

The separation of Arconic Inc. into two standalone, publicly-traded companies, Howmet Aerospace Inc. and Arconic Corporation, (the “Arconic Inc. Separation Transaction”) occurred on April 1, 2020. The Engineered Products and Forgings (“EP&F”) segment remained in the existing company, which was renamed Howmet Aerospace Inc. The Global Rolled Products (“GRP”) segment was spun off and was named Arconic Corporation. In the second quarter of 2020, in conjunction with the Arconic Inc. Separation Transaction, the Company realigned its operations by separating the former EP&F segment into four new segments: Engine Products, Fastening Systems, Engineered Structures and Forged Wheels. See [Note D](#) for further details.

The financial results of Arconic Corporation for all periods prior to the Arconic Inc. Separation Transaction have been retrospectively reflected in the Statement of Consolidated Operations as discontinued operations and, as such, have been excluded from continuing operations and segment results for all periods presented. The cash flows, comprehensive income, and equity related to Arconic Corporation have not been segregated and are included in the Statement of Consolidated Cash Flows, Statement of Consolidated Comprehensive Income, and Statement of Changes in Consolidated Equity, respectively, for all periods prior to the Arconic Inc. Separation Transaction. See [Note C](#) for additional information related to the Arconic Inc. Separation Transaction and discontinued operations.

The Company derived approximately 46%, 41%, and 49% of its revenue from products sold to the commercial aerospace market for the years ended December 31, 2022, 2021, and 2020, respectively, which is substantially less than the pre-pandemic 2019 annual rate of approximately 60%. Due to the global COVID-19 pandemic and its impact on the commercial aerospace industry to date, there has been a decrease in domestic and international air travel, which in turn has adversely affected demand for narrow-body and wide-body aircraft. Although domestic air travel now approximates pre-pandemic levels, China domestic air travel is still below pre-pandemic 2019 levels on an average monthly basis in 2022. International travel also continues to be lower than pre-pandemic 2019 levels. We expect commercial aerospace growth to continue with narrow-body demand returning faster than wide-body demand. The commercial wide-body aircraft market is taking longer to recover, which is creating a shift in our product mix compared to pre-pandemic conditions. In addition to the impact from the pandemic, the timing and level of future aircraft builds by original equipment manufacturers are subject to changes and uncertainties, such as declines in Boeing 787 production rates due to delays in its recertification, which may cause our future results to differ from prior periods due to changes in product mix in certain segments.

Principles of Consolidation. The Consolidated Financial Statements include the accounts of Howmet Aerospace Inc. and companies in which Howmet Aerospace Inc. has a controlling interest. Intercompany transactions have been eliminated. Investments in affiliates in which Howmet Aerospace Inc. cannot exercise significant influence that do not have readily determinable fair values are accounted for at cost less impairment, if any, plus or minus changes resulting from observable price changes in orderly transactions for the identical or a similar investment of the same issuer.

Management also evaluates whether a Howmet Aerospace Inc. entity or interest is a variable interest entity and whether Howmet Aerospace Inc. is the primary beneficiary. Consolidation is required if both of these criteria are met. Howmet Aerospace Inc. does not have any variable interest entities requiring consolidation.

Cash Equivalents. Cash equivalents are highly liquid investments purchased with an original maturity of three months or less.

Inventory Valuation. Inventories are carried at the lower of cost or net realizable value with the cost of inventories determined under a combination of the first-in, first-out (“FIFO”), last-in, first-out (“LIFO”), and average-cost methods. See [Note N](#) for further details.

Properties, Plants, and Equipment. Properties, plants, and equipment are recorded at cost. Depreciation is recorded principally on the straight-line method at rates based on the estimated useful lives of the assets.

The following table details the weighted-average useful lives of structures and machinery and equipment by reporting segment (numbers in years):

	Structures	Machinery and equipment
Engine Products	30	17
Fastening Systems	27	17
Engineered Structures	28	19
Forged Wheels	28	18

Gains or losses from the sale of asset groups or properties are generally recorded in Restructuring and other charges while the sale of individual assets are recorded in Other expense, net (see policy below for assets classified as held for sale and discontinued operations). Repairs and maintenance are charged to expense as incurred. Interest related to the construction of qualifying assets is capitalized as part of the construction costs.

Properties, plants, and equipment are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount of such assets (asset group) may not be recoverable. Recoverability of assets is determined by comparing the estimated undiscounted net cash flows of the operations related to the assets (asset group) to their carrying amount. An impairment loss would be recognized when the carrying amount of the assets (asset group) exceeds the estimated undiscounted net cash flows. The amount of the impairment loss to be recorded is measured as the excess of the carrying value of the assets (asset group) over their fair value, with fair value determined using the best information available, which generally is a discounted cash flow (“DCF”) model. The determination of what constitutes an asset group, the associated estimated undiscounted net cash flows, and the estimated useful lives of the assets also require significant judgments. See [Note O](#) for further details.

Goodwill. Goodwill is not amortized; instead, it is reviewed for impairment annually (in the fourth quarter) or more frequently if indicators of impairment exist or if a decision is made to sell or realign a business. A significant amount of judgment is involved in determining if an indicator of impairment has occurred. Such indicators may include deterioration in general economic conditions, negative developments in equity and credit markets, adverse changes in the markets in which an entity operates, increases in input costs that have a negative effect on earnings and cash flows, or a trend of negative or declining cash flows over multiple periods, among others. The fair value that could be realized in an actual transaction may differ from that used to evaluate the impairment of goodwill.

Goodwill is allocated among and evaluated for impairment at the reporting unit level, which is defined as an operating segment or one level below an operating segment. Howmet has four reporting units composed of the Engine Products, Fastening Systems, Engineered Structures, and Forged Wheels segments.

Howmet determines annually, based on facts and circumstances, which of its reporting units will be subject to the qualitative assessment. Under the qualitative assessment, various events and circumstances (similar to the impairment indicators above) that would affect the estimated fair value of a reporting unit are identified to determine if a quantitative assessment should be performed. Management also considers the most recent forecasted cash flows and discount rates in determining if the prior fair value measurement estimate may be reduced to a level that would indicate impairment is more likely than not and compares the weighted average cost of capital (“WACC”) between the current and prior years for each reporting unit. If management concludes it is more likely than not (greater than 50%) that the estimated fair value of a reporting unit is less than its carrying amount, we will proceed directly to the quantitative impairment test. Howmet will periodically refresh a reporting unit’s fair value measurement and is based upon a number of factors, including how much fair value exceeded carrying value in the most recent quantitative assessment and the reporting unit’s recent performance. Our policy is that a quantitative impairment test be performed for each reporting unit at least once during every three-year period. For those reporting units where a qualitative assessment is either not performed or for which the conclusion is that an impairment is more likely than not, a quantitative impairment test will be performed.

Other Intangible Assets. Intangible assets with indefinite useful lives are not amortized while intangible assets with finite useful lives are amortized generally on a straight-line basis over the periods benefited.

The following table details the weighted-average useful lives of software and other intangible assets by reporting segment (numbers in years):

	Software	Other intangible assets
Engine Products	7	32
Fastening Systems	6	23
Engineered Structures	4	18
Forged Wheels	4	25

Leases. The Company determines whether a contract contains a lease at inception. The Company leases land and buildings, plant equipment, vehicles, and computer equipment which have been classified as operating leases. Certain real estate leases include one or more options to renew; the exercise of lease renewal options is at the Company's discretion. The Company includes renewal option periods in the lease term when it is determined that the options are reasonably certain to be exercised. Certain of Howmet's real estate lease agreements include rental payments that either have fixed contractual increases over time or adjust periodically for inflation. Certain of the Company's lease agreements include variable lease payments. The variable portion of payments is not included in the initial measurement of the right-of-use asset or lease liability due to the uncertainty of the payment amount and is recorded as lease cost in the period incurred. The Company also rents or subleases certain real estate to third parties, which is not material to the consolidated financial statements.

Operating lease right-of-use assets and lease liabilities with an initial term greater than 12 months are recorded on the balance sheet at the present value of the future minimum lease payments over the lease term at the lease commencement date and are recognized as lease expense on a straight-line basis over the lease term. The Company uses an incremental collateralized borrowing rate based on the information available at the lease commencement date in determining the present value of future payments, as most of its leases do not provide an implicit rate. The operating lease right-of-use assets also include any lease prepayments made and are reduced by lease incentives and accrued exit costs.

Environmental Matters. Expenditures for current operations are expensed or capitalized, as appropriate. Expenditures relating to existing conditions caused by past operations, which will not contribute to future sales, are expensed. Liabilities are recorded when remediation costs are probable and can be reasonably estimated. The liability may include costs such as site investigations, consultant fees, feasibility studies, outside contractors, and monitoring expenses. Estimates are generally not discounted or reduced by potential claims for recovery. Claims for recovery are recognized when probable and as agreements are reached with third parties. The estimates also include costs related to other potentially responsible parties to the extent that Howmet has reason to believe such parties will not fully pay their proportionate share. The liability is continuously reviewed and adjusted to reflect current remediation progress, prospective estimates of required activity, and other factors that may be relevant, including changes in technology or regulations.

Litigation and Contingent Liabilities. From time to time, we are involved in various lawsuits, claims, investigations, and proceedings. These matters may include speculative claims for substantial or indeterminate amounts of damages. Management determines the likelihood of an unfavorable outcome based on many factors, such as the nature of the matter, available defenses and case strategy, progress of the matter, views and opinions of legal counsel and other advisors, applicability and success of appeals processes, and the outcome of similar historical matters, among others. If an unfavorable outcome is deemed probable and the amount of the potential loss can be estimated, the most reasonable loss estimate is recorded. If an unfavorable outcome of a matter is deemed probable but the loss is not reasonably estimable, or if an unfavorable outcome is deemed reasonably possible, then the matter is disclosed but no liability is recorded. Legal matters are reviewed on a continuous basis to determine if there has been a change in management's judgment regarding the likelihood of an unfavorable outcome or the estimate of a potential loss.

Revenue Recognition. The Company's contracts with customers are comprised of acknowledged purchase orders incorporating the Company's standard terms and conditions, or for larger customers, may also generally include terms under negotiated multi-year agreements. These contracts with customers typically consist of the manufacture of products which represent single performance obligations that are satisfied upon transfer of control of the product to the customer. The Company produces fastening systems; seamless rolled rings; investment castings, including airfoils; extruded, machined and formed aircraft parts; and forged aluminum commercial vehicle wheels. Transfer of control is assessed based on alternative use of the products we produce and our enforceable right to payment for performance to date under the contract terms. Transfer of control and revenue recognition generally occur upon shipment or delivery of the product, which is when title, ownership and risk of loss pass to the customer and is based on the applicable shipping terms. The shipping terms vary across all businesses and depend on the product, the country of origin, and the type of transportation (truck, train, or vessel). An invoice for payment is issued at time of shipment. Our segments set commercial terms on which Howmet sells products to its customers. These terms are influenced by industry custom, market conditions, product line (specialty versus commodity products), and other considerations.

In certain circumstances, Howmet receives advanced payments from its customers for product to be delivered in future periods. These advanced payments are recorded as deferred revenue until the product is delivered and title and risk of loss have passed to the customer in accordance with the terms of the contract. Deferred revenue is included in Other current liabilities and Other noncurrent liabilities and deferred credits in the Consolidated Balance Sheet. Advanced payments were \$32 and \$46 at December 31, 2022 and 2021, respectively.

Income Taxes. The provision for income taxes is determined using the asset and liability approach of accounting for income taxes. Under this approach, the provision for income taxes represents income taxes paid or payable (or received or receivable) for the current year plus the change in deferred taxes during the year. Deferred taxes represent the future tax consequences expected to occur when the reported amounts of assets and liabilities are recovered or paid, and result from differences between the financial and tax bases of Howmet's assets and liabilities and are adjusted for changes in tax rates and tax laws when enacted.

Valuation allowances are recorded to reduce deferred tax assets when it is more likely than not (greater than 50%) that a tax benefit will not be realized. In evaluating the need for a valuation allowance, management considers all potential sources of taxable income, including income available in carryback periods, future reversals of taxable temporary differences, projections of taxable income, and income from tax planning strategies, as well as all available positive and negative evidence. Positive evidence includes factors such as a history of profitable operations, projections of future profitability within the carryforward period, including from tax planning strategies, and Howmet's experience with similar operations. Existing favorable contracts and the ability to sell products into established markets are additional positive evidence. Negative evidence includes items such as cumulative losses, projections of future losses, or carryforward periods that are not long enough to allow for the utilization of a deferred tax asset based on existing projections of income. Deferred tax assets for which no valuation allowance is recorded may not be realized upon changes in facts and circumstances, resulting in a future charge to establish a valuation allowance. Existing valuation allowances are re-examined under the same standards of positive and negative evidence. If it is determined that it is more likely than not that a deferred tax asset will be realized, the appropriate amount of the valuation allowance, if any, is released. Deferred tax assets and liabilities are also remeasured to reflect changes in underlying tax rates due to law changes and the granting and lapse of tax holidays.

It is Howmet's policy to apply a tax law ordering approach when considering the need for a valuation allowance on net operating losses expected to offset Global Intangible Low-Taxed Income ("GILTI") income inclusions. Under this approach, reductions in cash tax savings are not considered as part of the valuation allowance assessment. Instead, future GILTI inclusions are considered a source of taxable income that support the realizability of deferred tax assets.

It is Howmet's policy to treat taxes due from future inclusions in United States ("U.S.") taxable income related to GILTI as a current period expense when incurred.

Tax benefits related to uncertain tax positions taken or expected to be taken on a tax return are recorded when such benefits meet a more likely than not threshold. Otherwise, these tax benefits are recorded when a tax position has been effectively settled, which means that the statute of limitations has expired or the appropriate taxing authority has completed their examination even though the statute of limitations remains open. Interest and penalties related to uncertain tax positions are recognized as part of the provision for income taxes and are accrued beginning in the period that such interest and penalties would be applicable under relevant tax law until such time that the related tax benefits are recognized.

Stock-Based Compensation. Howmet recognizes compensation expense for employee equity grants using the non-substantive vesting period approach, in which the expense is recognized ratably over the requisite service period based on the grant date fair value. Forfeitures are accounted for as they occur. The fair value of new stock options is estimated on the date of grant using a lattice-pricing model. The fair value of performance awards containing a market condition is valued using a Monte Carlo valuation model. Determining the fair value at the grant date requires judgment, including estimates for the average risk-free interest rate, dividend yield, volatility, and exercise behavior. These assumptions may differ significantly between grant dates because of changes in the actual results of these inputs that occur over time.

Foreign Currency. The local currency is the functional currency for Howmet's significant operations outside the U.S., except for certain operations in Canada, the United Kingdom ("U.K."), and France, where the U.S. dollar is used as the functional currency. The determination of the functional currency for Howmet's operations is made based on the appropriate economic and management indicators.

Acquisitions. Howmet's business acquisitions are accounted for using the acquisition method. The purchase price is allocated to the assets acquired and liabilities assumed based on their estimated fair values. Any excess purchase price over the fair value of the net assets acquired is recorded as goodwill. For all acquisitions, operating results are included in the Statement of Consolidated Operations from the date of the acquisition.

Discontinued Operations and Assets Held for Sale. For those businesses where management has committed to a plan to divest, each business is valued at the lower of its carrying amount or estimated fair value less cost to sell. If the carrying amount of the business exceeds its estimated fair value, an impairment loss is recognized. Fair value is estimated using accepted valuation techniques such as a DCF model, valuations performed by third parties, earnings multiples, or indicative bids, when available. A number of significant estimates and assumptions are involved in the application of these techniques, including the forecasting of markets and market share, sales volumes and prices, costs and expenses, and multiple other factors. Management considers historical experience and all available information at the time the estimates are made; however, the fair value that is ultimately realized upon the divestiture of a business may differ from the estimated fair value reflected in the Consolidated Financial Statements. Depreciation and amortization expense is not recorded on assets of a business to be divested once they are classified as held for sale. Businesses to be divested are generally classified in the Consolidated Financial Statements as either discontinued operations or held for sale.

For businesses classified as discontinued operations, the balance sheet amounts and results of operations are reclassified from their historical presentation to assets and liabilities of discontinued operations on the Consolidated Balance Sheet and to discontinued operations on the Statement of Consolidated Operations, respectively, for all periods presented. The gains or losses associated with these divested businesses are recorded in discontinued operations on the Statement of Consolidated Operations. The Statement of Consolidated Cash Flows is not required to be reclassified for discontinued operations for any period. Segment information does not include the assets or operating results of businesses classified as discontinued operations for all periods presented. These businesses are expected to be disposed of within one year.

For businesses classified as held for sale that do not qualify for discontinued operations treatment, the balance sheet and cash flow amounts are reclassified from their historical presentation to assets and liabilities of operations held for sale for all periods presented. The results of operations continue to be reported in continuing operations. The gains or losses associated with these divested businesses are recorded in Restructuring and other charges on the Statement of Consolidated Operations. The segment information includes the assets and operating results of businesses classified as held for sale for all periods presented.

B. Recently Adopted and Recently Issued Accounting Guidance

Recently Adopted Accounting Guidance.

On January 1, 2021, the Company adopted changes issued by the Financial Accounting Standards Board ("FASB") that were intended to simplify various aspects of accounting for income taxes by eliminating certain exceptions contained in existing guidance and amending other guidance to simplify several other income tax accounting matters. The adoption of this new guidance did not have a material impact on the Consolidated Financial Statements.

On January 1, 2020, the Company adopted changes issued by the FASB related to the impairment model for expected credit losses. The new impairment model (known as the current expected credit loss ("CECL") model) is based on expected losses rather than incurred losses. The Company recognizes as an allowance its estimate of expected credit losses. The CECL model applies to most debt instruments, trade receivables, lease receivables, financial guarantee contracts, and other loan commitments and requires the measurement of expected credit losses on assets including those that have a low risk of loss. The adoption of this new guidance did not have a material impact on the Consolidated Financial Statements.

In August 2018, the FASB issued guidance that impacts disclosures for defined benefit pension plans and other postretirement benefit plans. These changes became effective for Howmet's annual report for the year ended December 31, 2020 which did not have a material impact on its Consolidated Financial Statements.

Recently Issued Accounting Guidance.

In September 2022, the FASB issued guidance to enhance the transparency of disclosures regarding supplier finance programs. These changes become effective for fiscal years beginning after December 15, 2022, including interim periods within those fiscal years, except for the amendment on rollforward information, which is effective for fiscal years beginning after December 15, 2023. Management is currently evaluating the impact of these changes on the Consolidated Financial Statements.

In March 2020, the FASB issued amendments that provide optional expedients and exceptions for applying GAAP to contracts, hedging relationships, and other transactions affected by reference rate reform, if certain criteria are met. The amendments apply only to contracts and hedging relationships that reference London Inter-bank Offered Rate (“LIBOR”) or another reference rate expected to be discontinued due to reference rate reform. These amendments are effective immediately and may be applied prospectively to contract modifications made and hedging relationships entered into or evaluated on or before December 31, 2022. In December 2022, the FASB deferred the sunset date to December 31, 2024. In February 2023, the Company amended its Five-Year Revolving Credit Agreement to replace LIBOR with the term secured overnight financing rate (“Term SOFR”) as the reference rate for U.S. dollar-denominated loans (See [Note R](#)). Management has concluded that the impact of these changes is not expected to have a material impact on the Consolidated Financial Statements.

C. Arconic Inc. Separation Transaction and Discontinued Operations

On April 1, 2020, the Company completed the separation of its business into two independent, publicly-traded companies, which was effected by the distribution (the “Distribution”) by the Company of all of the outstanding common stock of Arconic Corporation to the Company’s stockholders. Following the Arconic Inc. Separation Transaction, Arconic Corporation held the Global Rolled Products businesses (global rolled products, aluminum extrusions, and building and construction systems) previously held by the Company. The Company retained the Engineered Products and Forgings businesses (engine products, fastening systems, engineered structures, and forged wheels).

In connection with the Arconic Inc. Separation Transaction, the Company entered into several agreements with Arconic Corporation, including the following: a Separation and Distribution Agreement, Tax Matters Agreement, Employee Matters Agreement, certain Patent, Know-How, Trade Secret License and Trademark License Agreements, and Raw Material Supply Agreements.

On February 7, 2020, Arconic Corporation completed an offering of \$600 aggregate principal amount of 6.125% senior secured second-lien notes due 2028. On March 25, 2020, Arconic Corporation entered into a credit agreement which provided for a \$600 aggregate principal amount seven-year senior secured first-lien loan B facility and a revolving credit facility which is guaranteed by certain of Arconic Corporation's wholly-owned domestic subsidiaries and secured on a first-priority basis by liens on substantially all assets of Arconic Corporation and subsidiary guarantors. Arconic Corporation used the proceeds to make payment to the Company to fund the transfer of certain assets to Arconic Corporation relating to the Arconic Inc. Separation Transaction and for general corporate purposes. The Company incurred debt issuance costs of \$45 associated with these issuances for the first quarter of 2020 and year ended December 31, 2020.

On February 1, 2020, the Company completed the sale of its rolling mill in Itapissuma, Brazil for \$50 in cash, which resulted in a loss of \$59, of which \$53 was recognized in Restructuring and other charges within discontinued operations in the second half of 2019 and \$6 in the first quarter of 2020 and year ended December 31, 2020. On March 1, 2020, the Company sold its hard alloy extrusions plant in South Korea for \$62 in cash, which resulted in a gain that was recognized in Restructuring and other charges within discontinued operations in the first quarter of 2020 and year ended December 31, 2020.

Discontinued Operations

The results of operations of Arconic Corporation are presented as Income from discontinued operations after income taxes in the Statement of Consolidated Operations as summarized below:

	Year ended December 31,	
	2020	
Sales	\$	1,575
Cost of goods sold		1,293
Selling, general administrative, research and development and other expenses		106
Provision for depreciation and amortization		58
Restructuring and other credits		(18)
Operating income from discontinued operations		136
Interest expense, net		7
Other expense, net		41
Income from discontinued operations		88
Provision for income taxes		38
Income from discontinued operations after income taxes	\$	50

The following table presents purchases of properties, plants, and equipment, proceeds from the sale of businesses, and the provision for depreciation and amortization of discontinued operations related to Arconic Corporation:

	<u>Year ended December 31,</u>	
	<u>2020</u>	
Capital expenditures	\$	72
Proceeds from the sales of businesses		112
Provision for depreciation and amortization		58

On April 1, 2020, management evaluated the net assets of Arconic Corporation for potential impairment and determined that no impairment charge was required.

The cash flows and equity related to Arconic Corporation have not been segregated and are included in the Statement of Consolidated Cash Flows or Statement of Comprehensive Income for all periods presented prior to the Arconic Inc. Separation Transaction.

D. Segment and Geographic Area Information

Howmet is a global leader in lightweight metals engineering and manufacturing. Howmet's innovative, multi-material products, which include nickel, titanium, aluminum, and cobalt, are used worldwide in the aerospace (commercial and defense), commercial transportation, and industrial and other markets. Segment performance under Howmet's management reporting system is evaluated based on a number of factors; however, the primary measure of performance is Segment Adjusted EBITDA. Prior to the first quarter of 2022, the Company used Segment operating profit as its primary measure of performance. However, the Company's Chief Executive Officer believes that Segment Adjusted EBITDA is now a better representation of its business because it provides additional information with respect to the Company's operating performance and the Company's ability to meet its financial obligations. Howmet's definition of Segment Adjusted EBITDA (Earnings before interest, taxes, depreciation, and amortization) is net margin plus an add-back for depreciation and amortization. Net margin is equivalent to Sales minus the following items: Cost of goods sold; Selling, general administrative, and other expenses; Research and development expenses; and Provision for depreciation and amortization. Special items, including Restructuring and other charges, are excluded from Net margin and Segment Adjusted EBITDA. Segment Adjusted EBITDA may not be comparable to similarly titled measures of other companies. Differences between the total segment and consolidated totals are in Corporate.

Following the Arconic Inc. Separation Transaction, Howmet's operations consist of four worldwide reportable segments as follows:

Engine Products

Engine Products produces investment castings, including airfoils, and seamless rolled rings primarily for aircraft engines and industrial gas turbines. Engine Products produces rotating parts as well as structural parts.

Fastening Systems

Fastening Systems produces aerospace fastening systems, as well as commercial transportation, industrial and other fasteners. The business's high-tech, multi-material fastening systems are found nose to tail on aircraft and aero engines. Fastening Systems' products are also critical components of commercial transportation vehicles, automobiles, construction and industrial equipment, and renewable energy sectors.

Engineered Structures

Engineered Structures produces titanium ingots and mill products for aerospace and defense applications and is vertically integrated to produce titanium forgings, extrusions, forming and machining services for airframe, wing, aero-engine, and landing gear components. Engineered Structures also produces aluminum forgings, nickel forgings, and aluminum machined components and assemblies for aerospace and defense applications.

Forged Wheels

Forged Wheels provides forged aluminum wheels and related products for heavy-duty trucks and the commercial transportation market.

The operating results and assets of the Company's reportable segments were as follows:

Year ended	Engine Products	Fastening Systems	Engineered Structures	Forged Wheels	Total Segment
2022					
Sales:					
Third-party sales	\$ 2,698	\$ 1,117	\$ 790	\$ 1,058	\$ 5,663
Inter-segment sales	4	—	6	—	10
Total sales	\$ 2,702	\$ 1,117	\$ 796	\$ 1,058	\$ 5,673
Profit and loss:					
Segment Adjusted EBITDA	\$ 729	\$ 234	\$ 111	\$ 278	\$ 1,352
Restructuring and other charges	29	8	7	2	46
Provision for depreciation and amortization	125	45	48	40	258
Other:					
Capital expenditures	\$ 94	\$ 39	\$ 17	\$ 28	\$ 178
Total assets	4,784	2,661	1,273	701	9,419
2021					
Sales:					
Third-party sales	\$ 2,282	\$ 1,044	\$ 725	\$ 921	\$ 4,972
Inter-segment sales	4	—	6	—	10
Total sales	\$ 2,286	\$ 1,044	\$ 731	\$ 921	\$ 4,982
Profit and loss:					
Segment Adjusted EBITDA	\$ 564	\$ 239	\$ 103	\$ 294	\$ 1,200
Restructuring and other charges	74	—	16	—	90
Provision for depreciation and amortization	124	49	49	39	261
Other:					
Capital expenditures	\$ 74	\$ 42	\$ 21	\$ 45	\$ 182
Total assets	4,663	2,635	1,280	684	9,262
2020					
Sales:					
Third-party sales	\$ 2,406	\$ 1,245	\$ 927	\$ 679	\$ 5,257
Inter-segment sales	5	—	7	—	12
Total sales	\$ 2,411	\$ 1,245	\$ 934	\$ 679	\$ 5,269
Profit and loss:					
Segment Adjusted EBITDA	\$ 540	\$ 295	\$ 125	\$ 192	\$ 1,152
Restructuring and other charges	36	39	28	3	106
Provision for depreciation and amortization	123	48	52	39	262
Other:					
Capital expenditures	\$ 77	\$ 39	\$ 19	\$ 23	\$ 158
Total assets	4,756	2,707	1,444	628	9,535

The following table reconciles Total segment capital expenditures, which are presented on an accrual basis, with Capital expenditures as presented on the Statement of Consolidated Cash Flows. Differences between the total segment and consolidated totals are in Corporate and discontinued operations, including the impact of changes in accrued capital expenditures during the period.

For the year ended December 31,	2022	2021	2020
Total segment capital expenditures	\$ 178	\$ 182	\$ 158
Corporate and discontinued operations	15	17	109
Capital expenditures	<u>\$ 193</u>	<u>\$ 199</u>	<u>\$ 267</u>

The following tables reconcile certain segment information to consolidated totals. Differences between the total segment and consolidated totals are in Corporate.

For the year ended December 31,	2022	2021	2020
Sales:			
Total segment sales	\$ 5,673	\$ 4,982	\$ 5,269
Elimination of inter-segment sales	(10)	(10)	(12)
Corporate	—	—	2
Consolidated sales	<u>\$ 5,663</u>	<u>\$ 4,972</u>	<u>\$ 5,259</u>

For the year ended December 31,	2022	2021	2020
Total Segment Adjusted EBITDA	\$ 1,352	\$ 1,200	\$ 1,152
Segment provision for depreciation and amortization	(258)	(261)	(262)
Unallocated amounts:			
Restructuring and other charges	(56)	(90)	(182)
Corporate expense	(119)	(101)	(82)
Operating income	\$ 919	\$ 748	\$ 626
Loss on debt redemption	(2)	(146)	(64)
Interest expense, net	(229)	(259)	(317)
Other expense, net (V)	(82)	(19)	(74)
Income from continuing operations before income taxes	<u>\$ 606</u>	<u>\$ 324</u>	<u>\$ 171</u>

December 31,	2022	2021
Assets:		
Total segment assets	\$ 9,419	\$ 9,262
Unallocated amounts:		
Cash and cash equivalents	791	720
Deferred income taxes	54	184
Corporate fixed assets, net	91	133
Fair value of derivative contracts	6	2
Accounts receivable securitization	(250)	(250)
Other	144	168
Consolidated assets	<u>\$ 10,255</u>	<u>\$ 10,219</u>

Segment assets include third-party receivables while the accounts receivable securitization item includes the impact of sold receivables under the Company's Accounts Receivable securitization programs. See [Note M](#) for further details.

Geographic information for sales was as follows (based upon the destination of the sale):

For the year ended December 31,	2022	2021	2020
Sales:			
United States	\$ 2,928	\$ 2,542	\$ 2,782
France	394	330	327
Japan	319	319	388
Germany	292	257	309
Mexico	235	225	185
United Kingdom	228	213	231
Italy	180	181	181
Canada	138	127	119
China	111	71	75
Poland	96	77	76
Other	742	630	586
	<u>\$ 5,663</u>	<u>\$ 4,972</u>	<u>\$ 5,259</u>

Geographic information for long-lived tangible assets was as follows (based upon the physical location of the assets):

December 31,	2022	2021
Long-lived assets:		
United States	\$ 1,793	\$ 1,868
Hungary	193	205
France	114	127
United Kingdom	107	116
Germany	58	66
Mexico	58	61
China	46	53
Other	74	79
	<u>\$ 2,443</u>	<u>\$ 2,575</u>

The following table disaggregates segment revenue by major market served. Differences between total segment and consolidated totals are in Corporate.

	Engine Products	Fastening Systems	Engineered Structures	Forged Wheels	Total Segment
Year ended December 31, 2022					
Aerospace - Commercial	\$ 1,495	\$ 616	\$ 495	\$ —	\$ 2,606
Aerospace - Defense	526	158	239	—	923
Commercial Transportation	—	225	—	1,058	1,283
Industrial and Other	677	118	56	—	851
Total end-market revenue	\$ 2,698	\$ 1,117	\$ 790	\$ 1,058	\$ 5,663
Year ended December 31, 2021					
Aerospace - Commercial	\$ 1,105	\$ 537	\$ 387	\$ —	\$ 2,029
Aerospace - Defense	523	158	270	—	951
Commercial Transportation	—	208	—	921	1,129
Industrial and Other	654	141	68	—	863
Total end-market revenue	\$ 2,282	\$ 1,044	\$ 725	\$ 921	\$ 4,972
Year ended December 31, 2020					
Aerospace - Commercial	\$ 1,247	\$ 808	\$ 542	\$ —	\$ 2,597
Aerospace - Defense	557	156	303	—	1,016
Commercial Transportation	—	155	—	679	834
Industrial and Other	602	126	82	—	810
Total end-market revenue	\$ 2,406	\$ 1,245	\$ 927	\$ 679	\$ 5,257

The Company derived 62%, 60%, and 69% of its revenue for the years ended December 31, 2022, 2021, and 2020, respectively, from aerospace (commercial and defense) markets.

General Electric Company and Raytheon Technologies Corporation represented approximately 12% and 9%, respectively, of the Company's third-party sales for the year ended December 31, 2022, primarily from the Engine Products segment.

E. Restructuring and Other Charges

Restructuring and other charges were comprised of the following:

For the year ended December 31,	2022	2021	2020
Layoff costs	\$ —	\$ 7	\$ 113
Net reversals of previously recorded layoff reserves	(1)	(3)	(21)
Pension, other post-retirement benefits and deferred compensation - net settlement and curtailments	58	75	69
Non-cash asset impairments and accelerated depreciation	1	15	5
Net (gain) loss related to divestitures of assets and businesses (U)	(8)	(8)	8
Other	6	4	8
Restructuring and other charges	\$ 56	\$ 90	\$ 182

Layoff costs were recorded based on approved detailed action plans submitted by the operating locations that specified positions to be eliminated, benefits to be paid under existing severance plans, union contracts or statutory requirements and the expected timetable for completion of the plans.

2022 Actions. In 2022, Howmet recorded Restructuring and other charges of \$56, which included a \$58 charge for U.S. and U.K. pension plans' settlement accounting; a \$6 charge for various other exit costs, and a \$1 charge for accelerated depreciation primarily related to the closure of small U.S. manufacturing facilities in Engineered Structures. These charges were partially offset by a gain of \$8 on the sale of assets at a small U.S. manufacturing facility in Engine Products and a benefit of \$1 related to the reversal of a number of layoff reserves related to prior periods.

2021 Actions. In 2021, Howmet recorded Restructuring and other charges of \$90, which included a \$75 charge for U.K. and U.S. pension plans' settlement accounting; a \$15 charge for accelerated depreciation primarily related to the closure of small U.S. manufacturing facilities in Engine Products and Fastening Systems; a \$7 charge for layoff costs, including the separation of 253 employees (171 in Engineered Structures, 75 in Engine Products, 6 in Fastening Systems and 1 in Corporate); a \$4 charge for impairment of assets associated with an agreement to sell a small manufacturing business in France, and a \$4 charge for various other exit costs. These charges were partially offset by a gain of \$12 on the sale of assets at a small U.S. manufacturing facility in Fastening Systems and a benefit of \$3 related to the reversal of a number of layoff reserves related to prior periods.

As of December 31, 2022, 80 of the 253 employees were separated. The remaining separations for the 2021 restructuring programs are expected to be completed in 2023 with certain final payouts expected to occur in 2024.

2020 Actions. In 2020, Howmet recorded Restructuring and other charges of \$182, which included a \$113 charge for layoff costs, including the separation of 4,301 employees (1,706 in Engine Products, 1,675 in Fastening Systems, 805 in Engineered Structures, 92 in Forged Wheels and 23 in Corporate); a \$69 net charge for Pension, Other postretirement benefits and deferred compensation - net settlement and curtailments, composed of a \$74 charge for U.K. and U.S. pension plans' settlement accounting offset by a \$3 benefit from the termination of a deferred compensation plan and a \$2 curtailment benefit related to a postretirement plan; a \$5 post-closing adjustment related to the sale of the Company's U.K. forgings business (which was formerly part of the Engine Products segment); a \$5 charge for impairment of assets associated with an agreement to sell an aerospace components business in the U.K. (within the Engineered Structures segment), which ultimately did not occur and the business was returned to held for use; \$5 charge related to the impairment of a cost method investment; a \$2 charge for accelerated depreciation; a \$1 charge for impairment of assets due to a facility sale, and a \$6 charge for various other exit costs. These charges were partially offset by a benefit of \$21 related to the reversal of a number of prior period programs and a gain of \$3 on the sale of assets.

As of December 31, 2022, the employee separations associated with the 2020 restructuring programs were essentially complete.

Activity and reserve balances for restructuring charges were as follows:

	Layoff costs	Other exit costs	Total
Reserve balances at December 31, 2019	\$ 13	\$ —	\$ 13
2020 Activity			
Cash payments	(51)	—	(51)
Restructuring and other charges	161	21	182
Other ⁽¹⁾	(69)	(21)	(90)
Reserve balances at December 31, 2020	<u>\$ 54</u>	<u>\$ —</u>	<u>\$ 54</u>
2021 Activity			
Cash payments	\$ (41)	\$ (2)	\$ (43)
Restructuring and other charges	79	11	90
Other ⁽²⁾	(75)	(7)	(82)
Reserve balances at December 31, 2021	<u>\$ 17</u>	<u>\$ 2</u>	<u>\$ 19</u>
2022 Activity			
Cash payments	\$ (9)	\$ (7)	\$ (16)
Restructuring and other charges	56	—	56
Other ⁽³⁾	(58)	7	(51)
Reserve balances at December 31, 2022	<u>\$ 6</u>	<u>\$ 2</u>	<u>\$ 8</u>

⁽¹⁾ In 2020, other for layoff costs included \$74 in settlement accounting charges related to U.K. and U.S. pension plans, offset by a \$3 benefit from the termination of a deferred compensation plan and a \$2 curtailment benefit related to a postretirement plan; while other for other exit costs included a charge of \$5 for impairment of assets; a \$5 post-closing adjustment related to the sale of a business; a \$5 charge related to the impairment of a cost method investment; a \$2 charge for accelerated depreciation; a \$1 charge for impairment of assets due to a facility closure and a \$6 charge for various other exit costs, which were offset by a gain of \$3 on the sale of assets.

- (2) In 2021, other for layoff costs included \$75 in settlement accounting charges related to U.K. and U.S. pension plans; while other for other exit costs included a charge of \$15 for accelerated depreciation and a \$4 charge for various other exit costs, which were offset by a gain of \$12 on the sale of assets.
- (3) In 2022, other for layoff costs included \$58 in settlement accounting charges related to U.S. and U.K. pension plans; while other for other exit costs included a gain of \$8 on the sale of assets, which was offset by a \$1 charge for accelerated depreciation.

The remaining reserves at December 31, 2022 are expected to be paid in cash during 2023 and 2024.

F. Interest Cost Components

For the year ended December 31,	2022	2021	2020
Amount charged to interest expense, net	\$ 229	\$ 259	\$ 317
Loss on debt redemption (R)	2	146	64
Amount capitalized	6	8	11
Total	\$ 237	\$ 413	\$ 392

G. Other Expense, Net

For the year ended December 31,	2022	2021	2020
Non-service costs - pension and other postretirement benefits (H)	\$ 16	\$ 9	\$ 26
Interest income	(6)	(2)	(5)
Foreign currency (gains) losses, net	(1)	2	(11)
Net realized and unrealized losses	18	9	8
Deferred compensation	(8)	8	10
Judgment from legal proceeding (V)	65	—	—
Other, net ⁽¹⁾	(2)	(7)	46
Total	\$ 82	\$ 19	\$ 74

- (1) In 2020, Other, net included a charge from the write-off of a tax indemnification receivable of \$53 reflecting the aggregate of Alcoa Corporation's 49% share and Arconic Corporation's 33.66% share of a Spanish tax reserve (see [Note V](#)).

H. Pension and Other Postretirement Benefits

Howmet maintains pension plans covering U.S. employees and certain employees in foreign locations. Defined pension benefits generally depend on length of service and job grade. Substantially all benefits are paid through pension trusts that are sufficiently funded to ensure that all plans can pay benefits to retirees as they become due. Most salaried and non-bargaining hourly U.S. employees hired after March 1, 2006, participate in a defined contribution plan instead of a defined benefit plan.

Howmet also maintains health care and life insurance postretirement benefit plans covering eligible U.S. retired employees. Generally, the medical plans are unfunded and pay a percentage of medical expenses, reduced by deductibles and other coverage. Life benefits are generally provided by insurance contracts. Howmet retains the right, subject to existing agreements, to change or eliminate these benefits. Effective May 1, 2019, salaried and non-bargaining hourly U.S. employees and retirees are not eligible for postretirement life insurance benefits. Salaried and non-bargaining hourly U.S. employees that retire on or after January 1, 2022 are not eligible for any postretirement medical benefits. Certain previously retired salary and non-bargaining hourly U.S. employees remain eligible for Medicare Part B reimbursement.

In 2022, a certain U.S. pension plan attained funding levels that allowed full lump sum payments. These payments resulted in settlement charges of \$41 that were recorded in Restructuring and other charges in the Statement of Consolidated Operations. Additionally, in 2022, 2021, and 2020, the Company applied settlement accounting to other U.S. and U.K. pension plans due to lump sum payments to participants, which resulted in settlement charges of \$17, \$12, and \$8, respectively, that were recorded in Restructuring and other charges.

In December 2022, the Canadian pension plan was amended to provide for termination of the plan. As a result, the Company recognized a reduction of \$2 in the pension benefit obligation through curtailment, which was offset in Accumulated other comprehensive loss in the Consolidated Balance Sheet. The wind-up efforts and satisfaction of all plan liabilities are expected to be completed in 2023.

In 2021 and 2020, the Company undertook a number of actions to reduce pension obligations in the U.K. by offering lump sum payments to certain plan participants and entering into group annuity contracts with a third-party carrier to pay and administer future annuity payments. The Company applied settlement accounting to these U.K. pension plans, which resulted in settlement charges of \$23 and \$66, respectively, that were recorded in Restructuring and other charges in the Statement of Consolidated Operations. These actions reduced the number of pension plan participants in the U.K. by approximately 70%.

In 2020, the Company communicated to plan participants that for its U.S. salaried and non-bargained hourly retirees of the Company and its subsidiaries, it would eliminate certain health care subsidies effective December 31, 2021, and that for certain bargained retirees of the Company, it would eliminate certain health care subsidies effective December 31, 2021 and the life insurance benefit effective August 1, 2020. As a result of these amendments, the Company recorded a decrease to the Accrued other postretirement benefits liability of \$6 in 2020, which was offset in Accumulated other comprehensive loss.

In the first quarter of 2021, the Company announced a plan administration change of certain of its Medicare-eligible prescription drug benefits to an Employer Group Waiver Plan with a wrap-around secondary plan effective July 1, 2021. The administration change is expected to reduce costs to the Company through the usage of Medicare Part D and drug manufacturer subsidies. Due to this amendment, along with the associated plan remeasurements, the Company recorded a decrease to its Accrued other postretirement benefits liability of \$39, which was offset in Accumulated other comprehensive loss.

In October 2021, the Company undertook additional actions to reduce gross pension obligations by \$125 by purchasing group annuity contracts with a third-party carrier to pay and administer future annuity payments. These actions resulted in a settlement charge of \$34 and were recorded in Restructuring and other charges in the fourth quarter ended December 31, 2021 in the Statement of Consolidated Operations. The funded status of the plans have not been significantly impacted.

Obligations and Funded Status

December 31,	Pension benefits		Other postretirement benefits	
	2022	2021	2022	2021
Change in benefit obligation				
Benefit obligation at beginning of year	\$ 2,296	\$ 2,713	\$ 165	\$ 215
Service cost	4	4	2	2
Interest cost	51	47	4	5
Amendments	—	3	—	(31)
Actuarial gains ⁽¹⁾	(553)	(55)	(38)	(10)
Settlements	(72)	(275)	—	—
Curtailments	(2)	—	—	—
Benefits paid	(102)	(140)	(13)	(17)
Medicare Part D subsidy receipts	—	—	—	1
Foreign currency translation impact	(23)	(1)	—	—
Benefit obligation at end of year ⁽²⁾	\$ 1,599	\$ 2,296	\$ 120	\$ 165
Change in plan assets⁽²⁾				
Fair value of plan assets at beginning of year	\$ 1,531	\$ 1,724	\$ —	\$ —
Actual (loss) return on plan assets	(383)	124	—	—
Employer contributions	43	96	—	—
Benefits paid	(87)	(123)	—	—
Administrative expenses	(12)	(12)	—	—
Settlement payments	(98)	(277)	—	—
Foreign currency translation impact	(24)	(1)	—	—
Fair value of plan assets at end of year ⁽²⁾	\$ 970	\$ 1,531	\$ —	\$ —
Funded status	\$ (629)	\$ (765)	\$ (120)	\$ (165)
Amounts recognized in the Consolidated Balance Sheet consist of:				
Noncurrent assets	\$ 20	\$ 22	\$ —	\$ —
Current liabilities	(16)	(16)	(11)	(12)
Noncurrent liabilities	(633)	(771)	(109)	(153)
Net amount recognized	\$ (629)	\$ (765)	\$ (120)	\$ (165)
Amounts recognized in Accumulated Other Comprehensive Loss consist of:				
Net actuarial loss (gain)	\$ 907	\$ 1,067	\$ (28)	\$ 11
Prior service cost (benefit)	2	3	(40)	(49)
Net amount recognized, before tax effect	\$ 909	\$ 1,070	\$ (68)	\$ (38)
Other changes in plan assets and benefit obligations recognized in Other Comprehensive Loss consist of:				
Net actuarial benefit	\$ (53)	\$ (81)	\$ (38)	\$ (10)
Amortization of accumulated net actuarial loss	(107)	(125)	(1)	—
Prior service (benefit) cost	(1)	3	—	(31)
Amortization of prior service (cost) benefit	—	(7)	9	9
Net amount recognized, before tax effect	\$ (161)	\$ (210)	\$ (30)	\$ (32)

⁽¹⁾ At December 31, 2022, the actuarial gains impacting the benefit obligation were primarily due to changes in the discount rate as well as the alternative interest cost method, and other changes including census data.

⁽²⁾ At December 31, 2022, the benefit obligation, fair value of plan assets, and funded status for U.S. pension plans were \$1,459, \$833, and \$(626), respectively. At December 31, 2021, the benefit obligation, fair value of plan assets, and funded status for U.S. pension plans were \$2,039, \$1,278, and \$(761), respectively.

Pension Plan Benefit Obligations

	Pension benefits	
	2022	2021
The projected benefit obligation and accumulated benefit obligation for all defined benefit pension plans were as follows:		
Projected benefit obligation	\$ 1,599	\$ 2,296
Accumulated benefit obligation	1,598	2,293
The aggregate projected benefit obligation and fair value of plan assets for pension plans with projected benefit obligations in excess of plan assets were as follows:		
Projected benefit obligation	1,482	1,982
Fair value of plan assets	833	1,193
The aggregate accumulated benefit obligation and fair value of plan assets for pension plans with accumulated benefit obligations in excess of plan assets were as follows:		
Accumulated benefit obligation	1,481	1,981
Fair value of plan assets	833	1,193

Components of Net Periodic Benefit Cost

For the year ended December 31,	Pension benefits ⁽¹⁾			Other postretirement benefits ⁽²⁾		
	2022	2021	2020	2022	2021	2020
Service cost	\$ 4	\$ 4	\$ 12	\$ 2	\$ 2	\$ 3
Interest cost	51	47	97	4	5	10
Expected return on plan assets	(80)	(90)	(136)	—	—	—
Recognized net actuarial loss	49	56	78	1	—	3
Amortization of prior service cost (benefit)	—	1	—	(9)	(9)	(6)
Settlements ⁽³⁾	58	69	76	—	—	—
Curtailments ⁽⁴⁾	—	6	—	—	—	(2)
Net periodic benefit cost ⁽⁵⁾	\$ 82	\$ 93	\$ 127	\$ (2)	\$ (2)	\$ 8
Discontinued operations	—	—	20	—	—	6
Net amount recognized in Statement of Consolidated Operations	\$ 82	\$ 93	\$ 107	\$ (2)	\$ (2)	\$ 2

⁽¹⁾ In 2022, 2021, and 2020, net periodic benefit cost for U.S. pension plans was \$79, \$61, and \$58, respectively.

⁽²⁾ In 2021 and 2020, net periodic benefit cost for other postretirement benefits reflects a reduction of less than \$1 and \$1, respectively, related to the recognition of the federal subsidy awarded under Medicare Part D.

⁽³⁾ In 2022, settlements were related to U.S. and U.K. lump sum benefit payments. In 2021, settlements were related to U.S. and U.K. actions including the purchase of group annuity contracts and lump sum benefit payments. In 2020, settlements were related to U.K. actions including lump sum benefit payments and the purchase of group annuity contracts as well as U.S. lump sum benefit payments. See [Note E](#) for further details.

⁽⁴⁾ In 2021, the curtailment was due to plan termination. In 2020, the curtailment was due to workforce reductions.

⁽⁵⁾ Service cost was included within Cost of goods sold, Selling, general administrative, and other expenses; curtailments and settlements were included in Restructuring and other charges; and all other cost components were recorded in Other expense, net in the Statement of Consolidated Operations.

Assumptions

Weighted average assumptions used to determine benefit obligations for pension and other postretirement benefit plans were as follows:

December 31,	2022	2021
Discount rate	5.40 %	2.70 %
Cash balance plan interest crediting rate	3.00 %	3.00 %

The U.S. discount rate is determined using a Company-specific yield curve model (above-median) developed with the assistance of an external actuary, while both the U.K. and Canada utilize models developed internally by their respective actuary. The cash flows of the plans' projected benefit obligations are discounted using a single equivalent rate derived from yields on high quality corporate bonds, which represent a broad diversification of issuers in various sectors, including finance and banking, industrials, transportation, and utilities, among others. The yield curve models parallel the plans' projected cash flows, which have a global average duration of 10 years. The underlying cash flows of the bonds included in the models exceed the cash flows needed to satisfy the Company's plans' obligations multiple times.

Benefit accruals for future compensation under the Company's major salaried and non-bargained hourly defined benefit pension plans have ceased. The rate of compensation increase no longer impacts the determination of the benefit obligation.

Weighted average assumptions used to determine net periodic benefit cost for pension and other postretirement benefit plans were as follows:

	2022	2021	2020
Discount rate to calculate service cost ⁽¹⁾	2.80 %	2.80 %	3.30 %
Discount rate to calculate interest cost ⁽¹⁾	2.50 %	2.10 %	2.70 %
Expected long-term rate of return on plan assets	6.70 %	6.20 %	6.00 %
Cash balance plan interest crediting rate	3.00 %	3.00 %	3.00 %

⁽¹⁾ In all periods presented, the respective global discount rates were used to determine net periodic benefit cost for most pension plans for the full annual period. The discount rates for certain plans were updated during 2022, 2021, and 2020 to reflect the remeasurement of these plans due to settlements and/or curtailments. The weighted-average rates reflecting these remeasurements does not significantly differ from the rates presented.

The expected long-term rate of return on plan assets ("EROA") is generally applied to a five-year market-related value of plan assets. The process used by management to develop this assumption is one that relies on a combination of historical asset return information and forward-looking returns by asset class. As it relates to historical asset return information, management focuses on various historical moving averages when developing this assumption. While consideration is given to recent performance and historical returns, the assumption represents a long-term, prospective return. Management also incorporates expected future returns on current and planned asset allocations using information from various external investment managers and consultants, as well as management's own judgment.

For 2023, management anticipates that approximately 7% will continue to be the expected long-term rate of return for global plan assets. EROA assumptions are developed by country. Annual changes in the weighted average EROA are impacted by the relative size of the assets by country.

For 2022, 2021, and 2020, the U.S. expected long-term rate of return used by management was based on the prevailing and planned strategic asset allocations, as well as estimates of future returns by asset class. These rates were within the respective range of the 20-year moving average of actual performance and the expected future return developed by asset class.

Assumed health care cost trend rates for U.S. other postretirement benefit plans were as follows:

	2022	2021	2020
Health care cost trend rate assumed for next year	5.50 %	5.50 %	5.50 %
Rate to which the cost trend rate gradually declines	4.50 %	4.50 %	4.50 %
Year that the rate reaches the rate at which it is assumed to remain	2025	2024	2023

The assumed health care cost trend rate is used to measure the expected cost of gross eligible charges covered by Howmet's other postretirement benefit plans. For 2023, a 5.50% trend rate will be used, reflecting management's best estimate of the change in future health care costs covered by the plans. The plans' actual annual health care cost trend experience over the past three years has ranged from 1.80% to 11.30%. Management does not believe this three-year range is indicative of expected increases for future health care costs over the long-term.

Plan Assets

Howmet’s pension plans’ investment policy at December 31, 2022 by asset class, were as follows:

Asset class	Policy range⁽¹⁾
Equities	20–55%
Fixed income	25–55%
Other investments	15–35%

⁽¹⁾ Policy range is for U.S. plan assets only, as both the U.K. and Canadian asset investment allocations are controlled by a third-party trustee with input from Howmet.

The principal objectives underlying the investment of the pension plans’ assets are to ensure that Howmet can properly fund benefit obligations as they become due under a broad range of potential economic and financial scenarios, maximize the long-term investment return with an acceptable level of risk based on such obligations, and broadly diversify investments across and within various asset classes to protect asset values against adverse movements. Specific objectives for long-term investment strategy include reducing the volatility of pension assets relative to pension liabilities, and attaining and maintaining a sufficiently funded status. The use of derivative instruments is permitted where appropriate and necessary for achieving overall investment policy objectives. The investment strategy uses long duration cash bonds and derivative instruments to offset a portion of the interest rate sensitivity of U.S. pension liabilities. Exposure to broad equity risk is decreased and diversified through investments in hedge funds, private equity, private credit, private real estate, high-yield bonds, global and emerging market debt, and global and emerging market equities. Investments are further diversified by strategy, asset class, geography, and sector to enhance returns and mitigate downside risk. A large number of external investment managers are used to gain broad exposure to the financial markets and to mitigate manager-concentration risk.

Investment practices comply with the requirements of the Employee Retirement Income Security Act (“ERISA”) and other applicable laws and regulations.

The following section describes the valuation methodologies used to measure the fair value of pension plan assets, including an indication of the level in the fair value hierarchy in which each type of asset is generally classified (see [Note S](#) for the definition of fair value and a description of the fair value hierarchy).

Equities. These securities consist of: (i) direct investments in the stock of publicly traded U.S. and non-U.S. companies that are valued based on the closing price reported in an active market on which the individual securities are traded (generally classified in Level 1); (ii) the plans’ share of commingled funds that are invested in the stock of publicly traded companies and are valued at the net asset value of shares held at December 31 (included in Level 1 and Level 2); and (iii) direct investments in long/short equity hedge funds and private equity (limited partnerships and venture capital partnerships) that are valued at net asset value.

Fixed income. These securities consist of: (i) U.S. government debt that are generally valued using quoted prices (included in Level 1); (ii) cash and cash equivalents invested in publicly-traded funds and are valued based on the closing price reported in an active market on which the individual securities are traded (generally classified in Level 1); (iii) publicly traded U.S. and non-U.S. fixed interest obligations (principally corporate bonds and debentures) and are valued through consultation and evaluation with brokers in the institutional market using quoted prices and other observable market data (included in Level 2); (iv) fixed income derivatives that are generally valued using industry standard models with market-based observable inputs (included in Level 2); and (v) cash and cash equivalents invested in institutional funds and are valued at net asset value.

Other investments. These investments include, among others: (i) real estate investment trusts that are valued based on the quoted prices and other observable market data (included in Level 2) and (ii) direct investments of discretionary and systematic macro hedge funds and private real estate (includes limited partnerships) and are valued at net asset value.

The fair value methods described above may not be indicative of net realizable value or reflective of future fair values. Additionally, while Howmet believes the valuation methods used by the plans’ trustees are appropriate and consistent with other market participants, the use of different methodologies or assumptions to determine the fair value of certain financial instruments could result in a different fair value measurement at the reporting date.

The following table presents the fair value of pension plan assets classified under the appropriate level of the fair value hierarchy or net asset value:

December 31, 2022	Level 1	Level 2	Net Asset Value	Total
Equities:				
Equity securities	\$ —	\$ 133	\$ 283	\$ 416
Long/short equity hedge funds	—	—	18	18
Private equity	—	—	107	107
	\$ —	\$ 133	\$ 408	\$ 541
Fixed income:				
Intermediate and long duration government/credit	\$ 107	\$ 148	\$ —	\$ 255
Other	6	59	—	65
	\$ 113	\$ 207	\$ —	\$ 320
Other investments:				
Real estate	\$ —	\$ 3	\$ 62	\$ 65
Discretionary and systematic macro hedge funds	—	—	29	29
Other	—	—	7	7
	\$ —	\$ 3	\$ 98	\$ 101
Net plan assets⁽¹⁾	\$ 113	\$ 343	\$ 506	\$ 962
December 31, 2021				
	Level 1	Level 2	Net Asset Value	Total
Equities:				
Equity securities	\$ 2	\$ 197	\$ 409	\$ 608
Long/short equity hedge funds	—	—	60	60
Private equity	—	—	126	126
	\$ 2	\$ 197	\$ 595	\$ 794
Fixed income:				
Intermediate and long duration government/credit	\$ 124	\$ 328	\$ —	\$ 452
Other	15	119	—	134
	\$ 139	\$ 447	\$ —	\$ 586
Other investments:				
Real estate	\$ —	\$ —	\$ 64	\$ 64
Discretionary and systematic macro hedge funds	—	—	47	47
Other	—	—	23	23
	\$ —	\$ —	\$ 134	\$ 134
Net plan assets⁽²⁾	\$ 141	\$ 644	\$ 729	\$ 1,514

(1) As of December 31, 2022, the total fair value of pension plans' assets excludes a net receivable of \$8, which represents securities purchased and sold but not yet settled plus interest and dividends earned on various investments.

(2) As of December 31, 2021, the total fair value of pension plans' assets excludes a net receivable of \$17, which represents securities purchased and sold but not yet settled plus interest and dividends earned on various investments.

Funding and Cash Flows

It is Howmet's policy to fund amounts for pension plans sufficient to meet the minimum requirements set forth in the benefits laws and tax laws of the applicable country. Periodically, Howmet contributes additional amounts as deemed appropriate. In 2022 and 2021, cash contributions to Howmet's pension plans were \$43 and \$96, respectively. The 2021 cash contributions include \$12 that was contributed to the Company's U.S. plans in excess of the minimum required under ERISA.

The contributions to the Company's pension plans in 2023 are estimated to be \$45 (of which \$35 is for U.S. plans).

Due to the plan administration change of certain Medicare-eligible prescription drug benefits to an Employer Group Waiver Plan with a wrap-around secondary plan in 2021, there will be no direct Medicare Part D subsidy receipts going forward. Benefit payments expected to be paid to pension and other postretirement benefit plans' participants are as follows utilizing the current assumptions outlined above:

For the year ended December 31,	Pension benefits paid	Other post- retirement benefits
2023	\$ 144	\$ 11
2024	129	11
2025	128	11
2026	126	11
2027	125	10
2028 - 2032	581	48
	\$ 1,233	\$ 102

Defined Contribution Plans

Howmet sponsors savings and investment plans in various countries, primarily in the U.S. Howmet's contributions and expenses related to these plans were \$76, \$66, and \$73 in 2022, 2021, and 2020, respectively. U.S. employees may contribute a portion of their compensation to the plans, and Howmet matches a portion of these contributions in equivalent form of the investments elected by the employee. Additionally, for certain U.S. employees, Howmet makes a contribution of either a percentage of applicable eligible compensation or per hour worked.

I. Income Taxes

The components of income from continuing operations before income taxes were as follows:

For the year ended December 31,	2022	2021	2020
United States	\$ 287	\$ 28	\$ 84
Foreign	319	296	87
Total	\$ 606	\$ 324	\$ 171

The provision for income taxes consisted of the following:

For the year ended December 31,	2022	2021	2020
Current:			
Federal ⁽¹⁾	\$ 3	\$ (9)	\$ (2)
Foreign	53	39	2
State and local	—	(2)	(2)
	<u>56</u>	<u>28</u>	<u>(2)</u>
Deferred:			
Federal	71	22	(67)
Foreign	5	11	11
State and local	5	5	18
	<u>81</u>	<u>38</u>	<u>(38)</u>
Total	<u>\$ 137</u>	<u>\$ 66</u>	<u>\$ (40)</u>

⁽¹⁾ Includes U.S. taxes related to foreign income.

A reconciliation of the U.S. federal statutory rate to Howmet's effective tax rate was as follows (the effective tax rate for 2022 and 2021 was a provision on income and for 2020 was a benefit on income):

For the year ended December 31,	2022	2021	2020
U.S. federal statutory rate	21.0 %	21.0 %	21.0 %
Foreign tax rate differential	0.1	(0.7)	(1.2)
U.S. and residual tax on foreign earnings ⁽¹⁾	1.2	6.5	5.6
U.S. state and local taxes	0.7	1.0	2.2
Federal cost of state tax	(0.2)	(0.3)	(2.0)
Permanent differences related to asset disposals and items included in restructuring and other charges	—	(0.3)	6.8
Non-deductible officer compensation	1.2	1.6	3.5
Statutory tax rate and law changes ⁽²⁾	0.1	1.0	(15.9)
Tax holidays	(0.5)	(0.4)	(0.4)
Tax credits ⁽³⁾	(0.9)	(10.4)	(0.4)
Changes in valuation allowances ⁽⁴⁾	1.4	5.1	74.8
Changes in uncertain tax positions ⁽⁵⁾	—	—	(116.9)
Excess benefit for stock compensation	(0.8)	(0.3)	(0.7)
Prior year tax adjustments	(0.1)	(3.7)	(1.7)
Other	(0.6)	0.3	1.9
Effective tax rate	<u>22.6 %</u>	<u>20.4 %</u>	<u>(23.4)%</u>

⁽¹⁾ It is Howmet's policy to treat taxes due from future inclusions in U.S. taxable income related to GILTI as a current period expense when incurred.

⁽²⁾ In 2020, final regulations were issued that provided an election to exclude from GILTI any foreign earnings subject to a local country tax rate of at least 90% of the U.S. tax rate. The Company recorded a \$30 benefit related to this tax law change.

⁽³⁾ In 2021, a \$32 benefit for income tax credits related to development incentives in Hungary was recognized.

⁽⁴⁾ In 2020, a \$104 valuation allowance was recorded related to deferred tax assets that were previously subject to a reserve that was otherwise released in 2020 as a result of a favorable Spanish tax case decision.

⁽⁵⁾ In 2020, the Company released a \$64 reserve liability and a \$104 reserve recorded as a contra balance against deferred tax assets as a result of a favorable Spanish tax case decision. A \$30 benefit related to a previously uncertain U.S. tax position was also recognized in 2020.

The components of net deferred tax assets and liabilities were as follows:

December 31,	2022		2021	
	Deferred tax assets	Deferred tax liabilities	Deferred tax assets	Deferred tax liabilities
Depreciation	\$ 11	\$ 492	\$ 8	\$ 538
Employee benefits	232	1	300	3
Loss provisions	26	1	20	1
Deferred income/expense	62	1,161	50	1,098
Interest	99	—	105	—
Tax loss carryforwards	2,955	—	3,226	—
Tax credit carryforwards	268	—	358	—
Other	6	6	10	7
	\$ 3,659	\$ 1,661	\$ 4,077	\$ 1,647
Valuation allowance	(1,965)	—	(2,279)	—
	\$ 1,694	\$ 1,661	\$ 1,798	\$ 1,647

The following table details the expiration periods of the deferred tax assets presented above:

December 31, 2022	Expires within 10 years	Expires within 11-20 years	No Expiration ⁽¹⁾	Other ⁽²⁾	Total
Tax loss carryforwards	\$ 362	\$ 533	\$ 2,060	\$ —	\$ 2,955
Tax credit carryforwards	196	59	13	—	268
Other ⁽³⁾	—	—	380	56	436
Valuation allowance	(522)	(234)	(1,204)	(5)	(1,965)
	\$ 36	\$ 358	\$ 1,249	\$ 51	\$ 1,694

⁽¹⁾ Deferred tax assets with no expiration may still have annual limitations on utilization.

⁽²⁾ Other represents deferred tax assets whose expiration is dependent upon the reversal of the underlying temporary difference.

⁽³⁾ A substantial amount of Other deferred tax assets relates to employee benefits that will become deductible for tax purposes in jurisdictions with unlimited expiration over an extended period of time as contributions are made to employee benefit plans and payments are made to retirees.

The total deferred tax asset (net of valuation allowance) is supported by projections of future taxable income exclusive of reversing temporary differences (4%), and taxable temporary differences that reverse within the carryforward period (96%).

Valuation allowances are recorded to reduce deferred tax assets when it is more likely than not (greater than 50%) that a tax benefit will not be realized. In evaluating the need for a valuation allowance, management considers all potential sources of taxable income, including income available in carryback periods, future reversals of taxable temporary differences, projections of taxable income, and income from tax planning strategies, as well as all available positive and negative evidence. Positive evidence includes factors such as a history of profitable operations, projections of future profitability within the carryforward period, including from tax planning strategies, and Howmet's experience with similar operations. Existing favorable contracts and the ability to sell products into established markets are additional positive evidence. Negative evidence includes items such as cumulative losses, projections of future losses, or carryforward periods that are not long enough to allow for the utilization of a deferred tax asset based on existing projections of income. Deferred tax assets for which no valuation allowance is recorded may not be realized upon changes in facts and circumstances, resulting in a future charge to establish a valuation allowance. Existing valuation allowances are re-examined under the same standards of positive and negative evidence. If it is determined that it is more likely than not that a deferred tax asset will be realized, the appropriate amount of the valuation allowance, if any, is released. Deferred tax assets and liabilities are also remeasured to reflect changes in underlying tax rates due to law changes and the granting and lapse of tax holidays.

It is Howmet's policy to apply a tax law ordering approach when considering the need for a valuation allowance on net operating losses expected to offset GILTI income inclusions. Under this approach, reductions in cash tax savings are not considered as part of the valuation allowance assessment. Instead, future GILTI inclusions are considered a source of taxable income that support the realizability of deferred tax assets.

Howmet’s foreign tax credits in the U.S. have a 10-year carryforward period with expirations ranging from 2023 to 2027 (as of December 31, 2022). Valuation allowances were initially established in prior years on a portion of the foreign tax credit carryforwards, primarily due to insufficient foreign source income to allow for full utilization of the credits within the expiration period. Foreign tax credits of \$68 and \$22 expired at the end of 2022 and 2021, respectively, resulting in a corresponding decrease to the valuation allowance. In 2022, the Company decided to increase the valuation allowance by \$12 in order to fully reserve the foreign tax credit carryover after weighing all available evidence including foreign source income projections. The valuation allowance was reduced in 2021 by \$9 as a result of updated U.S. regulatory guidance concerning the utilization of foreign tax credits in connection with the one-time transition tax on the deemed repatriation of previously non-taxed post-1986 earnings and profits of certain foreign subsidiaries enacted as part of the 2017 Act, and by \$4 as a result of a corresponding reduction in the deferred tax asset related to suspended foreign tax credits. At December 31, 2022, the cumulative amount of the valuation allowance was \$124. The need for this valuation allowance will be reassessed on a continuous basis in future periods and, as a result, the allowance may increase or decrease based on changes in facts and circumstances.

During 2021, the Company concluded that it would not pursue a deduction related to a capital investment for which a deferred tax asset of \$9 and offsetting valuation allowance had previously been recorded. As such, both the deferred tax asset and the valuation allowance were eliminated. The need for valuation allowances against other capital investments will be reassessed on a continuing basis. As of December 31, 2022, there is no valuation allowance recorded related to capital investments.

The Company recorded a net \$1 decrease, \$3 increase, and \$20 increase to U.S. state valuation allowances in 2022, 2021, and 2020, respectively. After weighing all available positive and negative evidence, the Company determined the adjustments based on the underlying net deferred tax assets that were more likely than not realizable based on projected taxable income. Changes in fully reserved U.S. state tax losses, credits and other deferred tax assets resulting from expirations, audit adjustments, tax rate, and tax law changes also resulted in a corresponding net \$142 decrease, \$20 increase, and \$58 decrease in the valuation allowance in 2022, 2021, and 2020, respectively. Valuation allowances of \$489 remain against state deferred tax assets expected to expire before utilization. The need for valuation allowances against state deferred tax assets will be reassessed on a continuous basis in future periods and, as a result, the allowance may increase or decrease based on changes in facts and circumstances.

In 2022, after weighing all available evidence, the Company released a \$6 valuation allowance in the U.K. related to interest deduction carryforwards. In 2021, after weighing all available evidence, the Company recognized a discrete income tax cost to establish a valuation allowance of \$8 in Switzerland. In 2020, the Company increased a valuation allowance by \$104 as a result of releasing a tax reserve following a favorable Spanish tax case decision. The need for valuation allowances will be reassessed by entity and by jurisdiction on a continuous basis in future periods and, as a result, the allowances may increase or decrease based on changes in facts and circumstances.

The following table details the changes in the valuation allowance:

December 31,	2022	2021	2020
Balance at beginning of year	\$ 2,279	\$ 2,307	\$ 2,121
Increase to allowance	40	113	136
Release of allowance	(154)	(94)	(50)
Tax apportionment, tax rate and tax law changes	(110)	63	(23)
Foreign currency translation	(90)	(110)	123
Balance at end of year	<u>\$ 1,965</u>	<u>\$ 2,279</u>	<u>\$ 2,307</u>

Foreign U.S. GAAP earnings that have not otherwise been subject to U.S. tax, will generally be exempt from future U.S. tax under the 2017 Act when distributed. Such distributions, as well as distributions of previously taxed foreign earnings, could potentially be subject to U.S. state tax in certain states, and foreign withholding taxes. Foreign currency gains/losses related to the translation of previously taxed earnings from functional currency to U.S. dollars could also be subject to U.S. tax when distributed. Howmet would expect the potential withholding tax, U.S. state tax, and U.S. capital gains tax impacts to be immaterial and the potential deferred tax liability associated with future currency gains to be impracticable to determine.

Howmet and its subsidiaries file income tax returns in the U.S. federal jurisdiction and various states and foreign jurisdictions. With a few minor exceptions, Howmet is no longer subject to income tax examinations by tax authorities for years prior to 2014. All U.S. tax years prior to 2022 have been audited by the Internal Revenue Service. Various state and foreign jurisdiction tax authorities are in the process of examining the Company’s income tax returns for various tax years through 2021. The Company had net cash income tax payments of \$50 and \$53 in 2022 and 2021, respectively, and net cash refunds of \$33 in 2020.

A reconciliation of the beginning and ending amount of unrecognized tax benefits (excluding interest and penalties) was as follows:

December 31,	2022	2021	2020
Balance at beginning of year	\$ 2	\$ 2	\$ 176
Reductions for tax positions of prior years	—	—	(182)
Settlements with tax authorities	—	—	(1)
Foreign currency translation	—	—	9
Balance at end of year	<u>\$ 2</u>	<u>\$ 2</u>	<u>\$ 2</u>

For all periods presented, a portion of the balance pertains to state tax liabilities, which are presented before any offset for federal tax benefits. The effect of unrecognized tax benefits, if recorded, that would impact the annual effective tax rate for 2022, 2021, and 2020 would be approximately less than 1%, 1%, and 1%, respectively, of pre-tax book income. Howmet does not anticipate that changes in its unrecognized tax benefits will have a material impact on the Statement of Consolidated Operations during 2023.

It is Howmet's policy to recognize interest and penalties related to income taxes as a component of the Provision for income taxes in the Statement of Consolidated Operations. Howmet recognized interest of less than \$1, less than \$1, and \$2 in 2022, 2021, and 2020, respectively. Due to the expiration of the statute of limitations, settlements with tax authorities, reductions in prior accruals, and refunded overpayments, Howmet recognized interest income of less than \$1, \$3, and \$25 in 2022, 2021, and 2020, respectively. As of December 31, 2022, 2021, and 2020, the amount accrued for the payment of interest and penalties was less than \$1, less than \$1, and \$2, respectively.

J. Preferred and Common Stock

Preferred Stock. Howmet has two classes of preferred stock: \$3.75 Cumulative Preferred Stock ("Class A Preferred Stock") and Class B Serial Preferred Stock. Class A Preferred Stock has 660,000 shares authorized at a par value of \$100 per share with an annual \$3.75 cumulative dividend preference per share. There were 546,024 shares of Class A Preferred Stock outstanding at both December 31, 2022 and 2021. Class B Serial Preferred Stock has 10,000,000 shares authorized at a par value of \$1 per share. There were no shares of Class B Serial Preferred Stock outstanding at both December 31, 2022 and 2021.

Common Stock. At December 31, 2022, there were 600,000,000 shares authorized and 412,155,057 shares issued and outstanding. Dividends paid were \$0.10 per share in 2022 (\$0.02 per share in each of the first, second, and third quarters of 2022 and \$0.04 per share in the fourth quarter of 2022), \$0.04 per share in 2021 (\$0.02 per share in each of the third and fourth quarters of 2021), and \$0.02 per share in 2020 (all in the first quarter of 2020).

As of December 31, 2022, 47 million shares of common stock were reserved for issuance under Howmet's stock-based compensation plans. As of December 31, 2022, 29 million shares remain available for issuance. Howmet issues new shares to satisfy the exercise of stock options and the conversion of stock awards.

Common Stock Outstanding and Share Activity (number of shares)

Balance at December 31, 2019	432,855,183
Issued for stock-based compensation plans	3,896,119
Repurchase and retirement of common stock	(3,844,925)
Balance at December 31, 2020	432,906,377
Issued for stock-based compensation plans	2,195,681
Repurchase and retirement of common stock	(13,410,146)
Balance at December 31, 2021	421,691,912
Issued for stock-based compensation plans	1,819,651
Repurchase and retirement of common stock	(11,356,506)
Balance at December 31, 2022	412,155,057

The following table provides details for share repurchases during 2022, 2021, and 2020:

	Number of shares	Average price per share ⁽¹⁾	Total
Q1 2022 open market repurchase	5,147,307	\$34.00	\$175
Q2 2022 open market repurchase	1,770,271	\$33.89	\$60
Q3 2022 open market repurchase	2,764,846	\$36.17	\$100
Q4 2022 open market repurchase	1,674,082	\$38.83	\$65
2022 Share repurchase total	11,356,506	\$35.22	\$400
Q2 2021 accelerated share repurchase	5,878,791	\$34.02	\$200
Q3 2021 open market repurchase	769,274	\$32.50	\$25
Q4 2021 open market repurchase	6,762,081	\$30.32	\$205
2021 Share repurchase total	13,410,146	\$32.07	\$430
Q3 2020 open market repurchase	2,907,094	\$17.36	\$51
Q4 2020 open market repurchase	937,831	\$23.99	\$22
2020 Share repurchase total	3,844,925	\$18.98	\$73

⁽¹⁾ Excludes commissions cost.

The total value of shares repurchased during 2022, 2021, and 2020 were \$400, \$430, and \$73, respectively. All of the shares repurchased during 2022, 2021, and 2020 were immediately retired. After giving effect to the share repurchases made through December 31, 2022, approximately \$947 remained available for share repurchases as of January 1, 2023 under the prior authorizations by the Board. Under the Company's share repurchase programs (the "Share Repurchase Programs"), the Company may repurchase shares by means of trading plans established from time to time in accordance with Rule 10b5-1 under the Securities Exchange Act of 1934, as amended, block trades, private transactions, open market repurchases and/or accelerated share repurchase agreements or other derivative transactions. There is no stated expiration for the Share Repurchase Programs. Under its Share Repurchase Programs, the Company may repurchase shares from time to time, in amounts, at prices, and at such times as the Company deems appropriate, subject to market conditions, legal requirements and other considerations. The Company is not obligated to repurchase any specific number of shares or to do so at any particular time, and the Share Repurchase Programs may be suspended, modified or terminated at any time without prior notice.

Stock-Based Compensation

Howmet has a stock-based compensation plan under which stock options and/or restricted stock unit awards are granted, generally, in the first half of each year to eligible employees. Stock options are granted at the closing market price of Howmet's common stock on the date of grant and typically vest over a three-year service period (1/3 each year) with a ten-year contractual term. Restricted stock unit awards typically vest over a three-year service period from the date of grant. As part of Howmet's stock-based compensation plan design, individuals who are retirement-eligible have a six-month requisite service period in the year of grant. Certain of the restricted stock unit awards include performance and market conditions and are granted to certain eligible employees. In 2020, performance stock awards were granted to a senior executive that vest either based on achievement of the Arconic Inc. Separation Transaction (see [Note C](#) for further details) or the achievement of certain stock price thresholds. For performance stock awards granted in 2022, 2021, and for annual performance awards granted in 2020, the final number of shares earned will be based on Howmet's achievement of profitability targets over the respective performance periods and will be earned at the end of the third year. Additionally, the annual 2022, 2021, and 2020 performance stock awards will be scaled by a total shareholder return ("TSR") multiplier, which depends upon relative performance against the TSRs of a group of peer companies.

In conjunction with their employment agreements, certain current and former executives were granted cash bonus awards based on the achievement of certain stock price thresholds. These awards are liability classified and were marked-to-market each quarter using a Monte Carlo simulation. The stock price thresholds were fully reached. The cash payment of \$23 occurred in 2021 in accordance with the terms of the agreements.

In 2022, 2021, and 2020, Howmet recognized stock-based compensation expense of \$54 (\$49 after-tax), \$40 (\$36 after-tax), and \$46 (\$42 after-tax), respectively. Senior executive performance awards granted in April 2020 were modified in June 2020, resulting in incremental compensation expense of \$12, which is amortized over the remaining service period ending April 1, 2023. Additionally, the effect of the Arconic Inc. Separation Transaction was a modification of the original stock options and restricted stock award units. The modifications were designed with the intention that the intrinsic value of the stock option or stock award were the same both previous to and after the adjustments. An immaterial charge was recorded to Restructuring and other charges related to the modification.

All stock-based compensation expense recorded in 2022 and 2021 relates to restricted stock unit awards. Cash bonus awards of \$2 were recorded in 2020. Of the remaining stock-based compensation expense in 2020, more than 95% relates to restricted stock unit awards. No stock-based compensation expense was capitalized in any of those years. Stock-based compensation expense was reduced by \$2 in 2021 for certain executive pre-vest cancellations, which were recorded in Restructuring and other charges within the Statement of Consolidated Operations. At December 31, 2022, there was \$35 (pre-tax) of unrecognized compensation expense related to non-vested restricted stock unit award grants. This expense is expected to be recognized over a weighted average period of 1.3 years.

Stock-based compensation expense is based on the grant date fair value of the applicable equity grant. For restricted stock unit awards, the fair value is equivalent to the closing market price of Howmet's common stock on the date of grant. The weighted average grant date fair value per share of the 2022 and 2021 performance stock awards with a market condition scaled by a TSR multiplier is \$44.44 and \$43.41, respectively. The weighted average grant date fair value per share of the April 2020 senior executive performance stock awards with a market condition (achievement of certain stock price thresholds) is \$2.57. The 2022, 2021, and 2020 performance awards were valued using a Monte Carlo model. A Monte Carlo simulation uses assumptions of stock price behavior to estimate the probability of satisfying market conditions and the resulting fair value of the award. The risk-free interest rate (2.0% in 2022, 0.2% in 2021, and in 0.3% in 2020) was based on a yield curve of interest rates at the time of the grant based on the remaining performance period. In 2022, 2021, and 2020, volatility of 39.4%, 56.0%, and 48.3%, respectively, was estimated using Howmet's historical volatility in 2022 and a blended rate of Howmet's historical volatility and a peer-based volatility due to the Arconic Inc. Separation Transaction and the related changes in the nature of the business in 2021 and 2020. Stock options were last granted in 2018.

The activity for stock options and stock awards during 2022 was as follows (options and awards in millions):

	Stock options		Stock awards	
	Number of options	Weighted average exercise price per option	Number of awards	Weighted average FMV per award
Outstanding, December 31, 2021	2	\$ 23.64	8	\$ 16.19
Granted	—	—	1	35.79
Exercised	(1)	22.75	—	—
Converted	—	—	(2)	16.35
Expired or forfeited	—	33.61	(1)	24.92
Outstanding, December 31, 2022	1	\$ 23.86	6	\$ 17.77

As of December 31, 2022, the stock options outstanding had a weighted average remaining contractual life of 2.1 years and a total intrinsic value of \$15. All of the stock options outstanding were fully vested and exercisable. In 2022, 2021, and 2020, the cash received from stock option exercises was \$16, \$22, and \$33, respectively, and the total tax benefit realized from these exercises was \$2, \$2, and \$3, respectively. The total intrinsic value of stock options exercised during 2022, 2021, and 2020 was \$10, \$10, and \$14, respectively. The total intrinsic value of stock awards converted during 2022, 2021, and 2020 was \$61, \$55, and \$104, respectively.

K. Earnings Per Share

Basic earnings per share (“EPS”) amounts are computed by dividing earnings, after the deduction of preferred stock dividends declared, by the average number of common shares outstanding. Diluted EPS amounts assume the issuance of common stock for all potentially dilutive share equivalents outstanding.

The information used to compute basic and diluted EPS attributable to Howmet common shareholders was as follows (shares in millions):

For the year ended December 31,	2022	2021	2020
Net income from continuing operations	\$ 469	\$ 258	\$ 211
Less: preferred stock dividends declared	2	2	2
Net income from continuing operations attributable to common shareholders	467	256	209
Income from discontinued operations	—	—	50
Net income attributable to common shareholders - basic and diluted	\$ 467	\$ 256	\$ 259
Average shares outstanding - basic	416	430	435
Effect of dilutive securities:			
Stock and performance awards	5	5	4
Average shares outstanding - diluted	421	435	439

Common stock outstanding at December 31, 2022 and 2021 was approximately 412 million and 422 million, respectively.

The 14 million decrease in average shares outstanding (basic) for the year ended December 31, 2022 compared to the year ended December 31, 2021 was primarily due to the 11 million shares repurchased during 2022. As average shares outstanding are used in the calculation of both basic and diluted EPS, the full impact of share repurchases is not realized in EPS in the year of repurchase.

The following shares were excluded from the calculation of average shares outstanding – diluted as their effect was anti-dilutive (shares in millions):

For the year ended December 31,	2022	2021	2020
Stock options	—	—	1

L. Accumulated Other Comprehensive Loss

The following table details the activity of the three components that comprise Accumulated other comprehensive loss:

	2022	2021	2020
Pension and other postretirement benefits (H)			
Balance at beginning of period	\$ (799)	\$ (980)	\$ (2,732)
Other comprehensive income (loss):			
Unrecognized net actuarial gain (loss) and prior service cost/benefit	87	111	(211)
Tax (expense) benefit	(18)	(26)	48
Total Other comprehensive income (loss) before reclassifications, net of tax	69	85	(163)
Amortization of net actuarial loss and prior service cost ⁽¹⁾	99	123	149
Tax expense ⁽²⁾	(22)	(27)	(32)
Total amount reclassified from Accumulated other comprehensive loss, net of tax ⁽³⁾	77	96	117
Total Other comprehensive income (loss)	146	181	(46)
Transfer to Arconic Corporation	—	—	1,798
Balance at end of period	<u>\$ (653)</u>	<u>\$ (799)</u>	<u>\$ (980)</u>
Foreign currency translation			
Balance at beginning of period	\$ (1,062)	\$ (966)	\$ (596)
Other comprehensive (loss) income ⁽⁴⁾	(131)	(96)	58
Transfer to Arconic Corporation	—	—	(428)
Balance at end of period	<u>\$ (1,193)</u>	<u>\$ (1,062)</u>	<u>\$ (966)</u>
Cash flow hedges			
Balance at beginning of period	\$ (2)	\$ 3	\$ (1)
Other comprehensive (loss) income:			
Net change from periodic revaluations	(8)	20	—
Tax benefit (expense)	2	(4)	—
Total Other comprehensive (loss) income before reclassifications, net of tax	(6)	16	—
Net amount reclassified to earnings	17	(26)	6
Tax (expense) benefit ⁽²⁾	(4)	5	(2)
Total amount reclassified from Accumulated other comprehensive income (loss), net of tax ⁽³⁾	13	(21)	4
Total Other comprehensive income (loss)	7	(5)	4
Balance at end of period	<u>\$ 5</u>	<u>\$ (2)</u>	<u>\$ 3</u>
Accumulated other comprehensive loss balance at end of period	<u>\$ (1,841)</u>	<u>\$ (1,863)</u>	<u>\$ (1,943)</u>

⁽¹⁾ These amounts were recorded in Other expense, net (see [Note G](#)) and Restructuring and other charges (see [Note E](#)) in the Statement of Consolidated Operations.

⁽²⁾ These amounts were included in Provision (benefit) for income taxes (see [Note I](#)) in the Statement of Consolidated Operations.

⁽³⁾ A positive amount indicates a corresponding charge to earnings and a negative amount indicates a corresponding benefit to earnings.

⁽⁴⁾ In all periods presented, no amounts were reclassified to earnings.

M. Receivables**Sale of Receivables Programs**

The Company maintains an accounts receivables securitization arrangement through a wholly-owned special purpose entity (“SPE”). The Company previously had a second arrangement which terminated on August 30, 2021. The net cash funding from the sale of accounts receivable was neither a use of cash nor a source of cash during 2022 or 2021.

The terminated arrangement was with financial institutions to sell certain customer receivables without recourse on a revolving basis. The Company had \$44 net cash repayments (\$41 in draws and \$85 in repayments) in 2021 in connection with this arrangement. The total cash receipts from both customer payments on sold receivables (which were cash receipts on the underlying trade receivables that had been previously sold) and net cash repayments under the program were presented as cash receipts from sold receivables within investing activities in the Statement of Consolidated Cash Flows in 2021.

The current accounts receivables securitization arrangement is one in which the Company, through an SPE, has a receivables purchase agreement (the “Receivables Purchase Agreement”) such that the SPE may sell certain receivables to financial institutions until the earlier of August 30, 2024 or a termination event. The Receivables Purchase Agreement also contains customary representations and warranties, as well as affirmative and negative covenants. Pursuant to the Receivables Purchase Agreement, the Company does not maintain effective control over the transferred receivables, and therefore accounts for these transfers as sales of receivables. This accounts receivable securitization arrangement totaled \$325 at both December 31, 2022 and December 31, 2021 of which \$250 was drawn as of December 31, 2022 and December 31, 2021. As collateral against the sold receivables, the SPE maintains a certain level of unsold receivables, which were \$190 and \$79 at December 31, 2022 and December 31, 2021, respectively.

The Company sold \$1,799 of its receivables without recourse and received cash funding under this program during 2022, resulting in derecognition of the receivables from the Company’s Consolidated Balance Sheet. Costs associated with the sales of receivables are reflected in the Company’s Statement of Consolidated Operations for the periods in which the sales occur. Cash receipts from sold receivables under the Receivables Purchase Agreement are presented within operating activities in the Statement of Consolidated Cash Flows.

Other Customer Receivable Sales

In 2022, the Company sold \$474 of certain customers’ receivables in exchange for cash (of which \$126 was outstanding from customers at December 31, 2022), the proceeds from which are presented in changes in receivables within operating activities in the Statement of Consolidated Cash Flows.

In 2021, the Company sold \$368 of certain customers’ receivables in exchange for cash (of which \$109 was outstanding from customers at December 31, 2021), the proceeds from which are presented in changes in receivables within operating activities in the Statement of Consolidated Cash Flows.

N. Inventories

December 31,	2022	2021
Finished goods	\$ 490	\$ 478
Work-in-process	748	631
Purchased raw materials	317	256
Operating supplies	54	37
Total inventories	\$ 1,609	\$ 1,402

At December 31, 2022 and 2021, the portion of total inventories valued on a LIFO basis was \$441 and \$331, respectively. If valued on an average-cost basis, total inventories would have been \$220 and \$192 higher at December 31, 2022 and 2021, respectively. During 2022 and 2020, reductions in LIFO inventory quantities caused partial liquidations of LIFO inventory layers. These liquidations resulted in the recognition of expense of less than \$1 in 2022 and 2020. In 2021, we did not have any LIFO inventory layer liquidations.

O. Properties, Plants, and Equipment, Net

	December 31, 2022	December 31, 2021
Land and land rights ⁽¹⁾	\$ 84	\$ 91
Structures ⁽¹⁾	986	1,034
Machinery and equipment	3,941	3,932
	5,011	5,057
Less: accumulated depreciation and amortization ⁽¹⁾	2,858	2,772
	2,153	2,285
Construction work-in-progress	179	182
Properties, plants, and equipment, net	<u>\$ 2,332</u>	<u>\$ 2,467</u>

⁽¹⁾ In the first quarter of 2022, the Company entered into an agreement to sell the corporate headquarters in Pittsburgh, PA. The proceeds from the sale of the corporate headquarters, which closed in June 2022, were \$44, excluding \$3 of transaction costs, and the carrying value at the time of sale was \$41. A loss of less than \$1 was recorded in Restructuring and other charges in the Statement of Consolidated Operations upon finalization of the sale in the second quarter of 2022. The Company entered into a 12-year lease with the purchaser for a portion of the property.

Depreciation expense related to Properties, plants, and equipment recorded in Provision for depreciation and amortization in the Statement of Consolidated Operations was \$227, \$232, and \$236 for the years ended December 31, 2022, 2021, and 2020, respectively.

P. Goodwill and Other Intangible Assets

The following table details the changes in the carrying amount of goodwill:

	Engine Products	Fastening Systems	Engineered Structures	Forged Wheels	Total
Balances at December 31, 2020					
Goodwill	\$ 2,890	\$ 1,620	\$ 306	\$ 7	\$ 4,823
Accumulated impairment losses	(719)	—	(2)	—	(721)
Goodwill, net	<u>2,171</u>	<u>1,620</u>	<u>304</u>	<u>7</u>	<u>4,102</u>
Impairment (See Note U)	—	(4)	—	—	(4)
Translation and other	(22)	(9)	—	—	(31)
Balances at December 31, 2021					
Goodwill	2,868	1,611	306	7	4,792
Accumulated impairment losses	(719)	(4)	(2)	—	(725)
Goodwill, net	<u>2,149</u>	<u>1,607</u>	<u>304</u>	<u>7</u>	<u>4,067</u>
Translation and other	(38)	(16)	—	—	(54)
Balances at December 31, 2022					
Goodwill	2,830	1,595	306	7	4,738
Accumulated impairment losses	(719)	(4)	(2)	—	(725)
Goodwill, net	<u>\$ 2,111</u>	<u>\$ 1,591</u>	<u>\$ 304</u>	<u>\$ 7</u>	<u>\$ 4,013</u>

During the 2022 annual review of goodwill in the fourth quarter, management elected to perform qualitative assessments on the Engine Products and Forged Wheels reporting units and performed quantitative impairment tests on the Engineered Structures and Fastening Systems reporting units. The estimated fair values for the Engineered Structures and Fastening Systems reporting units exceeded their respective carrying values by approximately 40%; thus, there were no goodwill impairments. Howmet uses a discounted cash flow (“DCF”) model to estimate the current fair value of the reporting unit, which is compared to its carrying value, when testing for impairment. Management believes forecasted cash flows are the best indicator of such fair value. A number of significant assumptions and estimates are involved in the application of the DCF model to forecast operating cash flows, including sales growth, production costs, capital spending, and discount rate. Assumptions can vary among the reporting units. Cash flow forecasts are generally based on approved business unit operating plans for the early years and historical relationships in later years. The WACC rate for the individual reporting units is estimated with the assistance of valuation experts. The annual goodwill impairment tests in the fourth quarters of 2022, 2021, and 2020 indicated that goodwill was not

impaired for any of the Company's reporting units. If actual results or external market factors decline significantly from management's estimates, future goodwill impairment charges (or the amount by which the carrying amount exceeds the reporting unit's fair value without exceeding the total amount of goodwill allocated to that reporting unit) may be necessary and could be material.

During the first quarter of 2020, we performed a qualitative impairment test of our reporting units as a result of these macroeconomic factors, including Howmet's market capitalization declining significantly compared to the fourth quarter of 2019, equity value of our peer group companies and the overall U.S. stock market significant declines amid market volatility and the onset of the COVID-19 pandemic and its impact on the aerospace and commercial transportation industries. As a result of this qualitative assessment, the Company performed a quantitative impairment test for the Engineered Structures reporting unit in the first quarter of 2020 and concluded that although the margin between the fair value of the reporting unit and carrying value had declined from 60% to approximately 15%, it was not impaired. Since the first quarter of 2020, there have been no indicators of impairment identified for the Engineered Structures reporting unit or any other reporting units or indefinite-lived intangible assets.

Other intangible assets were as follows:

December 31, 2022	Gross carrying amount	Accumulated amortization	Intangibles, net
Computer software	\$ 204	\$ (173)	\$ 31
Patents and licenses	67	(66)	1
Other intangibles	678	(221)	457
Total amortizable intangible assets	949	(460)	489
Indefinite-lived trade names and trademarks	32	—	32
Total intangible assets, net	<u>\$ 981</u>	<u>\$ (460)</u>	<u>\$ 521</u>

December 31, 2021	Gross carrying amount	Accumulated amortization	Intangibles, net
Computer software	\$ 206	\$ (175)	\$ 31
Patents and licenses	67	(65)	2
Other intangibles	686	(202)	484
Total amortizable intangible assets	959	(442)	517
Indefinite-lived trade names and trademarks	32	—	32
Total intangible assets, net	<u>\$ 991</u>	<u>\$ (442)</u>	<u>\$ 549</u>

Computer software consists primarily of software costs associated with enterprise business solutions across Howmet's businesses.

Amortization expense related to the intangible assets recorded in Provision for depreciation and amortization in the Statement of Consolidated Operations was \$36, \$36, and \$40 for the years ended December 31, 2022, 2021, and 2020, respectively, and is expected to be in the range of approximately \$34 to \$39 annually from 2023 to 2027.

Q. Leases

Operating lease cost, which included short-term leases and variable lease payments and approximated cash paid, was \$61, \$63, and \$67 in 2022, 2021, and 2020, respectively.

Operating lease right-of-use assets and lease liabilities in the Consolidated Balance Sheet were as follows:

December 31,	2022	2021
Right-of-use assets classified in Other noncurrent assets	\$ 111	\$ 108
Current portion of lease liabilities classified in Other current liabilities	\$ 32	\$ 33
Long-term portion of lease liabilities classified in Other noncurrent liabilities and deferred credits	83	81
Total lease liabilities	<u>\$ 115</u>	<u>\$ 114</u>

Future minimum contractual operating lease obligations were as follows at December 31, 2022:

2023	\$	39
2024		29
2025		18
2026		14
2027		10
Thereafter		24
Total lease payments	\$	134
Less: Imputed interest		(19)
Present value of lease liabilities	\$	115

December 31,	2022	2021	2020
Right-of-use assets obtained in exchange for operating lease obligations (Q)	\$ 34	\$ 16	\$ 35
Weighted-average remaining lease term in years	6	6	6
Weighted-average discount rate	5.4 %	5.4 %	5.6 %

R. Debt

Debt.

December 31,	2022	2021
5.125% Notes, due 2024	\$ 1,081	\$ 1,150
6.875% Notes, due 2025	600	600
5.900% Notes, due 2027	625	625
6.750% Bonds, due 2028	300	300
3.000% Notes, due 2029	700	700
5.950% Notes, due 2037	625	625
4.750% Iowa Finance Authority Loan, due 2042	250	250
Other ⁽¹⁾	(19)	(18)
	4,162	4,232
Less: amount due within one year	—	5
Total long-term debt	\$ 4,162	\$ 4,227

⁽¹⁾ Includes various financing arrangements related to subsidiaries, unamortized debt discounts and unamortized debt issuance costs related to outstanding notes and bonds listed in the table above.

The principal amount of long-term debt maturing in each of the next five years is \$1,081 in 2024, \$600 in 2025, \$625 in 2027, and no debt maturities in each of 2023 and 2026.

Public Debt. In the second and fourth quarters of 2022, the Company repurchased in the open market approximately \$69 aggregate principal amount of its 5.125% Notes due October 2024 (the “5.125% Notes”) and paid approximately \$71, including an early termination premium of approximately \$2, which was recorded in Loss on debt redemption in the Statement of Consolidated Operations. In January 2023, the Company repurchased approximately \$26 aggregate principal amount of additional 5.125% Notes in the open market.

In the third and fourth quarters of 2021, the Company repurchased an additional \$100 aggregate principal amount of its 5.125% Notes in the open market and paid approximately \$111, including an early termination premium and accrued interest of approximately \$10 and \$1, respectively, which were recorded in Loss on debt redemption and Interest expense, net, respectively, in the Statement of Consolidated Operations.

On September 2, 2021, the Company completed a cash tender offer and repurchased approximately \$600 aggregate principal amount of its 6.875% Notes due 2025 (the “6.875% Notes”). The amount of tender premium and accrued interest associated with the notes accepted for settlement were \$105 and \$14, respectively, which were recorded in Loss on debt redemption and Interest expense, net, respectively, in the Statement of Consolidated Operations.

On September 1, 2021, the Company completed an offering of \$700 aggregate principal amount of 3.000% Notes due 2029, the proceeds of which were used to fund the cash tender offer noted above and to pay related transaction fees, including applicable premiums and expenses.

On May 3, 2021, the Company completed the early redemption of all the remaining \$476 aggregate principal amount of its 5.870% Notes due 2022 (the “5.870% Notes”) and paid an aggregate of \$503, including \$5 of accrued interest. The Company also incurred an early termination premium and other costs of \$23, which was recorded in Loss on debt redemption in the Statement of Consolidated Operations.

On January 15, 2021 the Company completed the early redemption of all the remaining \$361 of its 5.400% Notes due 2021 (the “5.400% Notes”) at par and paid \$5 in accrued interest.

On May 21, 2020, the Company completed a cash tender offer and repurchased \$589 and \$151 of principal amount of the 5.400% Notes and its 5.870% Notes, respectively. The amount of early tender premium and accrued interest associated with the notes accepted for early settlement were \$24 and \$4, respectively, which were recorded in Loss on debt redemption and Interest expense, net, respectively, in the Statement of Consolidated Operations.

On April 24, 2020, the Company completed an offering of \$1,200 aggregate principal amount of 6.875% Notes, the proceeds of which have been used to fund the May 2020 cash tender offers noted above and to pay related transaction fees, including applicable premiums and expenses, with the remaining amount to be used for general corporate purposes. The Company incurred deferred financing costs of \$14 associated with the issuance in the second quarter of 2020.

On April 6, 2020, the Company completed the early redemption of all \$1,000 of its 6.150% Notes due 2020 (the “6.150% Notes”) and the early partial redemption of \$300 of its 5.400% Notes. Holders of the 6.150% Notes were paid an aggregate of \$1,020 and holders of the 5.400% Notes were paid an aggregate of \$315, plus accrued and unpaid interest up to, but not including, the redemption date. The Company incurred early termination premium and accrued interest of \$35 and \$17, respectively, which were recorded in Loss on debt redemption and Interest expense, net, respectively, in the Statement of Consolidated Operations.

The Company has the option to redeem certain of its notes and bonds in whole or part, at any time at a redemption price equal to the greater of principal amount or the sum of the present values of the remaining scheduled payments, discounted using a defined treasury rate plus a spread, plus in either case accrued and unpaid interest to the redemption date.

Credit Facility. On September 28, 2021, the Company amended and restated its Five-Year Revolving Credit Agreement (as so amended and restated, the “Credit Agreement”). Capitalized terms used in this “Credit Facility” section but not otherwise defined shall have the meanings given to such terms in the Credit Agreement.

The Credit Agreement provides a \$1,000 senior unsecured revolving credit facility (the “Credit Facility”) that matures on September 28, 2026, unless extended or earlier terminated in accordance with the provisions of the Credit Agreement. Howmet may make two one-year extension requests during the term of the Credit Facility, subject to the lender consent requirements set forth in the Credit Agreement. Subject to the terms and conditions of the Credit Agreement, the Company may from time to time request increases in lender commitments under the Credit Facility, not to exceed \$500 in aggregate principal amount, and may also request the issuance of letters of credit, subject to a letter of credit sublimit of \$500 of the Credit Facility. Under the provisions of the Credit Agreement, based on Howmet’s current long-term debt ratings, Howmet pays an annual fee of 0.23% of the total commitment to maintain the Credit Facility.

The Credit Facility is unsecured and amounts payable under it will rank pari passu with all other unsecured, unsubordinated indebtedness of Howmet. Borrowings under the Credit Facility may be denominated in U.S. dollars or euros. On February 13, 2023, the Company amended the Credit Agreement to replace LIBOR with Term SOFR as the reference rate for U.S. dollar-denominated loans. Loans under the Credit Agreement will bear interest at a base rate or, in the case of U.S. dollar-denominated loans, a rate equal to Term SOFR plus adjustment or, in the case of euro-denominated loans, the Euro inter-bank offered rate (“EURIBOR”), plus, in each case, an applicable margin based on the credit ratings of Howmet’s outstanding senior unsecured long-term debt. Based on Howmet’s current long-term debt ratings, the applicable margin on base rate loans would be 0.40% per annum and the applicable margin on Term SOFR loans and EURIBOR loans would be 1.40% per annum. The applicable margin is subject to change based on the Company’s long-term debt ratings. Loans may be prepaid without premium or penalty, subject to customary breakage costs.

The obligation of Howmet to pay amounts outstanding under the Credit Facility may be accelerated upon the occurrence of an “Event of Default” as defined in the Credit Agreement. Such Events of Default include, among others, (a) non-payment of obligations; (b) breach of any representation or warranty in any material respect; (c) non-performance of covenants and obligations; (d) with respect to other indebtedness in a principal amount in excess of \$100, a default thereunder that causes such indebtedness to become due prior to its stated maturity or a default in the payment at maturity of any principal of such indebtedness; (e) the bankruptcy or insolvency of Howmet; and (f) a change in control of Howmet.

Under the Credit Agreement, the Company's ratio of Consolidated Net Debt to Consolidated EBITDA as of the end of each fiscal quarter for the period of the four fiscal quarters of the Company most recently ended, is required to be no greater than 3.50 to 1.00.

During the Covenant Relief Period, which ended on December 31, 2022, the Company was required to maintain a Consolidated Net Debt to Consolidated EBITDA ratio of no greater than 5.00 to 1.00 as of the end of the fiscal quarter for the period of four fiscal quarters ended September 30, 2021, stepping down as of the end of each fiscal quarter to 3.75 to 1.00 as of December 31, 2022. In addition, during the Covenant Relief Period, common stock dividends and share repurchases (see [Note J](#)) were permitted only if no loans under the Credit Agreement were outstanding at the time and were limited to an aggregate amount not to exceed \$500 during the year ended December 31, 2022. Common stock dividends and share repurchases were \$442 during the year ended December 31, 2022. Following the end of the Covenant Relief Period, the restriction on common stock dividends and share repurchases under the Credit Agreement, along with certain covenants, no longer applies.

The Credit Agreement includes additional covenants, including, among others, (a) limitations on Howmet's ability to incur liens securing indebtedness for borrowed money, (b) limitations on Howmet's ability to consummate a merger, consolidation or sale of all or substantially all of its assets, and (c) limitations on Howmet's ability to change the nature of its business.

There were no amounts outstanding under the Credit Agreement at December 31, 2022 and 2021, and no amounts were borrowed during 2022, 2021 or 2020 under the Credit Agreement. At December 31, 2022, the Company was in compliance with all covenants under the Credit Agreement. Availability under the Credit Agreement could be reduced in future periods if the Company fails to maintain the required ratios referenced above.

In addition to the Credit Agreement, the Company had several other credit agreements that provided a borrowing capacity of \$640 as of December 31, 2019, and all of which expired in 2020. In 2020, nothing was borrowed or repaid under these arrangements.

Short-Term Debt. At December 31, 2022 and 2021, short-term debt was zero and \$5, respectively, substantially all of which related to accounts payable settlement arrangements with certain vendors and third-party intermediaries. These arrangements provide that, at the vendor's request, the third-party intermediary advances the amount of the scheduled payment to the vendor, less an appropriate discount, before the scheduled payment date, and Howmet makes payment to the third-party intermediary on the date stipulated in accordance with the commercial terms negotiated with its vendors. Howmet records imputed interest related to these arrangements in Interest expense, net in the Statement of Consolidated Operations.

S. Other Financial Instruments

Fair Value. Fair value is defined as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. The fair value hierarchy distinguishes between (i) market participant assumptions developed based on market data obtained from independent sources (observable inputs) and (ii) an entity's own assumptions about market participant assumptions developed based on the best information available in the circumstances (unobservable inputs). The fair value hierarchy consists of three broad levels, which gives the highest priority to unadjusted quoted prices in active markets for identical assets or liabilities (Level 1) and the lowest priority to unobservable inputs (Level 3). The three levels of the fair value hierarchy are described below:

- Level 1 - Unadjusted quoted prices in active markets that are accessible at the measurement date for identical, unrestricted assets or liabilities.
- Level 2 - Inputs other than quoted prices included within Level 1 that are observable for the asset or liability, either directly or indirectly, including quoted prices for similar assets or liabilities in active markets; quoted prices for identical or similar assets or liabilities in markets that are not active; inputs other than quoted prices that are observable for the asset or liability (e.g., interest rates); and inputs that are derived principally from or corroborated by observable market data by correlation or other means.
- Level 3 - Inputs that are both significant to the fair value measurement and unobservable.

The carrying values of Cash and cash equivalents, restricted cash, derivatives, noncurrent receivables, and Short-term debt included in the Consolidated Balance Sheet approximate their fair value. The Company holds exchange-traded fixed income securities which are considered available-for-sale securities and are carried at fair value based on quoted market prices. The aforementioned securities are classified in Level 1 of the fair value hierarchy and are included in Other noncurrent assets in the Consolidated Balance Sheet. The fair value of Long-term debt, less amount due within one year was based on quoted market prices for public debt and on interest rates that are currently available to Howmet for issuance of debt with similar terms and maturities for non-public debt. The fair value amounts for all Long-term debt were classified in Level 2 of the fair value hierarchy.

December 31,	2022		2021	
	Carrying value	Fair value	Carrying value	Fair value
Long-term debt, less amounts due within one year	\$ 4,162	\$ 4,059	\$ 4,227	\$ 4,707

Restricted cash was \$1, \$2, and \$1 in 2022, 2021, and 2020, respectively, and was recorded in Prepaid expenses and other current assets in the Consolidated Balance Sheet.

T. Cash Flow Information

Cash paid for interest and income taxes for both continuing and discontinued operations was as follows:

	2022	2021	2020
Interest, net of amounts capitalized	\$ 224	\$ 267	\$ 401
Income taxes, net of amounts refunded	\$ 50	\$ 53	\$ (33)

The Company incurred capital expenditures which remain unpaid at December 31, 2022, 2021, and 2020 of \$55, \$49, and \$50, respectively, and will result in cash outflows within investing activities in the Statement of Consolidated Cash Flows in subsequent periods.

U. Divestitures

2021 Divestiture

On March 15, 2021, the Company reached an agreement to sell a small manufacturing plant in France within the Fastening Systems segment, which resulted in a charge of \$4 related to the non-cash impairment of the net book value of the business, primarily goodwill, in the first quarter of 2021 which was recorded in Restructuring and other charges in the Statement of Consolidated Operations. On June 1, 2021, the Company completed the sale for \$10 (of which \$8 of cash was received in the second quarter of 2021). In the third quarter of 2022, \$1 was received, and the remaining \$1 in escrow is expected to be received in the third quarter of 2023.

2020 Divestiture

On January 31, 2020, the Company reached an agreement to sell a small manufacturing plant in the U.K. within the Engineered Structures segment for \$12 in cash, and therefore was classified as held for sale. As a result of entering into the agreement, a charge of \$12 was recognized related to a non-cash impairment of the net book value of the business, primarily properties, plants, and equipment in the first quarter of 2020, which was recorded in Restructuring and other charges in the Statement of Consolidated Operations. As the sale did not close, the Company changed the classification from held for sale to held for use in the second quarter of 2020 and recorded these assets at their lower of carrying value (assuming no initial reclassification for held for sale was made) or fair value. The result was a reversal of \$7 related to a non-cash impairment in the second quarter of 2020. These charges were recorded in Restructuring and other charges in the Statement of Consolidated Operations.

V. Contingencies and Commitments

Contingencies

Environmental Matters. Howmet participates in environmental assessments and cleanups at more than 30 locations. These include owned or operating facilities and adjoining properties, previously owned or operated facilities and adjoining properties, and waste sites, including Superfund (Comprehensive Environmental Response, Compensation and Liability Act ("CERCLA")) sites.

A liability is recorded for environmental remediation when a cleanup program becomes probable and the costs can be reasonably estimated. As assessments and cleanups proceed, the liability is adjusted based on progress made in determining the extent of remedial actions and related costs. The liability can change substantially due to factors such as the nature and extent of contamination, changes in remedial requirements, and technological changes, among others.

The Company's remediation reserve balance was \$16 and \$15 at December 31, 2022 and 2021, respectively, and was recorded in Other noncurrent liabilities and deferred credits in the Consolidated Balance Sheet (of which \$6 was classified as a current liability for both periods), and reflects the most probable costs to remediate identified environmental conditions for which costs can be reasonably estimated. Payments related to remediation expenses applied against the reserve were \$4 and \$2 in 2022 and 2021, respectively, and included expenditures currently mandated, as well as those not required by any regulatory authority or third party.

Included in annual operating expenses are the recurring costs of managing hazardous substances and environmental programs. These costs are estimated to be less than 1% of Cost of goods sold.

Tax. As previously reported, in July 2013, following a Spanish corporate income tax audit covering the 2006 through 2009 tax years, an assessment was received mainly disallowing certain interest deductions claimed by a Spanish consolidated tax group owned by the Company. The Company appealed this assessment to Spain's Central Tax Administrative Court, and subsequently to Spain's National Court, each of which was denied.

The Company then appealed the decision to the Supreme Court of Spain. In November 2020, the Supreme Court of Spain rendered a decision in favor of the taxpayer, removing the assessment in its entirety. The decision is final and cannot be further appealed.

As a result of the favorable decision, in the fourth quarter of 2020, the Company released an income tax reserve, including interest, of \$64 (€54), which was recorded in Provision (benefit) for income taxes in the Consolidated Statement of Operations, that was previously established in the third quarter of 2018. In addition, the Company reversed a combined indemnification receivable of \$53 (€45) for Alcoa Corporation's 49% share and Arconic Corporation's 33.66% share of the total reserve, which was recorded in Other expense, net in the Consolidated Statement of Operations, that were previously established pursuant to the October 31, 2016 and March 31, 2020 Tax Matters Agreements, respectively. As of the end of 2020, the Company no longer has a balance recorded for this matter.

Indemnified Matters. The Separation and Distribution Agreement, dated October 31, 2016, that the Company entered into with Alcoa Corporation in connection with the Alcoa Inc. Separation Transaction, provides for cross-indemnities between the Company and Alcoa Corporation for claims subject to indemnification. The Separation and Distribution Agreement, dated March 31, 2020, that the Company entered into with Arconic Corporation in connection with the Arconic Inc. Separation Transaction, provides for cross-indemnities between the Company and Arconic Corporation for claims subject to indemnification. Among other claims that are covered by these indemnities, Arconic Corporation indemnifies the Company (f/k/a Arconic Inc. and f/k/a Alcoa Inc.) for all potential liabilities associated with the fire that occurred at the Grenfell Tower in London, U.K. on June 14, 2017 ("Grenfell Fire"), including the following:

(i) Regulatory Investigations. Arconic Architectural Products SAS ("AAP SAS") (now a subsidiary of Arconic Corporation) supplied Reynobond PE to its customer who used the product as one component of the overall cladding system on Grenfell Tower. Regulatory Investigations into the overall Grenfell Fire are being conducted, including a criminal investigation by the London Metropolitan Police Service and a Public Inquiry by the British government (regarding which AAP SAS is a participant). (ii) United Kingdom Litigation. On December 23, 2020, survivors and estates of decedents of the Grenfell Fire and emergency responders filed suit against 23 defendants, including the Company. No substantive allegations or requests for relief have been provided. The suits are stayed until the next case management conference, which will be scheduled after April 27, 2023. (iii) Behrens et al. v. Arconic Inc. et al. (United States District Court for the Eastern District of Pennsylvania). On June 6, 2019, 247 survivors and estates of decedents of the Grenfell Fire filed a complaint against Arconic Inc., Alcoa Inc. and Arconic Architectural Products, LLC (now a subsidiary of Arconic Corporation), among others, for product liability and wrongful death. The plaintiffs seek monetary damages exceeding \$75,000 (amount not in millions) for each plaintiff. On September 16, 2020, the court dismissed the U.S. case, determining that the U.K. is the appropriate jurisdiction for the case. The plaintiffs appealed that decision. The Third Circuit Court of Appeals affirmed the dismissal on July 8, 2022, and denied a petition for a rehearing on October 7, 2022. On January 5, 2023, the plaintiffs filed a petition for a writ of certiorari in the U.S. Supreme Court, which is currently pending. (iv) Howard v. Arconic Inc. et al. (United States District Court for the Western District of Pennsylvania). In 2017, two purported class actions were filed against Arconic Inc., Klaus Kleinfeld and other former Arconic Inc. executives and directors, and certain banks. The actions, which later were consolidated, allege violations of the federal securities laws relating to the Grenfell Fire. On June 23, 2021, the court ruled that certain claims related to a particular registration statement, other SEC filings, product brochures and websites can proceed and dismissed all other claims with prejudice. On December 2, 2022, the court issued an initial case management order, setting forth deadlines for class certification briefing and discovery. Discovery has begun and is ongoing. (v) Raul v. Albaugh, et al. (United States District Court for the District of Delaware). On June 22, 2018, a derivative complaint was filed nominally on behalf of Arconic Inc. by a purported Arconic Inc. stockholder against the then members of Arconic Inc.'s Board of Directors, Klaus Kleinfeld and Ken Giacobbe, naming Arconic Inc. as a nominal defendant. The complaint asserts claims under federal securities laws, most of which are similar to those in *Howard*, as well as claims under Delaware state law for breaches of fiduciary duty, gross mismanagement and abuse of control, and also alleges that the defendants improperly authorized the sale of Reynobond PE for unsafe uses. The case has been stayed until the final resolution of the *Howard* case and the Regulatory Investigations. (vi) Stockholder Demands. Following the Grenfell Fire, the then Arconic Inc. Board of Directors (the "Board") received letters, purportedly sent on behalf of stockholders, reciting allegations similar to the *Howard* and *Raul* cases and demanding that the Board authorize Arconic Inc. to initiate litigation against members of management, the Board and others. On May 28, 2019, the Board adopted the findings and recommendations of its Special Litigation Committee and rejected the stockholders' demands. On June 28, 2021, one of the stockholders whose demand was rejected asked the current Howmet Board of Directors to reconsider the decision of the Board,

which was declined. On August 4, 2021, another stockholder whose demand was rejected requested books and records relating to, among other things, the Board's decision to reject his initial demand, which the Company declined. There has been no further correspondence with either stockholder.

Legal Proceedings. *Lehman Brothers International (Europe) ("LBIE") Proceeding.* On June 26, 2020, Lehman Brothers International (Europe) ("LBIE") filed proceedings in the High Court of Justice, Business and Property Courts of England and Wales (the "Court") against two subsidiaries of the Company, FR Acquisitions Corporation (Europe) Ltd and JFB Firth Rixson Inc. (collectively, the "Firth Rixson Entities"). The proceedings concern two interest rate swap transactions with LBIE (collectively, the "ISDAs"). In 2007 and 2008, the Firth Rixson Entities, then owned by Oak Hill, entered into the ISDAs in order to meet their obligation to hedge interest rate exposure under a lending agreement with LBIE. When LBIE went into bankruptcy in 2008, the Firth Rixson Entities entered into alternative swap agreements with another counterparty in order to meet this hedging obligation. The Firth Rixson Entities were acquired by the Company as part of its acquisition of the Firth Rixson business from Oak Hill in 2014. In the LBIE legal proceeding, LBIE claims the amounts owing by the Firth Rixson Entities under the ISDAs to be approximately \$64, plus applicable interest. The Court issued its ruling in these proceedings on October 11, 2022 (the "Judgment"). In its ruling, the Court determined that the event of default under the ISDAs caused by LBIE as a result of its insolvency in 2008 and other defaults will conclude upon LBIE's expected emergence from administration under the Insolvency Act of 1986. The Court ruled that upon such future event and other relevant steps being completed, the timing of which is unknown, the Firth Rixson Entities will be obligated to pay amounts due under the ISDAs. In late 2022, the Court granted LBIE a three-year extension of its bankruptcy administration. The Company recorded \$65 in Other current liabilities in the Consolidated Balance Sheet, and took a pre-tax charge of this amount in Other expense, net in the Statement of Consolidated Operations in 2022. The matter of interest was not specifically addressed in the proceeding and no related amounts have been reserved. The Company vigorously disagrees with the ruling including as to any payment obligation in respect of the principal as well as any interest. In December 2022, the Company was granted permission to appeal the Court's decision.

Other. In addition to the matters discussed above, various other lawsuits, claims, and proceedings have been or may be instituted or asserted against the Company, including those pertaining to environmental, product liability, safety and health, employment, tax and antitrust matters. While the amounts claimed in these other matters may be substantial, the ultimate liability cannot currently be determined because of the considerable uncertainties that exist. Therefore, it is possible that the Company's liquidity or results of operations in a period could be materially affected by one or more of these other matters. However, based on facts currently available, management believes that the disposition of these other matters that are pending or asserted will not have a material adverse effect, individually or in the aggregate, on the results of operations, financial position or cash flows of the Company.

Commitments

Purchase Obligations. Howmet has entered into purchase commitments for raw materials, energy and other goods and services, which total \$265 in 2023, \$140 in 2024, \$14 in 2025, \$2 in 2026, and none in 2027 and thereafter.

Operating Leases. See [Note Q](#) for the operating lease future minimum contractual obligations.

Guarantees. At December 31, 2022, Howmet had outstanding bank guarantees related to tax matters, outstanding debt, workers' compensation, environmental obligations, and customs duties, among others. The total amount committed under these guarantees, which expire at various dates between 2023 and 2040, was \$13 at December 31, 2022.

Pursuant to the Separation and Distribution Agreement, dated as of October 31, 2016, between Howmet and Alcoa Corporation, Howmet was required to provide certain guarantees for Alcoa Corporation, which had a fair value of \$6 at both December 31, 2022 and 2021, and were included in Other noncurrent liabilities and deferred credits in the Consolidated Balance Sheet. The remaining guarantee, for which the Company and Arconic Corporation are secondarily liable in the event of a payment default by Alcoa Corporation, relates to a long-term energy supply agreement that expires in 2047 at an Alcoa Corporation facility. The Company currently views the risk of an Alcoa Corporation payment default on its obligations under the contract to be remote. The Company and Arconic Corporation are required to provide a guarantee up to an estimated present value amount of approximately \$1,040 and \$1,406 at December 31, 2022 and 2021, respectively, in the event of an Alcoa Corporation default. In December 2020, December 2021, and December 2022, a surety bond with a limit of \$80 relating to this guarantee was obtained by Alcoa Corporation to protect Howmet's obligation. This surety bond will be renewed on an annual basis by Alcoa Corporation.

Letters of Credit. The Company has outstanding letters of credit, primarily related to workers' compensation, environmental obligations, and insurance obligations. The total amount committed under these letters of credit, which automatically renew or expire at various dates, mostly in 2023, was \$120 at December 31, 2022.

Pursuant to the Separation and Distribution Agreements between the Company and Arconic Corporation and between the Company and Alcoa Corporation, the Company is required to retain letters of credit of \$53 (which are included in the \$120 in the above paragraph) that had previously been provided related to the Company, Arconic Corporation, and Alcoa Corporation workers' compensation claims that occurred prior to the respective separation transactions of April 1, 2020 and November 1, 2016. Arconic Corporation and Alcoa Corporation workers' compensation and letters of credit fees paid by the Company are proportionally billed to, and are reimbursed by, Arconic Corporation and Alcoa Corporation, respectively. Also, the Company was required to provide letters of credit for certain Arconic Corporation environmental obligations and, as a result, the Company has \$17 of outstanding letters of credit relating to such liabilities (which are also included in the \$120 in the above paragraph). Arconic Corporation has issued surety bonds to cover these environmental obligations. Arconic Corporation is being billed for these letter of credit fees paid by the Company and will reimburse the Company for any payments made under these letters of credit.

Surety Bonds. The Company has outstanding surety bonds primarily related to tax matters, contract performance, workers' compensation, environmental-related matters, energy contracts, and customs duties. The total amount committed under these annual surety bonds, which expire and automatically renew at various dates, primarily in 2023 and 2024, was \$43 at December 31, 2022.

Pursuant to the Separation and Distribution Agreements between the Company and Arconic Corporation and between the Company and Alcoa Corporation, the Company is required to provide surety bonds of \$22 (which are included in the \$43 in the above paragraph) that had previously been provided related to the Company, Arconic Corporation, and Alcoa Corporation workers' compensation claims that occurred prior to the respective separation transactions of April 1, 2020 and November 1, 2016. Arconic Corporation and Alcoa Corporation workers' compensation claims and surety bond fees paid by the Company are proportionately billed to, and are reimbursed by, Arconic Corporation and Alcoa Corporation.

W. Subsequent Events

Management evaluated all activity of Howmet and concluded that no subsequent events have occurred that would require recognition in the Consolidated Financial Statements or disclosure in the Notes to the Consolidated Financial Statements, except as noted below:

See [Note R](#) for the open market debt repurchases made subsequent to the fourth quarter of 2022 as well as an amendment to the Credit Agreement on February 13, 2023 to replace LIBOR with Term SOFR as the reference rate therein.

Item 9. Changes in and Disagreements With Accountants on Accounting and Financial Disclosure.

None.

Item 9A. Controls and Procedures.

(a) Evaluation of Disclosure Controls and Procedures

Howmet's Chief Executive Officer and Chief Financial Officer have evaluated the Company's disclosure controls and procedures, as defined in Rules 13a-15(e) and 15d-15(e) of the Securities Exchange Act of 1934, as of the end of the period covered by this report, and they have concluded that these controls and procedures are effective.

(b) Management's Annual Report on Internal Control over Financial Reporting

Management's Report on Internal Control over Financial Reporting is included in [Part II, Item 8](#) of this Form 10-K beginning on page [36](#).

(c) Attestation Report of the Registered Public Accounting Firm

The effectiveness of Howmet's internal control over financial reporting as of December 31, 2022 has been audited by PricewaterhouseCoopers LLP, an independent registered public accounting firm, as stated in their report, which is included in [Part II, Item 8](#) of this Form 10-K on page [37](#).

(d) Changes in Internal Control over Financial Reporting

There have been no changes in internal control over financial reporting during the fourth quarter of 2022, that have materially affected, or are reasonably likely to materially affect, the Company's internal control over financial reporting.

Item 9B. Other Information.

None.

Item 9C. Disclosure Regarding Foreign Jurisdictions that Prevent Inspection.

Not applicable.

PART III

Item 10. Directors, Executive Officers and Corporate Governance.

The information required by Item 401 of Regulation S-K regarding directors is contained under the caption "Item 1 Election of Directors" of the Proxy Statement and is incorporated by reference. The information required by Item 401 of Regulation S-K regarding executive officers is set forth in Part I, Item 1 of this report under "Executive Officers of the Registrant."

The information required by Item 405 of Regulation S-K is contained under the caption "Section 16(a) Beneficial Ownership Reporting Compliance" of the Proxy Statement and is incorporated by reference.

The Company's Code of Ethics for the CEO, CFO and Other Financial Professionals is publicly available on the Company's Internet website at www.howmet.com under the section "Investors—Corporate Governance—Governance and Policies." The remaining information required by Item 406 of Regulation S-K is contained under the captions "Corporate Governance" and "Corporate Governance—Code of Conduct and Code of Ethics" of the Proxy Statement and is incorporated by reference.

The information required by Items 407(c)(3), (d)(4) and (d)(5) of Regulation S-K is included under the captions "Item 1 Election of Directors—Nominating Board Candidates—Procedures and Director Qualifications" and "Corporate Governance—Committees of the Board—Audit Committee" of the Proxy Statement and is incorporated by reference.

Item 11. Executive Compensation.

The information required by Item 402 of Regulation S-K is contained under the captions "Director Compensation", "Executive Compensation" and "Corporate Governance—Recovery of Incentive Compensation" of the Proxy Statement. Such information is incorporated by reference, except as to information required pursuant to Item 402(v) of Regulation S-K relating to pay versus performance.

The information required by Items 407(e)(4) and (e)(5) of Regulation S-K is contained under the captions "Corporate Governance—Compensation Committee Interlocks and Insider Participation" and "Item 3 Advisory Approval of Executive Compensation—Compensation Committee Report" of the Proxy Statement. Such information (other than the Compensation Committee Report, which shall not be deemed to be "filed") is incorporated by reference.

Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters.

The following table gives information about Howmet’s common stock that could be issued under the Company’s equity compensation plans as of December 31, 2022:

Plan Category	Equity Compensation Plan Information		
	Number of securities to be issued upon exercise of outstanding options, warrants and rights	Weighted-average exercise price of outstanding options, warrants and rights	Number of securities remaining available for future issuance under equity compensation plans (excluding securities reflected in column (a))
	(a)	(b)	(c)
Equity compensation plans approved by security holders ⁽¹⁾	7,411,252 ⁽¹⁾	\$ 23.86	23,432,811 ⁽²⁾
Equity compensation plans not approved by security holders	—	—	—
Total	7,411,252	\$ 23.86	23,432,811

⁽¹⁾ Includes the 2013 Howmet Aerospace Stock Incentive Plan, as Amended and Restated (approved by shareholders in May 2019, May 2018, May 2016 and May 2013) (the “2013 Plan”) and the 2009 Alcoa Stock Incentive Plan (approved by shareholders in May 2009). Table amounts are comprised of the following:

- 936,242 stock options
- 3,527,349 restricted share units
- 2,947,661 performance share awards (191,217 granted in 2022 at target)

⁽²⁾ The 2013 Plan authorizes, in addition to stock options, other types of stock-based awards in the form of stock appreciation rights, restricted shares, restricted share units, performance awards and other awards. The shares that remain available for issuance under the 2013 Plan may be issued in connection with any one of these awards. Up to 66,666,667 shares may be issued under the plan. Any award other than an option or a stock appreciation right shall count as 2.33 shares. Options and stock appreciation rights shall be counted as one share for each option or stock appreciation right. In addition, the 2013 Plan provides the following are available to grant under the 2013 Plan: (i) shares that are issued under the 2013 Plan, which are subsequently forfeited, cancelled or expire in accordance with the terms of the award and (ii) shares that had previously been issued under prior plans that are outstanding as of the date of the 2013 Plan which are subsequently forfeited, cancelled or expire in accordance with the terms of the award.

The information required by Item 403 of Regulation S-K is contained under the captions “Howmet Aerospace Stock Ownership—Stock Ownership of Certain Beneficial Owners” and “Howmet Aerospace Stock Ownership—Stock Ownership of Directors and Executive Officers” of the Proxy Statement and is incorporated by reference.

Item 13. Certain Relationships and Related Transactions, and Director Independence.

The information required by Item 404 of Regulation S-K is contained under the captions “Executive Compensation” (excluding the information under the caption “Compensation Committee Report”) and “Corporate Governance— Related Person Transactions” of the Proxy Statement and is incorporated by reference.

The information required by Item 407(a) of Regulation S-K regarding director independence is contained under the captions “Item 1 Election of Directors” and “Corporate Governance” of the Proxy Statement and is incorporated by reference.

Item 14. Principal Accounting Fees and Services.

The information required by Item 9(e) of Schedule 14A is contained under the captions “Item 2 Ratification of Appointment of Independent Registered Public Accounting Firm—Report of the Audit Committee” and “Item 2 Ratification of Appointment of Independent Registered Public Accounting Firm— Audit and Non-Audit Fees” of the Proxy Statement and in its Attachment A (Pre-Approval Policies and Procedures for Audit and Non-Audit Services) thereto and is incorporated by reference.

PART IV**Item 15. Exhibits, Financial Statement Schedules.**

(a) The consolidated financial statements and exhibits listed below are filed as part of this report.

(1) The Company's consolidated financial statements, the notes thereto and the report of the Independent Registered Public Accounting Firm are on pages 37 through 81 of this report.

(2) Financial statement schedules have been omitted because they are not applicable, not required, or the required information is included in the consolidated financial statements or notes thereto.

(3) Exhibits.

Exhibit Number	Description*
2(a)	Separation and Distribution Agreement, dated as of October 31, 2016, by and between Arconic Inc. and Alcoa Corporation, incorporated by reference to Exhibit 2.1 to the Company's Current Report on Form 8-K dated November 4, 2016.
2(b)	Tax Matters Agreement, dated as of October 31, 2016, by and between Arconic Inc. and Alcoa Corporation, incorporated by reference to Exhibit 2.3 to the Company's Current Report on Form 8-K dated November 4, 2016.
2(c)	Employee Matters Agreement, dated as of October 31, 2016, by and between Arconic Inc. and Alcoa Corporation, incorporated by reference to Exhibit 2.4 to the Company's Current Report on Form 8-K dated November 4, 2016.
2(c)(1)	Amendment No. 1, dated December 13, 2016, to Employee Matters Agreement, dated as of October 31, 2016, by and between Arconic Inc. and Alcoa Corporation, incorporated by reference to Exhibit 2(e)(1) to the Company's Annual Report on Form 10-K for the year ended December 31, 2016.
2(d)	Alcoa Corporation to Arconic Inc. Patent, Know-How, and Trade Secret License Agreement, dated as of October 31, 2016, by and between Alcoa USA Corp. and Arconic Inc., incorporated by reference to Exhibit 2.5 to the Company's Current Report on Form 8-K dated November 4, 2016.
2(d)(1)	First Amendment, effective as of November 1, 2016, to the Patent, Know-How and Trade Secret License Agreement by and between Alcoa USA Corp. and Arconic Inc., incorporated by reference to Exhibit 2(d)(1) to the Company's Annual Report on Form 10-K for the year ended December 31, 2021.
2(d)(2)	Second Amendment, effective as of October 18, 2021, to the Patent, Know-How and Trade Secret License Agreement by and between Alcoa USA Corp. and Arconic Inc., incorporated by reference to Exhibit 2(d)(2) to the Company's Annual Report on Form 10-K for the year ended December 31, 2021.
2(e)	Arconic Inc. to Alcoa Corporation Patent, Know-How, and Trade Secret License Agreement, dated as of October 31, 2016, by and between Arconic Inc. and Alcoa USA Corp., incorporated by reference to Exhibit 2.6 to the Company's Current Report on Form 8-K dated November 4, 2016.
2(f)	Amended and Restated Alcoa Corporation to Arconic Inc. Trademark License Agreement, dated as of June 25, 2017, by and between Alcoa USA Corp. and Arconic Inc., incorporated by reference to Exhibit 2 to the Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 2017.
2(g)	Agreement and Plan of Merger, dated October 12, 2017, by and between Arconic Inc., a Pennsylvania corporation, and Arconic Inc., a Delaware corporation, incorporated by reference to Exhibit 2.1 to the Company's Current Report on Form 8-K dated January 4, 2018.
2(h)	Separation and Distribution Agreement, dated as of March 31, 2020, by and between Arconic Inc. and Arconic Rolled Products Corporation, incorporated by reference to Exhibit 2.1 to the Company's Current Report on Form 8-K filed on April 6, 2020.
2(i)	Tax Matters Agreement, dated as of March 31, 2020, by and between Arconic Inc. and Arconic Rolled Products Corporation, incorporated by reference to Exhibit 2.2 to the Company's Current Report on Form 8-K filed on April 6, 2020.
2(j)	Employee Matters Agreement, dated as of March 31, 2020, by and between Arconic Inc. and Arconic Rolled Products Corporation, incorporated by reference to Exhibit 2.3 to the Company's Current Report on Form 8-K filed on April 6, 2020.

2(j)(1)	First Amendment to Employee Matters Agreement, dated as of April 10, 2020, by and between Howmet Aerospace Inc. and Arconic Corporation, incorporated by reference to Exhibit 2.1 to the Company's Current Report on Form 8-K filed on April 13, 2020.
2(k)	Patent, Know-How, and Trade Secret License Agreement, dated as of March 31, 2020, by and between Arconic Inc. and Arconic Rolled Products Corporation, incorporated by reference to Exhibit 2.4 to the Company's Current Report on Form 8-K filed on April 6, 2020.
2(k)(1)	Amendment No. 1, effective as of August 25, 2020, to Patent, Know-How, and Trade Secret License Agreement, dated as of March 31, 2020, by and between Arconic Inc. and Arconic Rolled Products Corporation, incorporated by reference to Exhibit 2(m)(1) to the Company's Annual Report on Form 10-K for the year ended December 31, 2021.
2(l)	Patent, Know-How, and Trade Secret License Agreement, dated as of March 31, 2020, by and between Arconic Rolled Products Corporation and Arconic Inc., incorporated by reference to Exhibit 2.5 to the Company's Current Report on Form 8-K filed on April 6, 2020.
2(m)	Trademark License Agreement, dated as of March 31, 2020, by and between Arconic Rolled Products Corporation and Arconic Inc., incorporated by reference to Exhibit 2.6 to the Company's Current Report on Form 8-K filed on April 6, 2020.
2(n)	Trademark License Agreement, dated as of March 31, 2020, by and between Arconic Inc. and Arconic Rolled Products Corporation, incorporated by reference to Exhibit 2.7 to the Company's Current Report on Form 8-K filed on April 6, 2020.
2(o)	Master Agreement for Product Supply, dated as of March 31, 2020, by and between Arconic Massena LLC, Arconic Lafayette LLC, Arconic Davenport LLC and Arconic Inc., incorporated by reference to Exhibit 2.8 to the Company's Current Report on Form 8-K filed on April 6, 2020.
2(p)	Second Supplemental Tax and Project Certificate and Agreement, effective as of April 1, 2020, by and among Arconic Inc., Arconic Davenport LLC and Arconic Rolled Products Corporation, incorporated by reference to Exhibit 2.9 to the Company's Current Report on Form 8-K filed on April 6, 2020.
2(q)	Third Supplemental Tax and Project Certificate and Agreement, effective as of January 1, 2023, by and among Howmet Aerospace Inc., Arconic US LLC and Arconic Corporation.
2(r)	Metal Supply & Tolling Agreement by and between Arconic-Köfém Mill Products Hungary Kft and Arconic-Köfém Kft, dated January 1, 2020, incorporated by reference to Exhibit 2(t) to the Company's Annual Report on Form 10-K for the year ended December 31, 2020.
3(a)	Certificate of Incorporation of Howmet Aerospace Inc., a Delaware corporation, incorporated by reference to Exhibit 3(a) to the Company's Annual Report on Form 10-K for the year ended December 31, 2020.
3(b)	Bylaws of Howmet Aerospace Inc., a Delaware corporation, incorporated by reference to Exhibit 3(b) to the Company's Annual Report on Form 10-K for the year ended December 31, 2020.
4(a)	Form of Certificate for Shares of Common Stock of Arconic Inc., a Delaware corporation, incorporated by reference to Exhibit 4.1 to the Company's Current Report on Form 8-K dated January 4, 2018.
4(b)	Bylaws. See exhibit 3(b) above.
4(c)	Form of Indenture, dated as of September 30, 1993, between Alcoa Inc. and The Bank of New York Trust Company, N.A., as successor to J. P. Morgan Trust Company, National Association (formerly Chase Manhattan Trust Company, National Association), as successor Trustee to PNC Bank, National Association, as Trustee (undated form of Indenture incorporated by reference to Exhibit 4(a) to Registration Statement No. 33-49997 on Form S-3).
4(c)(1)	First Supplemental Indenture, dated as of January 25, 2007, between Alcoa Inc. and The Bank of New York Trust Company, N.A., as successor to J.P. Morgan Trust Company, National Association (formerly Chase Manhattan Trust Company, National Association), as successor Trustee to PNC Bank, National Association, as Trustee, incorporated by reference to Exhibit 99.4 to the Company's Current Report on Form 8-K dated January 25, 2007.

4(c)(2)	Second Supplemental Indenture, dated as of July 15, 2008, between Alcoa Inc. and The Bank of New York Mellon Trust Company, N.A., as successor in interest to J. P. Morgan Trust Company, National Association (formerly Chase Manhattan Trust Company, National Association, as successor to PNC Bank, National Association), as Trustee, incorporated by reference to Exhibit 4(c) to the Company's Current Report on Form 8-K dated July 15, 2008.
4(c)(3)	Fourth Supplemental Indenture, dated as of December 31, 2017, between Arconic Inc., a Pennsylvania corporation, Arconic Inc., a Delaware corporation, and The Bank of New York Mellon Trust Company, N.A., as trustee, incorporated by reference to Exhibit 4.3 to the Company's Current Report on Form 8-K dated January 4, 2018.
4(c)(4)	Fifth Supplemental Indenture, dated as of April 16, 2020, between Howmet Aerospace Inc., a Delaware corporation, and The Bank of New York Mellon Trust Company, N.A., as trustee, incorporated by reference to Exhibit 4(e) to the Company's Registration Statement on Form S-3 (Registration Statement No. 333-237705) dated April 16, 2020.
4(d)	Form of 6.75% Bonds Due 2028, incorporated by reference to Exhibit 4(d) to the Company's Annual Report on Form 10-K for the year ended December 31, 2017.
4(e)	Form of 5.90% Notes Due 2027, incorporated by reference to Exhibit 4(e) to the Company's Annual Report on Form 10-K for the year ended December 31, 2008.
4(f)	Form of 5.95% Notes Due 2037, incorporated by reference to Exhibit 4(f) to the Company's Annual Report on Form 10-K for the year ended December 31, 2008.
4(g)	Form of 5.125% Notes Due 2024, incorporated by reference to Exhibit 4.5 to the Company's Current Report on Form 8-K dated September 22, 2014.
4(h)	Form of 6.875% Notes due 2025, incorporated by reference to Exhibit 4.6 to the Company's Current Report on Form 8-K dated April 24, 2020.
4(i)	Form of 3.000% Notes due 2029, incorporated by reference to Exhibit 4.6 to the Company's Current Report on Form 8-K dated September 1, 2021.
4(j)	Description of Arconic Inc.'s Securities Registered Pursuant to Section 12 of the Securities Exchange Act of 1934, incorporated by reference to Exhibit 4(p) to the Company's Annual Report on Form 10-K for the year ended December 31, 2019.
10(a)	Amended and Restated Five-Year Revolving Credit Agreement, dated as of September 28, 2021, among Howmet Aerospace Inc., the lenders and issuers named therein, Citibank, N.A., as administrative agent, and JPMorgan Chase Bank, N.A., as syndication agent, incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K dated September 28, 2021.
10(a)(1)	Amendment No. 1, dated as of February 13, 2023, to Amended and Restated Five-Year Revolving Credit Agreement, dated as of September 28, 2021, among Howmet Aerospace Inc., the lenders and issuers named therein, Citibank, N.A., as administrative agent, and JPMorgan Chase Bank, N.A., as syndication agent.
10(b)	Agreement, dated February 1, 2016, by and between Elliott Associates, L.P., Elliott International, L.P., Elliott International Capital Advisors Inc. and Alcoa Inc., incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K dated February 1, 2016.
10(c)	Settlement Agreement, dated as of May 22, 2017, by and among Elliott Associates, L.P., Elliott International, L.P., Elliott International Capital Advisors Inc. and Arconic Inc., incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K dated May 22, 2017 (reporting an event on May 21, 2017).
10(d)	Letter Agreement, by and among Arconic Inc. and Elliott Associates, L.P., Elliott International, L.P. and Elliott International Capital Advisors Inc., dated as of December 19, 2017, incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K dated December 19, 2017.
10(e)	Registration Rights Agreement, by and among Arconic Inc. and Elliott Associates, L.P., Elliott International, L.P. and Elliott International Capital Advisors Inc., dated as of December 19, 2017, incorporated by reference to Exhibit 10.2 to the Company's Current Report on Form 8-K dated December 19, 2017.

10(e)(1)	Amendment to Registration Rights Agreement, by and among Arconic Inc. and Elliott Associates, L.P., Elliott International, L.P. and Elliott International Capital Advisors Inc., dated as of February 2, 2018, incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K dated February 6, 2018.
10(f)	Howmet Aerospace Inc. 2020 Annual Cash Incentive Plan (formerly known as the Arconic Inc. 2020 Annual Cash Incentive Plan), incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K dated December 10, 2019.
10(g)	Howmet Aerospace Hourly Retirement Savings Plan, as Amended and Restated, effective January 1, 2021, incorporated by reference to Exhibit 10(g) to the Company's Annual Report on Form 10-K for the year ended December 31, 2021.
10(g)(1)	First Amendment, effective January 1, 2022, to the Howmet Aerospace Hourly Retirement Savings Plan, as Amended and Restated, incorporated by reference to Exhibit 10(g)(1) to the Company's Annual Report on Form 10-K for the year ended December 31, 2021.
10(g)(2)	Howmet Aerospace Salaried Retirement Savings Plan, as Amended and Restated effective January 1, 2021, incorporated by reference to Exhibit 10(g)(2) to the Company's Annual Report on Form 10-K for the year ended December 31, 2021.
10(h)	Howmet Aerospace Excess Benefits Plan C (formerly known as the Arconic Employees' Excess Benefits Plan C), as amended and restated effective August 1, 2016, incorporated by reference to Exhibit 10(j) to the Company's Annual Report on Form 10-K for the year ended December 31, 2016.
10(h)(1)	First Amendment to Howmet Aerospace Excess Benefits Plan C (formerly known as the Arconic Employees' Excess Benefits Plan C), effective January 1, 2018, incorporated by reference to Exhibit 10(l)(1) to the Company's Annual Report on Form 10-K for the year ended December 31, 2017.
10(h)(2)	Second Amendment to Howmet Aerospace Excess Benefits Plan C (formerly known as the Arconic Employees' Excess Benefits Plan C), effective January 1, 2018, incorporated by reference to Exhibit 10(l)(2) to the Company's Annual Report on Form 10-K for the year ended December 31, 2017.
10(h)(3)	Third Amendment to Howmet Aerospace Excess Benefits Plan C (formerly known as the Arconic Employees' Excess Benefits Plan C), effective March 31, 2018. incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K dated January 8, 2018.
10(i)	Deferred Fee Plan for Directors, as amended effective July 9, 1999, incorporated by reference to Exhibit 10(g)(1) to the Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 1999.
10(j)	Amended and Restated Deferred Fee Plan for Directors, effective April 1, 2020, incorporated by reference to Exhibit 10.4 to the Company's Quarterly Report on Form 10-Q for the quarter ended March 31, 2020.
10(k)	Non-Employee Director Compensation Policy, effective January 1, 2023.
10(l)	Fee Continuation Plan for Non-Employee Directors, incorporated by reference to Exhibit 10(k) to the Company's Annual Report on Form 10-K for the year ended December 31, 1989.
10(l)(1)	Amendment to Fee Continuation Plan for Non-Employee Directors, effective November 10, 1995, incorporated by reference to Exhibit 10(i)(1) to the Company's Annual Report on Form 10-K for the year ended December 31, 1995.
10(l)(2)	Second Amendment to the Fee Continuation Plan for Non-Employee Directors, effective September 15, 2006, incorporated by reference to Exhibit 10.2 to the Company's Current Report on Form 8-K dated September 20, 2006.
10(m)	Howmet Aerospace Deferred Compensation Plan (formerly known as the Arconic Deferred Compensation Plan), as amended and restated effective August 1, 2016, incorporated by reference to Exhibit 10(p) to the Company's Annual Report on Form 10-K for the year ended December 31, 2016.
10(m)(1)	First Amendment to the Howmet Aerospace Deferred Compensation Plan (formerly known as the Arconic Deferred Compensation Plan), effective January 1, 2018, incorporated by reference to Exhibit 10(r)(1) to the Company's Annual Report on Form 10-K for the year ended December 31, 2017.

10(n)	Summary of the Executive Split Dollar Life Insurance Plan, dated November 1990, incorporated by reference to Exhibit 10(m) to the Company's Annual Report on Form 10-K for the year ended December 31, 1990.
10(o)	Amended and Restated Dividend Equivalent Compensation Plan, effective January 1, 1997, incorporated by reference to Exhibit 10(h) to the Company's Quarterly Report on Form 10-Q for the quarter ended September 30, 2004.
10(p)	Form of Indemnity Agreement between the Company and individual directors or officers, incorporated by reference to Exhibit 10(j) to the Company's Annual Report on Form 10-K for the year ended December 31, 1987.
10(q)	Form of Indemnification Agreement between the Company and individual directors or officers, incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K dated January 25, 2018.
10(r)	Amended and Restated 2009 Alcoa Stock Incentive Plan, dated February 15, 2011, incorporated by reference to Exhibit 10(z)(1) to the Company's Annual Report on Form 10-K for the year ended December 31, 2010.
10(s)	Howmet Aerospace Supplemental Pension Plan for Senior Executives (formerly known as the Arconic Supplemental Pension Plan for Senior Executives), as amended and restated effective August 1, 2016, incorporated by reference to Exhibit 10(v) to the Company's Annual Report on Form 10-K for the year ended December 31, 2016.
10(s)(1)	First Amendment to Howmet Aerospace Supplemental Pension Plan for Senior Executives (formerly known as the Arconic Supplemental Pension Plan for Senior Executives), effective January 1, 2018, incorporated by reference to Exhibit 10(x)(1) to the Company's Annual Report on Form 10-K for the year ended December 31, 2017.
10(s)(2)	Second Amendment to Howmet Aerospace Supplemental Pension Plan for Senior Executives (formerly known as the Arconic Supplemental Pension Plan for Senior Executives), effective January 1, 2018, incorporated by reference to Exhibit 10(x)(2) to the Company's Annual Report on Form 10-K for the year ended December 31, 2017.
10(t)	Deferred Fee Estate Enhancement Plan for Directors, effective July 10, 1998, incorporated by reference to Exhibit 10(r) to the Company's Annual Report on Form 10-K for the year ended December 31, 1998.
10(u)	Howmet Aerospace Inc. Change in Control Severance Plan, as Amended and Restated, effective September 17, 2021, incorporated by reference to Exhibit 10.2 to the Company's Current Report on Form 8-K filed on September 23, 2021.
10(v)	Howmet Aerospace Inc. Executive Severance Plan, as Amended and Restated, effective September 17, 2021, incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on September 23, 2021.
10(w)	Letter Agreement, by and between Arconic Inc. and Michael N. Chanatry, dated as of March 20, 2018, incorporated by reference to Exhibit 10(w) to the Company's Annual Report on Form 10-K for the year ended December 31, 2021.
10(x)	Letter Agreement, from Arconic Inc. to Ken Giacobbe, dated as of February 14, 2019, incorporated by reference to Exhibit 10(hh) to the Company's Annual Report on Form 10-K for the year ended December 31, 2018.
10(y)	Letter Agreement, by and between Arconic Inc. and John C. Plant, dated as of February 13, 2019, incorporated by reference to Exhibit 10(a) to the Company's Quarterly Report on Form 10-Q for the quarter ended March 31, 2019.
10(z)	Letter Agreement, by and between Arconic Inc. and John C. Plant, dated as of August 1, 2019, incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K dated August 2, 2019.
10(aa)	Letter Agreement, by and between Arconic Inc. and John C. Plant, dated as of February 24, 2020, incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K dated February 25, 2020.

10(bb)	Letter Agreement between Howmet Aerospace Inc. and John C. Plant, dated as of June 9, 2020, incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on June 12, 2020.
10(cc)	Letter Agreement, by and between Howmet Aerospace Inc. and John C. Plant, dated as of October 14, 2021, incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on October 14, 2021.
10(dd)	Letter Agreement, by and between Howmet Aerospace Inc. and John C. Plant, dated as of December 2, 2022, incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on December 8, 2022.
10(ee)	Letter Agreement, by and between Arconic Inc. and Neil E. Marchuk, dated as of February 13, 2019, incorporated by reference to Exhibit 10(c) to the Company's Quarterly Report on Form 10-Q for the quarter ended March 31, 2019.
10(ff)	Letter Agreement between Arconic Inc. and Tolga Oal, dated as of February 24, 2020, incorporated by reference to Exhibit 10.2 to the Company's Current Report on Form 8-K dated February 25, 2020.
10(gg)	Howmet Aerospace Inc. Legal Fee Reimbursement Plan (formerly known as the Arconic Inc. Legal Fee Reimbursement Plan), effective as of April 30, 2018, incorporated by reference to Exhibit 10(b) to the Company's Quarterly Report on Form 10-Q for the quarter ended March 31, 2018.
10(hh)	2013 Howmet Aerospace Stock Incentive Plan, as Amended and Restated, effective September 30, 2020, incorporated by reference to Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q for the quarter ended September 30, 2020.
10(ii)	Terms and Conditions for Stock Option Awards, effective May 3, 2013, incorporated by reference to Exhibit 10(b) to the Company's Current Report on Form 8-K dated May 8, 2013.
10(jj)	Terms and Conditions for Stock Option Awards under the 2013 Howmet Aerospace Stock Incentive Plan, effective July 22, 2016, incorporated by reference to Exhibit 10(d) to the Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 2016.
10(kk)	Global Stock Option Award Agreement, effective January 19, 2018, incorporated by reference to Exhibit 10(uu) to the Company's Annual Report on Form 10-K for the year ended December 31, 2017.
10(ll)	Form of Stock Option Award Agreement, incorporated by reference to Exhibit 10(f) to the Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 2018.
10(mm)	Terms and Conditions for Restricted Share Units for Annual Director Awards under the 2013 Howmet Aerospace Stock Incentive Plan, effective November 30, 2016, incorporated by reference to Exhibit 10(vv) to the Company's Annual Report on Form 10-K for the year ended December 31, 2016.
10(nn)	Terms and Conditions for Restricted Share Units for Annual Director Awards under the 2013 Howmet Aerospace Stock Incentive Plan, as Amended and Restated, effective December 5, 2017, incorporated by reference to Exhibit 10(a) to the Company's Quarterly Report on Form 10-Q for the quarter ended March 31, 2018.
10(oo)	Terms and Conditions for Deferred Fee Restricted Share Units for Director Awards under the 2013 Howmet Aerospace Stock Incentive Plan, effective November 30, 2016, incorporated by reference to Exhibit 10(ww) to the Company's Annual Report on Form 10-K for the year ended December 31, 2016.
10(pp)	Global Restricted Share Unit Award Agreement, effective January 19, 2018, incorporated by reference to Exhibit 10(eee) to the Company's Annual Report on Form 10-K for the year ended December 31, 2017.
10(qq)	Terms and Conditions for Restricted Share Units issued on or after January 19, 2018, under the 2013 Howmet Aerospace Stock Incentive Plan, effective January 19, 2018, incorporated by reference to Exhibit 10(fff) to the Company's Annual Report on Form 10-K for the year ended December 31, 2017.

10(rr)	Form of Restricted Share Unit Award Agreement, incorporated by reference to Exhibit 10(g) to the Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 2018.
10(ss)	Global Restricted Share Unit Award Agreement, effective September 30, 2020, incorporated by reference to Exhibit 10.4 to the Company's Quarterly Report on Form 10-Q for the quarter ended September 30, 2020.
10(tt)	Global Stock Option Award Agreement, effective September 30, 2020, incorporated by reference to Exhibit 10.5 to the Company's Quarterly Report on Form 10-Q for the quarter ended September 30, 2020.
10(uu)	Global Special Retention Award Agreement, effective September 30, 2020, incorporated by reference to Exhibit 10.6 to the Company's Quarterly Report on Form 10-Q for the quarter ended September 30, 2020.
10(vv)	Terms and Conditions for Restricted Share Units, effective September 30, 2020, incorporated by reference to Exhibit 10.7 to the Company's Quarterly Report on Form 10-Q for the quarter ended September 30, 2020.
10(ww)	Form of Confidentiality, Non-Competition, and Non-Solicitation Agreement, incorporated by reference to Exhibit 10.4 to the Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 2021.
10(xx)	Letter Agreement, by and between Howmet Aerospace Inc. and Lola Lin, dated as of May 5, 2021, incorporated by reference to Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 2021.
10(yy)	Restricted Share Unit Award Agreement - Annual Equity Award for Lola Lin, effective July 15, 2021 incorporated by reference to Exhibit 10.2 to the Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 2021.
21	Subsidiaries of the Registrant.
23	Consent of Independent Registered Public Accounting Firm.
24	Power of Attorney.
31	Certifications pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
32	Certification pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
101. INS	Inline XBRL Instance Document.
101. SCH	Inline XBRL Taxonomy Extension Schema Document.
101. CAL	Inline XBRL Taxonomy Extension Calculation Linkbase Document.
101. DEF	Inline XBRL Taxonomy Extension Definition Linkbase Document.
101. LAB	Inline XBRL Taxonomy Extension Label Linkbase Document.
101. PRE	Inline XBRL Taxonomy Extension Presentation Linkbase Document.
104	The cover page of this Annual Report on Form 10-K for the year ended December 31, 2022 (formatted in Inline XBRL and contained in Exhibit 101).

* Exhibit Nos. 10(f) through 10(yy) are management contracts or compensatory plans required to be filed as Exhibits to this Form 10-K.

Amendments and modifications to other Exhibits previously filed have been omitted when in the opinion of the registrant such Exhibits as amended or modified are no longer material or, in certain instances, are no longer required to be filed as Exhibits.

Certain instruments defining the rights of holders of long-term debt securities of the Registrant and its subsidiaries are omitted pursuant to Item 601(b)(4) (iii) of Regulation S-K. The Registrant hereby undertakes to furnish to the SEC, upon request, copies of any such instruments.

Item 16. Form 10-K Summary.

None.

Third Supplemental Tax and Project Certificate and Agreement

As of December 31, 2022 and effective as of 12:01 a.m. on January 1, 2023

The undersigned, on behalf of, respectively, Howmet Aerospace Inc., a Delaware corporation (the “**Borrower**”), and Arconic US LLC, a Delaware limited liability company (the “**Prospective Owner**”), and, solely with respect to Section 10 hereof, Arconic Corporation, a Delaware corporation (“**Arconic Corp.**”), acknowledge, agree, certify and represent as set forth below in this Third Supplemental Tax and Project Certificate and Agreement (this “**Third Supplement**”). This Third Supplement supplements (i) the Tax Exemption Certificate and Agreement, dated August 14, 2012 (the “**Original Tax Agreement**”), among the Iowa Finance Authority (the “**Issuer**”), Arconic Inc., a Pennsylvania corporation (which was subsequently reincorporated as a Delaware corporation by means of a merger of the Pennsylvania corporation with a newly formed direct wholly owned subsidiary incorporated in Delaware) formerly known as Alcoa Inc., as original borrower (the “**Original Borrower**”), and U.S. Bank National Association, as trustee (the “**Trustee**”), and (ii) the Project Certificate, dated August 14, 2012 (the “**Original Project Certificate**”), of the Original Borrower, each as previously supplemented by (a) the Supplemental Tax and Project Certificate, dated as of December 29, 2017 and effective December 31, 2017 (the “**First Supplement**”), between the Original Borrower and the Borrower, and (b) the Second Supplemental Tax and Project Certificate and Agreement, dated as of March 31, 2020 and effective as of April 1, 2020 (the “**Second Supplement**”), among the Borrower (then named Arconic Inc. as of March 31, 2020), Arconic Davenport LLC (the “**Owner**”) and Arconic Corp. (then named Arconic Rolled Products Corporation as of March 31, 2020). The Original Tax Agreement and the Original Project Certificate, each as supplemented by the First Supplement and the Second Supplement, are referred to herein together as the “**Tax Agreement.**” Capitalized terms used herein and not defined herein have the meanings set forth in the Tax Agreement.

This Third Supplement is executed and delivered in connection with the anticipated merger of the Owner with and into the Prospective Owner (the “**Transaction**”).

1. **Authority.** Each of the undersigned represents that it has full authority to make the statements contained in this Third Supplement on behalf of, respectively, the Borrower and the Prospective Owner.

2. **Familiarity with Proceedings.** The undersigned representative of the Borrower certifies that such undersigned is familiar with the proceedings taken preliminary to and in connection with the issuance by the Issuer of its Midwestern Disaster Area Revenue Bonds (Alcoa Inc. Project) Series 2012 in the aggregate principal amount of \$250,000,000 (the “**Bonds**”) and the execution and delivery of the Tax Agreement. The undersigned representative of the Borrower and the undersigned representative of the Prospective Owner each certifies that such undersigned is familiar with (a) the purposes of the Bonds and the purposes and uses of the Project and (b) the Transaction. The undersigned representative of the Prospective Owner has reviewed the Tax Agreement.

3. **Delegation of Responsibility.** The Borrower hereby delegates to the Prospective Owner the responsibility for operating all components of the Project in a manner and location consistent with the definition and description of the Project set forth in the Tax Agreement. Such delegation is effective on the earlier of the date that title to the Project transfers to the Prospective Owner and the date the Prospective Owner commences operation of the Project. The Prospective Owner hereby accepts such delegation and agrees to such commencement date.

4. **Continuing Application Notwithstanding Delegation.** For the benefit of the Issuer and the registered owners of the Bonds from time to time, the Borrower acknowledges and agrees that it remains responsible for complying or causing the Prospective Owner to comply with all provisions of the Tax Agreement notwithstanding the Transaction and the delegation described in Section 3 above.

5. **Notification, Recordkeeping and Cooperation to Maintain Tax Status.** The Prospective Owner agrees to provide written notice to the Borrower and the Trustee at least 90 days prior to (a) any change in ownership of any portion of the Project or (b) any change in the operation or location of any portion of the Project that is inconsistent with the description of the operation or location of the Project set forth in the Tax Agreement. The Borrower agrees to retain any such notices with its books and records for the Bonds for a period of not less than four years following the later of the final payment or redemption of the Bonds or any obligations issued or executed and delivered to refund the Bonds. The Borrower and the Prospective Owner agree that, in the event any change in ownership or operation of any portion of the Project causes or threatens to cause a violation of the agreements or covenants set forth in the Tax Agreement or otherwise threatens the continued status of the Bonds as tax-exempt obligations under Section 103 of the Code, the Borrower and the Prospective Owner will cooperate to take such actions as may be necessary in the opinion of Bond Counsel delivered to the Issuer and the Trustee to remediate such violation or adverse impact on the status of the Bonds. The Prospective Owner further agrees to cooperate with the Borrower, the Issuer and the Trustee in the event of an examination of the Bonds by the Internal Revenue Service or a ruling or closing agreement request made to the Internal Revenue Service, including but not limited to providing information concerning the location, ownership and use of any component of the Project and any Gross Proceeds relating to the Project (such as, for example, any Gross Proceeds from any sale or other disposition of any portion of the Project).

6. **Indemnification.** In addition to (but not in duplication of) its other indemnification obligations (if any) under the Separation and Distribution Agreement dated as of March 31, 2020 by and between Borrower and Arconic Corp. (the “**Separation and Distribution Agreement**”) and or any other Ancillary Agreement (as defined in the Separation and Distribution Agreement), the Prospective Owner will pay, and will defend, indemnify and hold the Borrower, and its respective past, present and future members, officers, directors, employees, agents and any other person, if any, who “controls” the Borrower, as that term is defined in Section 15 of the Securities Act of 1933, as amended, and each of the heirs, executors, successors and assigns of the foregoing (the Borrower and the other listed persons, collectively referred to as, the “**Indemnified Persons**”) harmless from and against any and all liabilities, losses, damages, taxes, penalties, costs and expenses (including attorneys’ fees and expenses), causes of action, suits, proceedings, claims, demands, tax reviews and audits of the Internal Revenue Service, closing agreements with the Internal Revenue Service, investigations and judgments of whatsoever kind and nature (including, but not limited to, those arising or resulting from any injury to or death of any person or damage to property) arising from or in any manner directly or indirectly growing out of or connected with the following:

- (1) the use, non-use, condition or occupancy of the Project, including any repairs, construction, alterations, renovation, relocation, remodeling and equipping thereof or thereto or the condition of the Project including adjoining sidewalks, streets or alleys and any equipment or facilities at any time located on or connected with the Project or used in connection therewith but which are not the result of the gross negligence of the Borrower;
- (2) a violation of any agreement, warranty, covenant or condition of (i) the Loan Agreement, dated as of August 1, 2012, between the Issuer and the Borrower, as successor to the Original Borrower pursuant to the Assumption Agreement, dated

as of December 29, 2017, between the Original Borrower and the Borrower, (ii) the Tax Agreement or (iii) any other agreement executed in connection with the issuance of the Bonds relating to the use, non-use or relocation of the Project (in each case, to the extent caused by any action or omission of the Prospective Owner or any of its subsidiaries or other affiliates);

- (3) a violation by the Prospective Owner of any contract, agreement or restriction by the Prospective Owner relating to the Project (including this Third Supplement);
- (4) a violation by the Prospective Owner or any of its subsidiaries or other affiliates of any law, ordinance, rule, regulation or court order affecting the Project or the ownership, occupancy or use thereof; or
- (5) a failure by the Prospective Owner or any of its subsidiaries or other affiliates to comply with any applicable provisions of the Internal Revenue Code of 1986, as amended, any successor statutes thereto, the treasury regulations promulgated thereunder or pertinent provisions of other administrative pronouncements of the Internal Revenue Service or the United States Department of the Treasury relating to the use, non-use or relocation of the Project.

In case any claim is made or any action is brought against one or more of the Indemnified Persons in respect of which indemnity can be sought against the Prospective Owner pursuant to the preceding paragraph, the Indemnified Person seeking indemnity must promptly notify the Prospective Owner, in writing, and the Prospective Owner (a) must promptly assume the defense thereof, including the employment of counsel chosen by the Prospective Owner and approved by the Borrower (provided, that such approval by the Borrower may not be unreasonably withheld) and (b) must pay all expenses relating thereto. If any Indemnified Person is advised in a written opinion of counsel that there may be legal defenses available to such Indemnified Person which are adverse to or in conflict with those available to the Prospective Owner, or that the defense of such Indemnified Person should be handled by separate counsel, the Prospective Owner does not have the right to assume the defense of such Indemnified Person, but the Prospective Owner will be responsible for the reasonable fees and expenses of counsel retained by such Indemnified Person in assuming its own defense, and provided also that, if the Prospective Owner has failed to assume the defense of such action or to retain counsel reasonably satisfactory to the Borrower within a reasonable time after notice of the commencement of such action, such Indemnified Person may assume the defense of such action and the reasonable fees and expenses of counsel retained by the Indemnified Person must be paid by the Prospective Owner. Notwithstanding the foregoing, any one or more of the Indemnified Persons has the right to employ separate counsel with respect to any such claim or in any such action and to participate in the defense thereof, but the fees and expenses of such counsel must be paid by such Indemnified Person unless the employment of such counsel has been consented to in writing by the Prospective Owner or unless the provisions of the immediately preceding sentence are applicable. Neither the Indemnified Person nor the Prospective Owner may settle or compromise any claim or action in respect of which indemnity is sought without the prior written consent of the other party, which consent may not be unreasonably withheld, unless such settlement or compromise is solely for monetary damages that are fully payable by the settling or compromising party, does not involve any admission, finding or determination of wrongdoing or violation of law by the non-settling or non-compromising party and provides for a full, unconditional and irrevocable release of the non-settling or non-compromising party from all liability in connection with the claim or action. If any claim or action is settled with the consent of the Prospective Owner, or if there is a final judgment in favor of the third-party plaintiff in any such action with or without consent, the Prospective Owner agrees to indemnify and hold harmless the Indemnified Person from and against any loss, liability or expense by reason of such settlement or judgment.

7. **Status of the Project.** The Borrower represents that the description of the Project set forth in the Tax Agreement was true, correct and complete as of March 31, 2020. The Borrower further represents that as of March 31, 2020, there had been no changes to the Project since the date the Bonds were issued on August 14, 2012 or since the date the Project was placed in service and that all of the components of the Project were at that time still located and operated exclusively in Scott County, Iowa. The Owner represents that the description of the Project set forth in the Tax Agreement is true, correct and complete in all material respects as of the date hereof. The Owner further represents that as of the date hereof, there have been no material changes to the Project since March 31, 2020 and that all of the components of the Project are still located and operated exclusively in Scott County, Iowa. The Owner and the Prospective Owner each represents that there will be no change to the location and operation of the Project as a result of the Transaction.

8. **No Reissuance.** The Borrower and the Prospective Owner each acknowledges that the Transaction is not intended to cause a reissuance, for federal income tax purposes, of the Bonds. The Borrower represents that it will remain the borrower under the Loan Agreement after the Transaction has been completed and that it is not assigning its responsibilities under the Loan Agreement (or any guarantees relating to the Bonds) to the Prospective Owner or to any other entity. As a result of the Transaction, there will be no substantial enhancement or impairment of the Borrower's capacity to meet the payment obligations under the Loan Agreement. The Borrower acknowledges that any modifications hereafter to any document relating to the Bonds may cause some or all of the Bonds to be reissued (and therefore deemed exchanged by the registered owners thereof) for federal income tax purposes. The Borrower covenants to provide the Issuer and the Trustee with an approving opinion of Bond Counsel prior to agreeing to any such amendments or other modifications to any of such documents.

9. **Third Party Beneficiaries.** The Issuer and the Trustee are hereby deemed third party beneficiaries of this Third Supplement.

10. **Guarantee.** Arconic Corp. hereby agrees to cause the Prospective Owner to perform all of its representations, warranties, covenants, obligations, agreements and undertakings made or required to be performed by the Prospective Owner under this Third Supplement. As a material inducement to the Borrower's willingness to enter into this Third Supplement and perform its obligations hereunder, Arconic Corp. (a) hereby unconditionally guarantees to the Borrower the full performance and payment by the Prospective Owner of each of its covenants, obligations and undertakings under this Third Supplement (such covenants, obligations and undertakings, the "**Guaranteed Obligations**") and (b) shall be liable for any breach of any representation, warranty, covenant or obligation of the Prospective Owner under this Third Supplement. Arconic Corp. hereby represents, acknowledges and agrees that any breach of, or other failure to perform, any such representation, warranty, covenant, obligation, agreement or undertaking of the Prospective Owner shall also be deemed to be a breach or failure to perform by Arconic Corp., and the Borrower shall have the right, exercisable in its sole discretion, to pursue any and all available remedies it may have arising out of any such breach or nonperformance directly against either or both of Arconic Corp. and the Prospective Owner in the first instance. This is a guarantee of payment and performance and not collectability. Arconic Corp. hereby waives diligence, presentment, promptness, demand of performance, notice of acceptance of this guarantee, notice of non-performance, default, dishonor and protest, notice of any Guaranteed Obligations incurred, all defenses which may be available by virtue of any valuation, stay, moratorium law or other similar law now or hereafter in effect, all suretyship defenses, filing of any claim, any right to require any proceeding first against the Prospective Owner, protest, notice and all demands whatsoever in connection with the performance of its obligations set forth in this Third Supplement. Arconic Corp. agrees that the Guaranteed Obligations shall not be discharged except by complete performance or payment of the Guaranteed Obligations, as applicable, and that the obligations of Arconic Corp. hereunder shall

not be released or discharged, in whole or in part, or otherwise affected by (i) the failure or delay on the part of the Borrower to assert any claim or demand or to enforce any right or remedy against the Prospective Owner or Arconic Corp.; (ii) any change in the time, place or manner of payment of any of the Guaranteed Obligations or any waiver, compromise, consolidation or other amendment or modification of any of the terms or provisions of this Third Supplement made in accordance with the terms thereof or any agreement evidencing, securing or otherwise executed in connection with any of the Guaranteed Obligations; (iii) any change in the corporate existence, structure or ownership of Arconic Corp., Prospective Owner or any other person interested in the transactions contemplated by this Third Supplement; or (iv) the adequacy of any other means Borrower may have of obtaining payment or performance related to any of the Guaranteed Obligations. If at any time payment or performance under this Third Supplement is rescinded or must be otherwise restored or returned by the Borrower upon the insolvency, bankruptcy or reorganization of the Prospective Owner or Arconic Corp. or otherwise, Arconic Corp.'s obligations hereunder with respect to such payment or performance shall be reinstated upon such restoration or return being made by the Borrower, all as though such payment had not been made. Arconic Corp. acknowledges that it will receive substantial direct and indirect benefits from the transactions contemplated by this Third Supplement.

[Signature page follows]

IN WITNESS WHEREOF, the parties hereto have duly executed this Third Supplement as of the date first written above.

HOWMET AEROSPACE INC.

By /s/ Paul Myron
Name Paul Myron
Title VP, Treasurer

ARCONIC US LLC

By /s/ Marcelo Morgueta
Name Marcelo Morgueta
Title VP Finance and Treasurer

ARCONIC DAVENPORT LLC

By /s/ Marcelo Morgueta
Name Marcelo Morgueta
Title VP Finance and Treasurer

ARCONIC CORPORATION (solely with respect to
section 10)

By /s/ Marcelo Morgueta
Name Marcelo Morgueta
Title VP Finance and Treasurer

[Signature Page to Third Supplement]

AMENDMENT NO. 1 TO CREDIT AGREEMENT

This AMENDMENT NO. 1 TO CREDIT AGREEMENT, dated as of February 13, 2023 (this "Amendment"), relating to the Credit Agreement described below, is entered into by and among Howmet Aerospace Inc., a Delaware corporation ("Howmet"), the Lenders party hereto, and Citibank, N.A., as administrative agent for the Lenders (in such capacity, the "Administrative Agent"). Capitalized terms used but not otherwise defined herein have the meanings assigned to such terms in the Existing Credit Agreement referenced below.

WITNESSETH:

WHEREAS, reference is made to that certain Amended and Restated Five-Year Revolving Credit Agreement, dated as of September 28, 2021 (as amended, restated, amended and restated, supplemented or otherwise modified from time to time, the "Existing Credit Agreement"; the Existing Credit Agreement, as amended by this Amendment, the "Credit Agreement"), among Howmet, the lenders and issuers from time to time party thereto, the Administrative Agent and JPMorgan Chase Bank, N.A., as Syndication Agent;

WHEREAS, Howmet has requested that the Existing Credit Agreement be amended on the terms and conditions set forth herein;

WHEREAS, Howmet has requested, and the Lenders and the Administrative Agent have agreed, on the terms and conditions set forth herein, to make certain amendments to the Existing Credit Agreement as provided herein;

NOW, THEREFORE, in consideration of the foregoing and for other good and valuable consideration, the receipt, adequacy and sufficiency of which are hereby acknowledged, the parties hereto agree as follows:

SECTION 1. Definitions. Unless otherwise specifically defined herein, each term used herein (including in the recitals above) that is defined in the Credit Agreement has the meaning assigned to such term in the Credit Agreement.

SECTION 2. Amendments to the Existing Credit Agreement upon the Amendment No. 1 Effective Date. Subject to the satisfaction of the conditions set forth in Section 3 below, the parties hereto agree that, on the Amendment No. 1 Effective Date (as defined below), the Existing Credit Agreement is hereby amended and restated in its entirety as set forth in Exhibit A attached hereto (the "Amended Credit Agreement").

SECTION 3. Conditions Precedent to Amendment No. 1 Effective Date.

The amendments set forth under Section 2 herein shall be effective upon the date on which the following conditions precedent are satisfied (such date, the "Amendment No. 1 Effective Date"):

(a) Amendment. The Administrative Agent shall have received counterparts of this Amendment, duly executed by Howmet and the Lenders.

(b) Expenses. The Administrative Agent shall have received payment of any amounts due under Section 10.05 (Expenses, Indemnity) of the Existing Credit Agreement.

SECTION 4. Representations and Warranties. To induce the Administrative Agent and the Lenders party hereto to enter into this Amendment, Howmet hereby represents and warrants to the Administrative Agent and the Lenders, that:

(a) Authorization. Howmet has the power and authority, corporate or otherwise, to execute, deliver and carry out the provisions of this Amendment, or to become a party to this Amendment in accordance with the terms hereof and to perform its obligations hereunder and under the Credit Agreement as modified hereby, and all such action has been duly and validly authorized by all necessary proceedings, corporate or otherwise, on its part.

(b) Enforceability. This Amendment has been duly executed and delivered by Howmet and this Amendment and the Credit Agreement as modified hereby constitute the legal, valid and binding obligations of Howmet, enforceable in accordance with their respective terms, except as limited by bankruptcy, insolvency or other similar laws of general application affecting the enforcement of creditors' rights or by general principles of equity limiting the availability of equitable remedies.

(c) Governmental Approvals. No authorization, consent, approval, license, exemption or other action by, and no registration, qualification, designation, declaration or filing with, any Governmental Authority (other than filings under the Securities Exchange Act of 1934, as amended, and the rules and regulations of the SEC promulgated thereunder) is necessary in connection with Howmet's execution and delivery of this Amendment, the consummation by Howmet of the transactions contemplated hereby or Howmet's performance of or compliance with the terms and conditions hereof or of the Credit Agreement as modified hereby.

(d) No Conflict. None of the execution and delivery by Howmet of this Amendment, the consummation by Howmet of the transactions contemplated hereby or the performance by Howmet of or compliance by Howmet with the terms and conditions hereof or of the Credit Agreement as modified hereby will (a) violate any law, constitution, statute, treaty, regulation, rule, ordinance, order, injunction, writ, decree or award of any Governmental Authority to which it is subject, (b) conflict with or result in a breach or default under its charter or Memorandum and Articles of Association or by-laws (or equivalent organizational or governing documents), as applicable, (c) conflict with or result in a breach or default which is material in the context of this Amendment under any agreement or instrument to which Howmet is a party or by which it or any of its properties, whether now owned or hereafter acquired, may be subject or bound or (d) result in the creation or imposition of any Lien prohibited by Section 6.01 of the Credit Agreement upon any property or assets, whether now owned or hereafter acquired, of Howmet.

(e) No Default; Representations and Warranties. On and as of the Amendment No. 1 Effective Date, (i) no Default or Event of Default has occurred and is continuing and (ii) the representations and warranties of Howmet set forth in the Loan Documents are true and correct in all material respects (or in all respects if such representation or warranty is qualified by Material Adverse Effect or other materiality qualifier) with the same effect as though made on and as of the date hereof, except to the extent that any such representation or warranty specifically refers to an earlier date, in which case such representation or warranty is true and correct in all material respects (or in all respects if such representation or warranty is qualified by Material Adverse Effect or other materiality qualifier) as of such earlier date.

SECTION 5. Reference to and Effect on the Existing Credit Agreement.

(a) From the Amendment No. 1 Effective Date (i) this Amendment and the Existing Credit Agreement shall be construed as a single instrument and (ii) each reference in the Existing Credit Agreement to "the Credit Agreement", "this Agreement", "hereunder", "hereof" or words of like import,

and each reference in each of the other Loan Documents to “the Credit Agreement”, “thereunder”, “thereof” or words of like import, shall mean and be a reference to the Credit Agreement as amended hereby.

(b) Except as expressly set forth in this Amendment, all of the terms and provisions of the Existing Credit Agreement, each other Loan Document, and all other instruments and agreements executed in connection therewith are and shall remain in full force and effect and are hereby reaffirmed, ratified and confirmed, and the Borrowers shall continue to be bound by all of such terms and provisions.

(c) Except with respect to the subject matter hereof, the execution, delivery and effectiveness of this Amendment shall not operate as a waiver of any right, power or remedy of the Administrative Agent or the Lenders, nor constitute a waiver of any provision of the Credit Agreement or any other documents, instruments and agreements executed and/or delivered in connection therewith.

(d) This Amendment is a Loan Document under (and as defined in) the Credit Agreement.

SECTION 6. Miscellaneous.

(a) Governing Law. **THIS AMENDMENT SHALL BE CONSTRUED IN ACCORDANCE WITH AND GOVERNED BY THE LAWS OF THE STATE OF NEW YORK WITHOUT REGARD TO ANY CONFLICT OF LAWS PRINCIPLES THEREOF THAT WOULD CALL FOR THE APPLICATION OF THE LAWS OF ANY OTHER JURISDICTION. SECTION 10.11 AND 10.15 OF THE CREDIT AGREEMENT ARE HEREBY INCORPORATED BY REFERENCE INTO THIS AMENDMENT AND SHALL APPLY HERETO.**

(b) Headings. Section headings used herein are for convenience of reference only, are not part of this Amendment and are not to affect the construction of, or to be taken into consideration in interpreting, this Amendment.

(c) Counterparts. This Amendment may be executed in two or more counterparts, each of which shall constitute an original but all of which when taken together shall constitute but one contract, and shall become effective as provided in Section 10.03 of the Credit Agreement. Delivery of an executed counterpart of a signature page of this Amendment by facsimile, PDF or any other electronic means that reproduces an image of the actual executed signature page shall be effective as delivery of a manually executed counterpart of this Amendment. The words “execution,” “execute,” “signature” and words of like import in this Agreement shall be deemed to include electronic signatures, which shall be of the same legal effect, validity or enforceability as a manually executed signature, to the extent and as provided for in any applicable law, including the Federal Electronic Signatures in Global and National Commerce Act, the New York State Electronic Signatures and Records Act or any other similar state laws based on the Uniform Electronic Transactions Act.

[Signature Pages Follow]

IN WITNESS WHEREOF, the parties hereto have caused this Amendment to be duly executed by their respective authorized officers as of the day and year first above written.

HOWMET AEROSPACE INC.

By: /s/ Paul Myron
Name: Paul Myron
Title: VP, Treasurer

[Signature Page to Amendment No. 1 to Credit Agreement]

CITIBANK, N.A.,
individually as a Lender and as Administrative Agent

By: /s/ Michael Vondriska
Name: Michael Vondriska
Title: Vice President

[Signature Page to Amendment No. 1 to Credit Agreement]

JPMORGAN CHASE BANK, N.A., as a Lender

By: /s/ James Shender
Name: James Shender
Title: Executive Director

[Signature Page to Amendment No. 1 to Credit Agreement]

BANK OF MONTREAL, as a Lender

By: /s/ Patrick Hartweger
Name: Patrick Hartweger
Title: Managing Director

[Signature Page to Amendment No. 1 to Credit Agreement]

BNP PARIBAS, as a Lender

By: /s/ Tony Baratta
Name: Tony Baratta
Title: Managing Director

By: /s/ Michael Hoffman
Name: Michael Hoffman
Title: Managing Director

[Signature Page to Amendment No. 1 to Credit Agreement]

FIFTH THIRD BANK, NATIONAL ASSOCIATION, as a Lender

By: /s/ Lindsay Bossong _____
Name: Lindsay Bossong
Title: Principal

[Signature Page to Amendment No. 1 to Credit Agreement]

GOLDMAN SACHS BANK USA, as a Lender

By: /s/ Keshia Leday
Name: Keshia Leday
Title: Authorized Signatory

[Signature Page to Amendment No. 1 to Credit Agreement]

MIZUHO BANK, LTD., as a Lender

By: /s/ Donna DeMagistris
Name: Donna DeMagistris
Title: Executive Director

[Signature Page to Amendment No. 1 to Credit Agreement]

MORGAN STANLEY BANK, N.A., as a Lender

By: /s/ Jack Kuhns
Name: Jack Kuhns
Title: Authorized Signatory

[Signature Page to Amendment No. 1 to Credit Agreement]

TRUIST BANK, as a Lender

By: /s/ Christian Jacobsen
Name: Christian Jacobsen
Title: Director

[Signature Page to Amendment No. 1 to Credit Agreement]

CITIZENS BANK, N.A., as a Lender

By: /s/ A. Paul Dawley
Name: A. Paul Dawley
Title: Senior Vice President

[Signature Page to Amendment No. 1 to Credit Agreement]

MUFG BANK, LTD., as a Lender

By: /s/ Richard Ferrara
Name: Richard Ferrara
Title: Vice President

[Signature Page to Amendment No. 1 to Credit Agreement]

PNC BANK, NATIONAL ASSOCIATION, as a Lender

By: /s/ Joseph McElhinny
Name: Joseph McElhinny
Title: Vice President

[Signature Page to Amendment No. 1 to Credit Agreement]

SUMITOMO MITSUI BANKING CORPORATION,
as a Lender

By: /s/ Minxiao Tian
Name: Minxiao Tian
Title: Director

[Signature Page to Amendment No. 1 to Credit Agreement]

TD BANK, N.A., as a Lender

By: /s/ Bernadette Collins
Name: Bernadette Collins
Title: Senior Vice President

[Signature Page to Amendment No. 1 to Credit Agreement]

ING BANK N.V., DUBLIN BRANCH, as a Lender

By: /s/ Cormac Langford
Name: Cormac Langford
Title: Director

By: /s/ Louise Gough
Name: Louise Gough
Title: Vice President

[Signature Page to Amendment No. 1 to Credit Agreement]

INTESA SANPAOLO S.P.A., NEW YORK BRANCH, as a Lender

By: /s/ Neil Derfler
Name: Neil Derfler
Title: Global Relationship Manager

By: /s/ Alessandro Toigo
Name: Alessandro Toigo
Title: Head of Corporate Desk

[Signature Page to Amendment No. 1 to Credit Agreement]

THE BANK OF NEW YORK MELLON, as a Lender

By: /s/ Tak Cheng
Name: Tak Cheng
Title: Vice President

[Signature Page to Amendment No. 1 to Credit Agreement]

AMENDED AND RESTATED
FIVE-YEAR
REVOLVING CREDIT AGREEMENT

Dated as of September 28, 2021,

Among

HOWMET AEROSPACE INC.,
as Borrower,

THE LENDERS AND ISSUERS NAMED HEREIN,

CITIBANK, N.A.,
as Administrative Agent,

JPMORGAN CHASE BANK, N.A.,
as Syndication Agent

and

BMO CAPITAL MARKETS CORP.,
BNP PARIBAS,
FIFTH THIRD BANK, NATIONAL ASSOCIATION,
GOLDMAN SACHS BANK USA,
MIZUHO BANK, LTD.,
MORGAN STANLEY SENIOR FUNDING, INC.,
and
TRUIST BANK,
as Co-Documentation Agents

CITIBANK, N.A., JPMORGAN CHASE BANK, N.A., BMO CAPITAL MARKETS CORP.,
BNP PARIBAS, FIFTH THIRD BANK, NATIONAL ASSOCIATION,
GOLDMAN SACHS BANK USA, MIZUHO BANK, LTD.,
MORGAN STANLEY SENIOR FUNDING, INC., and TRUIST SECURITIES, INC., as Joint Lead Arrangers and Bookrunners

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AMENDED AND RESTATED CREDIT AGREEMENT

AMENDED AND RESTATED FIVE-YEAR REVOLVING CREDIT AGREEMENT dated as of September 28, 2021 (as the same may be amended, modified or supplemented from time to time, the "Agreement"), among HOWMET AEROSPACE INC., a Delaware corporation, ("Howmet"), the Lenders (such term and each other capitalized term used but not defined herein having the meaning ascribed thereto in Article I), the Issuers, CITIBANK, N.A., as Administrative Agent for the Lenders and Issuers and JPMORGAN CHASE BANK, N.A., as Syndication Agent.

WHEREAS, Howmet, the Lenders and Issuers party thereto from time to time, Citibank, N.A., as Administrative Agent and JPMorgan Chase Bank, N.A., as Syndication Agent, have previously entered into that certain Five-Year Revolving Credit Agreement, dated as of July 25, 2014 (as amended and extended by the letter agreement, dated June 5, 2015, and as further amended pursuant to Amendment No. 1 to Credit Agreement, dated as of September 16, 2016, Amendment No. 2 to Credit Agreement, dated as of June 29, 2018, Amendment No. 3 to Credit Agreement, dated as of March 4, 2020, Amendment No. 4 to Credit Agreement, dated as of June 26, 2020, and Amendment No. 5 to Credit Agreement, dated as of March 29, 2021, the "Existing Credit Agreement");

WHEREAS, Howmet has requested that the Existing Credit Agreement be amended and restated on the terms and conditions set forth herein to provide for, among other things, the establishment of a \$1,000,000,000 senior unsecured revolving credit and letter of credit facility (the "New Facility");

WHEREAS, the New Facility will refinance and replace the existing credit facility under the Existing Credit Agreement and will be established by amending the Existing Credit Agreement; and

WHEREAS, the Lenders and Issuers are willing to make available to Howmet and the Borrowing Subsidiaries such New Facility upon the terms and subject to the conditions set forth herein;

NOW, THEREFORE, in consideration of the premises and the covenants and agreements contained herein, the parties hereto hereby agree as follows:

ARTICLE I

DEFINITIONS AND CONSTRUCTION

SECTION 1.01. Defined Terms. As used in this Agreement, the following terms shall have the meanings set forth below:

"2020 Separation Documents" shall have the meaning assigned to such term in Amendment No. 3.

"Accession Agreement" shall mean an Accession Agreement substantially in the form of Exhibit D among a Prospective Lender, Howmet and the Administrative Agent.

"Adjusted Term SOFR" shall mean, for purposes of any calculation, the rate per annum equal to (a) Term SOFR for such calculation plus (b) the Term SOFR Adjustment; provided that if Adjusted Term SOFR as so determined shall ever be less than the Floor, then Adjusted Term SOFR shall be deemed to be the Floor.

“Administrative Agent” shall mean Citi, in its capacity as administrative agent for the Lenders hereunder.

“Administrative Questionnaire” shall mean an Administrative Questionnaire in the form of Exhibit B.

“Affected Financial Institution” shall mean (a) any EEA Financial Institution or (b) any UK Financial Institution.

“Affiliate” shall mean, when used with respect to a specified person, another person that directly, or indirectly through one or more intermediaries, Controls or is Controlled by or is under common Control with the person specified.

“Amendment No. 3” shall mean Amendment No. 3 to the Existing Credit Agreement, dated as of March 4, 2020.

“Applicable Margin” shall mean:

as of any date of determination, a per annum rate equal to the rate set forth below opposite the applicable Type of Loan and the Index Debt Ratings in effect on such date set forth below; provided, that in the event the Index Debt Ratings fall within different categories, the Applicable Margin shall be based on the category corresponding to the higher of such Index Debt Ratings, unless such Index Debt Ratings differ by two or more categories, in which case the spreads shall be based upon the category one level below the category corresponding to the higher of such Index Debt Ratings;

	Category 1	Category 2	Category 3	Category 4	Category 5	Category 6
	Index Debt Ratings of at least BBB+ by S&P, Fitch and/or Baa1 by Moody's	Index Debt Ratings less than Category 1, but at least BBB by S&P, Fitch and/or Baa2 by Moody's	Index Debt Ratings less than Category 2, but at least BBB- by S&P, Fitch and/or Baa3 by Moody's.	Index Debt Ratings less than Category 3, but at least BB+ by S&P, Fitch and/or Ba1 by Moody's.	Index Debt Ratings less than Category 4, but at least BB by S&P, Fitch and/or Ba2 by Moody's.	Index Debt Ratings equal to or lower than BB- by S&P, Fitch and/or Ba3 by Moody's.
Applicable Margin for SOFR Loans/EURIBOR Loans	1.015%	1.125%	1.20%	1.40%	1.70%	1.90%
Applicable Margin for Base Rate Loans	0.015%	0.125%	0.20%	0.40%	0.70%	0.90%

“Applicable Facility Fee Rate” shall mean, as of any date of determination, a per annum rate equal to the rate set forth below opposite the Index Debt Ratings in effect on such date set forth below; provided, that in the event the Index Debt Ratings fall within different categories, the Applicable Facility Fee Rate shall be based on the category corresponding to the higher of such Index Debt Ratings, unless such Index Debt Ratings differ by two or more categories, in which case the fee shall be based upon the category one level below the category corresponding to the higher of such Index Debt Ratings;

	Category 1	Category 2	Category 3	Category 4	Category 5	Category 6
	Index Debt Ratings of at least BBB+ by S&P, Fitch and/or Baa1 by Moody's	Index Debt Ratings less than Category 1, but at least BBB by S&P, Fitch and/or Baa2 by Moody's	Index Debt Ratings less than Category 2, but at least BBB- by S&P, Fitch and/or Baa3 by Moody's.	Index Debt Ratings less than Category 3, but at least BB+ by S&P, Fitch and/or Ba1 by Moody's.	Index Debt Ratings less than Category 4, but at least BB by S&P, Fitch and/or Ba2 by Moody's.	Index Debt Ratings equal to or lower than BB- by S&P, Fitch and/or Ba3 by Moody's.
Applicable Facility Fee Rate	0.11%	0.125%	0.175%	0.225%	0.30%	0.35%

“Approved Electronic Platform” shall have the meaning assigned to such term in Section 9.03(b).

“Approved Fund” shall have the meaning assigned to such term in Section 10.04(b).

“Arrangers” shall mean Citibank, N.A., JPMorgan Chase Bank, N.A., BMO Capital Markets Corp., BNP Paribas, Fifth Third Bank, National Association, Goldman Sachs Bank USA, Mizuho Bank, Ltd., Morgan Stanley Senior Funding, Inc., and Truist Securities, Inc., in their capacities as joint lead arrangers and bookrunners.

“Assignment and Assumption” shall mean an assignment and assumption entered into by a Lender and an assignee, and accepted by the Administrative Agent, in substantially the form of Exhibit A or such other form as shall be approved by the Administrative Agent.

“Available Credit” shall mean, at any time, (a) the then effective Commitments minus (b) the aggregate Revolving Credit Outstandings at such time.

“Available Tenor” shall mean, as of any date of determination and with respect to the then-current Benchmark for any Currency, as applicable, (x) if such Benchmark is a term rate, any tenor for such Benchmark (or component thereof) that is or may be used for determining the length of an Interest Period pursuant to this Agreement or (y) otherwise, any payment period for interest calculated with reference to such Benchmark (or component thereof) that is or may be used for determining any frequency of making payments of interest calculated with reference to such Benchmark pursuant to this Agreement, in each case, as of such date and not including, for the avoidance of doubt, any tenor for such Benchmark that is then-removed from the definition of “Interest Period” pursuant to Section 2.24(d).

“Bail-In Action” shall mean the exercise of any Write-Down and Conversion Powers by the applicable Resolution Authority in respect of any liability of an Affected Financial Institution.

“Bail-In Legislation” shall mean (a) with respect to any EEA Member Country implementing Article 55 of Directive 2014/59/EU of the European Parliament and of the Council of the European Union, the implementing law, regulation rule or requirement for such EEA Member Country

from time to time which is described in the EU Bail-In Legislation Schedule and (b) with respect to the United Kingdom, Part I of the United Kingdom Banking Act 2009 (as amended from time to time) and any other law, regulation or rule applicable in the United Kingdom relating to the resolution of unsound or failing banks, investment firms or other financial institutions or their affiliates (other than through liquidation, administration or other insolvency proceedings).

“Base Rate” shall mean, for any period, the rate determined by the Administrative Agent as the fluctuating interest rate per annum as shall be in effect from time to time, which rate per annum shall be equal at all times to the highest of the following:

- (a) the rate of interest announced publicly by Citi in New York, New York, from time to time, as Citi’s base rate for loans denominated in Dollars;
- (b) 0.5% per annum plus the Federal Funds Rate; and
- (c) the Adjusted Term SOFR for a one-month tenor in effect on such day (including rate floors set forth therein) plus 1.0%;
provided that the Base Rate shall not be less than the Floor.

“Base Rate Borrowing” shall mean a Borrowing comprised of Base Rate Loans.

“Base Rate Loan” shall mean any Loan bearing interest at a rate determined by reference to the Base Rate in accordance with the provisions of Article II.

“Base Rate Term SOFR Determination Day” has the meaning specified in the definition of “Term SOFR”.

“Benchmark” shall mean, initially, (i) with respect to amounts denominated in Dollars, the Term SOFR Reference Rate and (ii) with respect to amounts denominated in Euros, EURIBOR; provided that if a Benchmark Transition Event has occurred with respect to the Term SOFR Reference Rate, EURIBOR or the then-current Benchmark for the applicable Currency, then “Benchmark” shall mean the applicable Benchmark Replacement to the extent that such Benchmark Replacement has replaced such prior benchmark rate pursuant to Section 2.24(a).

“Benchmark Replacement” shall mean, with respect to any Benchmark Transition Event for any then-current Benchmark, the sum of: (a) the alternate benchmark rate that has been selected by the Administrative Agent and Howmet as the replacement for such Benchmark giving due consideration to (i) any selection or recommendation of a replacement benchmark rate or the mechanism for determining such a rate by the Relevant Governmental Body or (ii) any evolving or then-prevailing market convention for determining a benchmark rate as a replacement for such Benchmark for syndicated credit facilities denominated in the applicable Currency at such time and (b) the related Benchmark Replacement Adjustment; provided that, if such Benchmark Replacement as so determined would be less than the Floor, such Benchmark Replacement will be deemed to be the Floor for the purposes of this Agreement and the other Loan Documents.

“Benchmark Replacement Adjustment” shall mean, with respect to any replacement of any then current Benchmark with an Unadjusted Benchmark Replacement for any applicable Interest Period and Available Tenor for any setting of such Unadjusted Benchmark Replacement, the spread adjustment, or method for calculating or determining such spread adjustment, (which may be a positive or

negative value or zero) that has been selected by the Administrative Agent and Howmet giving due consideration to (a) any selection or recommendation of a spread adjustment, or method for calculating or determining such spread adjustment, for the replacement of such Benchmark with the applicable Unadjusted Benchmark Replacement by the Relevant Governmental Body or (b) any evolving or then-prevailing market convention for determining a spread adjustment, or method for calculating or determining such spread adjustment, for the replacement of such Benchmark with the applicable Unadjusted Benchmark Replacement for syndicated credit facilities denominated in the applicable Currency at such time.

“Benchmark Replacement Date” shall mean the earliest to occur of the following events with respect to the then-current Benchmark for any Currency:

(a) in the case of clause (a) or (b) of the definition of “Benchmark Transition Event,” the later of (i) the date of the public statement or publication of information referenced therein and (ii) the date on which the administrator of such Benchmark (or the published component used in the calculation thereof) permanently or indefinitely ceases to provide all Available Tenors of such Benchmark (or such component thereof); or

(b) in the case of clause (c) of the definition of “Benchmark Transition Event,” the first date on which such Benchmark (or the published component used in the calculation thereof) has been determined and announced by the regulatory supervisor for the administrator of such Benchmark (or such component thereof) to be non-representative; provided that such non-representativeness will be determined by reference to the most recent statement or publication referenced in such clause (c) and even if any Available Tenor of such Benchmark (or such component thereof) continues to be provided on such date.

For the avoidance of doubt, the “Benchmark Replacement Date” will be deemed to have occurred in the case of clause (a) or (b) with respect to any Benchmark upon the occurrence of the applicable event or events set forth therein with respect to all then-current Available Tenors of such Benchmark (or the published component used in the calculation thereof).

“Benchmark Transition Event” shall mean, with respect to the then-current Benchmark for any Currency, the occurrence of one or more of the following events with respect to such Benchmark:

(a) a public statement or publication of information by or on behalf of the administrator of such Benchmark (or the published component used in the calculation thereof) announcing that such administrator has ceased or will cease to provide all Available Tenors of such Benchmark (or such component thereof), permanently or indefinitely; provided that, at the time of such statement or publication, there is no successor administrator that will continue to provide any Available Tenor of such Benchmark (or such component thereof);

(b) a public statement or publication of information by the regulatory supervisor for the administrator of such Benchmark (or the published component used in the calculation thereof), the Board, the Federal Reserve Bank of New York, the central bank for the Currency applicable to such Benchmark, an insolvency official with jurisdiction over the administrator for such Benchmark (or such component), a resolution authority with jurisdiction over the administrator for such Benchmark (or such component) or a court or an entity with similar insolvency or resolution authority over the administrator for such Benchmark (or such component), which states that the administrator of such Benchmark (or such component) has ceased or will cease to provide all Available Tenors of such Benchmark (or such component thereof) permanently or indefinitely, provided that, at the time of such statement or publication, there is no successor administrator that will continue to provide any Available Tenor of such Benchmark (or such component thereof); or

(c) a public statement or publication of information by the regulatory supervisor for the administrator of such Benchmark (or the published component used in the calculation thereof) announcing that all Available Tenors of such Benchmark (or such component thereof) are not, or as of a specified future date will not be, representative.

For the avoidance of doubt, a “Benchmark Transition Event” will be deemed to have occurred with respect to any Benchmark if a public statement or publication of information set forth above has occurred with respect to each then-current Available Tenor of such Benchmark (or the published component used in the calculation thereof).

“Benchmark Transition Start Date” shall mean, with respect to any Benchmark, in the case of a Benchmark Transition Event, the earlier of (a) the applicable Benchmark Replacement Date and (b) if such Benchmark Transition Event is a public statement or publication of information of a prospective event, the 90th day prior to the expected date of such event as of such public statement or publication of information (or if the expected date of such prospective event is fewer than 90 days after such statement or publication, the date of such statement or publication).

“Benchmark Unavailability Period” shall mean, with respect to any then-current Benchmark for any Currency, the period (if any) (a) beginning at the time that a Benchmark Replacement Date with respect to such Benchmark has occurred if, at such time, no Benchmark Replacement has replaced such Benchmark for all purposes hereunder and under any Loan Document in accordance with Section 2.24 and (b) ending at the time that a Benchmark Replacement has replaced such Benchmark for all purposes hereunder and under any Loan Document in accordance with Section 2.24.

“Benefit Plan” shall mean any of (a) an “employee benefit plan” (as defined in ERISA) that is subject to Title I of ERISA, (b) a “plan” as defined in Section 4975 of the Code or (c) any person whose assets include (for purposes of ERISA Section 3(42) or otherwise for purposes of Title I of ERISA or Section 4975 of the Code) the assets of any such “employee benefit plan” or “plan”.

“Board” shall mean the Board of Governors of the Federal Reserve System of the United States.

“Borrowers” shall mean Howmet and the Borrowing Subsidiaries.

“Borrowing” shall mean any group of Loans of a single Type made by the Lenders on a single date and, in the case of a SOFR Borrowing or a EURIBOR Borrowing, as to which a single Interest Period is in effect.

“Borrowing Subsidiary” shall mean, at any time, each wholly-owned Subsidiary of Howmet that has been designated by Howmet as a Borrower hereunder and that has undertaken the obligations of a Borrowing Subsidiary pursuant to Section 10.04(f).

“Borrowing Subsidiaries Obligations” shall mean the Obligations of all of the Borrowing Subsidiaries.

“Business Day” shall mean a day of the year on which banks are not required or authorized to close in New York City and if the applicable Business Day relates to notices, determinations, fundings and payments in connection with EURIBOR or a Borrowing denominated in Euros, such day that is also a Target Date.

“Citi” shall mean Citibank, N.A.

“CLO” shall have the meaning assigned to such term in Section 10.04(b).

“Closing Date” shall mean, September 28, 2021.

“Co-Documentation Agents” shall mean BMO Capital Markets Corp., BNP Paribas, Fifth Third Bank, National Association, Goldman Sachs Bank USA, Mizuho Bank, Ltd., Morgan Stanley Senior Funding, Inc. and Truist Bank.

“Code” shall mean the Internal Revenue Code of 1986, as the same may be amended from time to time.

“Commitment” shall mean, with respect to each Lender, the commitment of such Lender to make Loans and acquire interests in Letters of Credit as set forth in this Agreement in the aggregate principal amount not to exceed the amount set forth opposite such Lender’s name on Schedule 2.01(a) or in any Assignment and Assumption or Accession Agreement pursuant to which such Lender first becomes a Lender hereunder, as the same may be terminated or reduced from time to time pursuant to Section 2.10 or Section 10.04(h), increased from time to time pursuant to Section 2.20 or extended pursuant to Section 2.21. As of the Closing Date, the aggregate amount of Commitments is \$1,000,000,000

“Conforming Changes” shall mean, with respect to either the use or administration of an initial Benchmark or the use, administration, adoption or implementation of any Benchmark Replacement, any technical, administrative or operational changes (including changes to the definition of “Base Rate” (if applicable), the definition of “Business Day,” the definition of “U.S. Government Securities Business Day,” the definition of “Interest Period” or any similar or analogous definition (or the addition of a concept of “interest period”), timing and frequency of determining rates and making payments of interest, timing of borrowing requests or prepayment, conversion or continuation notices, the applicability and length of lookback periods, the applicability of Section 2.14 and other technical, administrative or operational matters) that the Administrative Agent decides in its reasonable discretion may be appropriate to reflect the adoption and implementation of any such rate or to permit the use and administration thereof by the Administrative Agent in a manner substantially consistent with market practice (or, if the Administrative Agent decides that adoption of any portion of such market practice is not administratively feasible or if the Administrative Agent determines that no market practice for the administration of any such rate exists, in such other manner of administration as the Administrative Agent decides in its reasonable discretion is reasonably necessary in connection with the administration of this Agreement and the other Loan Documents).

“Consolidated EBITDA” shall mean, for any period, for Howmet and its Subsidiaries on a consolidated basis, an amount equal to Consolidated Net Income for such period plus the following to the extent deducted in calculating such Consolidated Net Income: (i) Consolidated Interest Charges for such period, (ii) the provision for federal, state, local and foreign income Taxes payable by Howmet and its Subsidiaries for such period, (iii) the amount of depreciation and amortization expense, and (iv) the aggregate amount of fees, expenses and charges incurred or attributed to Howmet and its Subsidiaries in connection with this Agreement.

“Consolidated Interest Charges” shall mean, for any period, for Howmet and its Subsidiaries on a consolidated basis, the sum of (a) all interest, premium payments, debt discount, fees, charges and related expenses of Howmet and its Subsidiaries in connection with borrowed money (including capitalized interest) or in connection with the deferred purchase price of assets, in each case, to the extent treated as interest in accordance with GAAP, and (b) the portion of rent expense of Howmet

and its Subsidiaries with respect to such period under capital leases that is treated as interest in accordance with GAAP.

“Consolidated Net Debt” shall mean, as of any date of determination, (a) Indebtedness of Howmet and its Subsidiaries on a consolidated basis, after eliminating intercompany items, as of such time minus (b) the amount by which unrestricted cash and cash equivalents, determined in accordance with GAAP, of Howmet and its Subsidiaries exceeds \$300,000,000 in the aggregate (*provided* that Consolidated Net Debt shall not be less than zero).

“Consolidated Net Income” shall mean, for any period, for Howmet and its Subsidiaries on a consolidated basis, the net income of Howmet and its Subsidiaries (excluding any unusual, non-recurring, exceptional or non-cash expenses, losses or charges and any unusual, non-recurring, exceptional or non-cash gains) for such period ((x) excluding any impact of the Designated Grenfell Liabilities or gain or loss (including as a result of insurance recoveries received directly from the insurance company or indirectly from Arconic Corporation), in each case arising from or attributable to the Grenfell Tower Fire and (y) reduced for any cash payments made during such period, whether or not such cash payments would be required to reduce net income in accordance with GAAP, resulting from the Designated Grenfell Liabilities except to the extent such payments either (i) have been reimbursed in cash directly from an insurance provider or reimbursed indirectly from Arconic Corporation or (ii) are expected to be covered and reimbursed in cash within 365 days (A) directly by an insurance provider that is financially sound and reputable and has not disputed coverage or (B) indirectly by Arconic Corporation (in each case of (A) and (B), as determined by Howmet in good faith), such adjustments pursuant to clauses (x) and (y) as set forth in reasonable detail in the certificate of a Financial Officer delivered pursuant to Section 5.01(c)(ii); *provided* that to the extent such amounts are not so reimbursed within such 365 day period, or are no longer expected to be covered and reimbursed or are disputed, then such unreimbursed amount shall reduce net income for such period).

“Consolidated Net Tangible Assets” shall mean at any time, the aggregate amount of assets (less applicable reserves and other properly deductible items) of Howmet and its consolidated Subsidiaries adjusted for inventories on the basis of cost (before application of the “last-in first-out” method of determining cost) or current market value, whichever is lower, and deducting therefrom (a) all current liabilities of such corporation and its consolidated Subsidiaries except for (i) notes and loans payable (including commercial paper), (ii) current maturities of long-term debt and (iii) current maturities of obligations under capital leases and (b) all goodwill, trade names, patents, unamortized debt discount and expenses of such corporation and its consolidated Subsidiaries (to the extent included in said aggregate amount of assets) and other like intangibles, all as set forth in the most recent consolidated balance sheet of Howmet and its consolidated Subsidiaries, delivered to the Administrative Agent pursuant to Section 5.01, computed and consolidated in accordance with GAAP.

“Control” shall mean the possession, directly or indirectly, of the power to direct or cause the direction of the management or policies of a person, whether through the ownership of Voting Stock, by contract or otherwise, and “Controlling” and “Controlled” shall have meanings correlative thereto.

“Covenant Relief Period” shall mean the period commencing on June 30, 2020, and ending on (and including) the Covenant Relief Period Termination Date.

“Covenant Relief Period Termination Date” shall mean the earlier of (a) December 31, 2022 and (b) the date on which the Administrative Agent receives a Covenant Relief Period Termination Notice from Howmet; provided that, with respect to clause (b) hereof, no Event of Default or Default shall have occurred and be continuing on such date.

“Covenant Relief Period Termination Notice” shall mean a certificate of a Responsible Officer of Howmet (a) stating that Howmet irrevocably elects to terminate the Covenant Relief Period effective as of the date set forth in such certificate (which date shall be no earlier than the date of the certificate) delivered to the Administrative Agent and (b) certifying that (x) the Consolidated Net Debt to Consolidated EBITDA as of the end of the fiscal quarter for the period of the four fiscal quarters of Howmet most recently ended did not exceed 3.50 to 1.00 and (y) at the time of and immediately after the Covenant Relief Period Termination Date no Event of Default or Default shall have occurred and be continuing.

“Currency” shall mean Dollars or Euros.

“Default” shall mean any event or condition which upon notice, lapse of time or both would constitute an Event of Default.

“Defaulting Lender” shall mean, at any time, subject to Section 2.23, (i) any Lender that has failed for two or more Business Days to comply with its obligations under this Agreement to make a Loan, make a payment to the Issuer in respect of a Letter of Credit or make any other payment due hereunder (each a “funding obligation”), unless such Lender has notified the Administrative Agent and Howmet in writing that such failure is the result of such Lender’s determination that one or more conditions precedent to funding has not been satisfied (which conditions precedent, together with the applicable default, if any, will be specifically identified in such writing) or is the subject of a specifically identified good faith dispute, (ii) any Lender that has notified the Administrative Agent, Howmet or the Issuer in writing, or has stated publicly, that it does not intend to comply with its such funding obligations hereunder, unless such writing or statement states that such position is based on such Lender’s determination that one or more conditions precedent to funding cannot be satisfied (which conditions precedent, together with the applicable default, if any, will be specifically identified in such writing or public statement), (iii) any Lender that has defaulted on its funding obligations under any other loan agreement or credit agreement or other similar/other financing agreement, (iv) any Lender that has, for three or more Business Days after written request of the Administrative Agent or Howmet, failed to confirm in writing to the Administrative Agent or Howmet that it will comply with its prospective funding obligations hereunder (provided, that such Lender will cease to be a Defaulting Lender pursuant to this *clause (iv)* upon the Administrative Agent’s or Howmet’s receipt of such written confirmation), or (v) any Lender with respect to which a Lender Insolvency Event has occurred and is continuing with respect to such Lender or its Parent Company (provided, in each case, that neither the reallocation of funding obligations provided for in Section 2.23 as a result of a Lender being a Defaulting Lender nor the performance by Non-Defaulting Lenders of such reallocated funding obligations will by themselves cause the relevant Defaulting Lender to become a Non-Defaulting Lender), or (vi) any Lender that has become the subject of a Bail-In Action. Any determination by the Administrative Agent that a Lender is a Defaulting Lender under any of clauses (i) through (vi) above will be conclusive and binding absent manifest error, and such Lender will be deemed to be a Defaulting Lender (subject to Section 2.23) upon notification of such determination by the Administrative Agent to Howmet, the Issuer and the Lenders.

“Designated Grenfell Liabilities” shall mean costs and expenses (including legal fees) attributable to or arising from the Grenfell Tower Fire, which have been assumed by Arconic Rolled Products pursuant to the 2020 Separation Documents (as defined in Amendment No. 3).

“Designation Date” shall have the meaning assigned to such term in Section 10.04(f).

“Designation of Borrowing Subsidiary” shall mean a Designation of Borrowing Subsidiary executed by Howmet and a wholly-owned Subsidiary thereof in substantially the form of Exhibit C.

“Determination Date” shall mean, with respect to any Letter of Credit, (i) the most recent date upon which one of the following shall have occurred: (x) the date of issuance of such Letter of Credit, (y) the date on which any Issuer was or is, as applicable, required to deliver a notice of non-renewal with respect to such Letter of Credit, and (z) the first Business Day of each month, commencing on the first Business Day following the issuance of such Letter of Credit; and (ii) such other date determined by the Administrative Agent in its sole discretion.

“Documentary Letter of Credit” shall mean any Letter of Credit that is drawable upon presentation of documents evidencing the sale or shipment of goods purchased by Howmet or any of its Subsidiaries in the ordinary course of its business.

“Dollar Equivalent” shall mean (i) with respect to all matters other than the Letters of Credit, (x) with respect to any amount denominated in Dollars, such amount and (y) with respect to any amount denominated in Euro, the amount converted in Dollars using the 12:00 p.m. New York City OANDA rate for Euro on such day or, if such day is not a Business Day, on the immediately preceding Business Day and (ii) with respect to the Letters of Credit issued (x) in Dollars, such amount on any Determination Date and (y) in Euro, the amount converted into Dollars using the 12:00 p.m. New York City OANDA rate for Euro on such Determination Date or, if such day is not a Business Day, on the immediately preceding Business Day.

“Dollars” or “\$” shall mean lawful money of the United States of America.

“EEA Financial Institution” shall mean (a) any credit institution or investment firm established in any EEA Member Country which is subject to the supervision of an EEA Resolution Authority, (b) any entity established in an EEA Member Country which is a parent of an institution described in clause (a) of this definition or (c) any financial institution established in an EEA Member Country which is a subsidiary of an institution described in clauses (a) or (b) of this definition and is subject to consolidated supervision with its parent.

“EEA Member Country” shall mean any of the member states of the European Union, Iceland, Liechtenstein and Norway.

“EEA Resolution Authority” shall mean any public administrative authority or any person entrusted with public administrative authority of any EEA Member Country (including any delegee) having responsibility for the resolution of any EEA Financial Institution.

“Electronic Signature” shall mean an electronic sound, symbol, or process attached to, or associated with, a contract or other record and adopted by a person with the intent to sign, authenticate or accept such contract or record.

“ERISA” shall mean the Employee Retirement Income Security Act of 1974, as amended, and the rules and regulations promulgated thereunder.

“ERISA Affiliate” shall mean any trade or business (whether or not incorporated) that is a member of a group of which any Borrower is a member and which is treated as a single employer under Section 414 of the Code.

“ERISA Event” shall mean (i) any Reportable Event; (ii) the adoption of any amendment to a Plan that would require the provision of security pursuant to Section 401(a)(29) of the Code or Section 307 of ERISA; (iii) a determination that any Plan is, or is reasonably expected to be, in “at-risk”

status, within the meaning of Section 430(i)(4) of the Code or Section 303(i)(4) of ERISA; (iv) the filing pursuant to Section 412(d) of the Code or Section 302(d) of ERISA of an application for a waiver of the minimum funding standard with respect to any Plan; (v) the incurrence of any liability under Title IV of ERISA with respect to the termination of any Plan or the withdrawal or partial withdrawal of any Borrower or any of its ERISA Affiliates from any Plan or Multiemployer Plan; (vi) the receipt by any Borrower or any ERISA Affiliate from the PBGC or a plan administrator of any notice relating to the intention to terminate any Plan or Plans or to appoint a trustee to administer any Plan; (vii) the receipt by any Borrower or any ERISA Affiliate of any notice concerning the imposition of Withdrawal Liability or a determination that a Multiemployer Plan is, or is expected to be, insolvent or in reorganization, within the meaning of Title IV of ERISA or that it intends to terminate or has terminated under Section 4041A or 4042 of ERISA or is in “endangered” or “critical” status, within the meaning of Section 432 of the Code or Section 305 of ERISA; (viii) the occurrence of a “prohibited transaction” with respect to which any Borrower or any of its subsidiaries is a “disqualified person” (within the meaning of Section 4975 of the Code) or with respect to which any Borrower or any such subsidiary could otherwise be liable; (ix) any other similar event or condition with respect to a Plan or Multiemployer Plan that could result in liability of the Borrowers and (x) any Foreign Benefit Event.

“Erroneous Payment” has the meaning specified in Section 9.08(a).

“Erroneous Payment Deficiency Assignment” has the meaning specified in Section 9.08(d)(i).

“Erroneous Payment Return Deficiency” has the meaning specified in Section 9.08(d)(i).

“Erroneous Payment Subrogation Rights” has the meaning specified in Section 9.08(e).

“EU Bail-In Legislation Schedule” shall mean the EU Bail-In Legislation Schedule published by the Loan Market Association (or any successor person), as in effect from time to time.

“EURIBOR” shall mean, for any Interest Period, the rate per annum appearing on the applicable Bloomberg screen (or on any successor or substitute page of such service, or any successor to or substitute for such service, providing rate quotations comparable to those currently provided on such page, as determined by the Administrative Agent from time to time for purposes of providing quotations of interest rates applicable to dollar deposits in the Euro interbank market, the “Screen Rate”) as the Euro interbank offered rate administered by the European Money Markets Institute (or any other Person which takes over administration of that rate) for deposits in Euros at approximately 11:00 A.M. (Brussels time) on the second TARGET Day immediately preceding the first day of such Interest Period, for a term comparable to such Interest Period; provided that if EURIBOR as so determined shall ever be less than the Floor, then EURIBOR shall be deemed to be the Floor; provided further, that if the applicable Screen Rate shall not be available at such time for such Interest Period (an “Impacted Interest Period”) with respect to the relevant currency, then EURIBOR shall be the Interpolated Rate at such time.

“EURIBOR Borrowing” shall mean a Borrowing comprised of EURIBOR Loans.

“EURIBOR Loan” shall mean any Loan during any period in which it bears interest based on EURIBOR in accordance with the provisions of Article II.

“Euro” shall mean the single currency of participating member states of the European Union.

“Event of Default” shall have the meaning assigned to such term in Article VII.

“Exchange Act Reports” shall mean the Annual Report of Howmet on Form 10-K for the year ended December 31, 2020, the Quarterly Reports of Howmet on Form 10-Q for the quarters ended March 31, 2021 and June 30, 2021, filed by Howmet with the SEC pursuant to the Securities Exchange Act of 1934; provided, however, that for the purpose of satisfaction of the condition set forth in Section 2.21(b)(B) with respect to the First Extension or the Second Extension only, “Exchange Act Reports” shall mean Howmet’s Annual Report on Form 10-K for the fiscal year of Howmet most recently ended prior to the delivery of the Extension Request with respect to the First Extension or the Second Extension, as applicable (the “Applicable Fiscal Year”), the Quarterly Reports of Howmet on Form 10-Q for each of the quarters ended after the Applicable Fiscal Year and prior to the applicable Extended Maturity Effective Date.

“Excluded Taxes” shall mean (i) any Taxes based upon, or measured by, any Lender’s, any Issuer’s, any Transferee’s or the Administrative Agent’s net income, net receipts, net profits, net worth or capital (including franchise or similar Taxes imposed in lieu of such Taxes), but only to the extent such Taxes are imposed by a taxing authority (a) in a jurisdiction (or political subdivision thereof) under the laws of which such Lender, Issuer, Transferee or the Administrative Agent is organized or incorporated, (b) in a jurisdiction (or political subdivision thereof) in which such Lender, Issuer, Transferee or the Administrative Agent does business, or (c) in a jurisdiction (or political subdivision thereof) in which such Lender, Issuer, Transferee or the Administrative Agent maintains a lending office (or branch), (ii) any franchise Taxes, branch Taxes or branch profits Taxes imposed by the United States or any similar Taxes imposed by any jurisdiction (or political subdivision thereof) described in clause (i) or in which any Borrower is located, (iii) with regard to any Lender, Issuer or Transferee, any withholding Tax that is (a) imposed on amounts payable to such Lender, Issuer or Transferee because such Lender, Issuer or Transferee designates a new lending office, except to the extent that such Lender, Issuer or Transferee was entitled, at the time of designation of a new lending office (or assignment), to receive such additional amounts from any Borrower pursuant to Section 2.18(a), or (b) attributable to such Lender’s, Issuer’s or Transferee’s failure to comply with Section 2.18(g), (h) or (i), as applicable, (iv) any Tax that is found in a final, non-appealable judgment by a court of competent jurisdiction to have been imposed solely as a result of any Lender’s, Issuer’s, Transferee’s or the Administrative Agent’s gross negligence or willful misconduct and (v) any withholding Taxes imposed under FATCA.

“Existing Credit Agreement” has the meaning specified in the recitals.

“Existing Preferred Stock” shall mean the \$3.75 Cumulative Preferred Stock, par value \$100 per share of Howmet issued as of June 26, 2020.

“Extended Maturity Effective Date” shall have the meaning assigned to such term in Section 2.21(b).

“Extension Request” shall have the meaning assigned to such term in Section 2.21(a).

“Facility” shall mean the Commitments and the provisions herein related to the Loans and Letters of Credit.

“Facility Fee” shall have the meaning assigned to such term in Section 2.06(a).

“FATCA” shall mean Sections 1471 through 1474 of the Code (or any amended or successor provision of the Code that is substantively comparable and not materially more onerous to

comply with); any applicable intergovernmental agreement entered into in respect thereof; any current or future regulations, administrative guidance or official interpretations thereof; and any agreement entered into pursuant to Section 1471(b)(1) of the Code.

“Federal Funds Rate” shall mean, for any period, a fluctuating interest rate per annum equal for each day during such period to the weighted average of the rates on overnight federal funds transactions with members of the Federal Reserve System, as published for such day (or, if such day is not a Business Day, for the next preceding Business Day) by the Federal Reserve Bank of New York, or, if such rate is not so published for any day that is a Business Day, the average of the quotations for such day on such transactions received by the Administrative Agent from three federal funds brokers of recognized standing selected by it. Notwithstanding the foregoing, if the Federal Funds Rate shall be less than zero, such rate shall be deemed zero for the purposes of this Agreement.

“Financial Officer” of any corporation shall mean the chief financial officer, principal accounting officer, treasurer or controller of such corporation.

“First Extended Maturity Date” shall mean the sixth anniversary of the Closing Date or, if such day is not a Business Day, on the immediately preceding Business Day.

“First Extension” shall have the meaning assigned to such term in Section 2.21(a).

“Fitch” shall mean Fitch Ratings Ltd.

“Floor” shall mean a rate of interest equal to 0.0%.

“Foreign Benefit Event” shall mean (a) with respect to any Foreign Pension Plan, (i) the existence of unfunded liabilities in excess of the amount permitted under any applicable law, or in excess of the amount that would be permitted absent a waiver from a Governmental Authority, (ii) the failure to make the required contributions or payments, under any applicable law, on or before the due date for such contributions or payments, (iii) the receipt of a notice by a Governmental Authority relating to the intention to terminate any such Foreign Pension Plan or to appoint a trustee to administer any such Foreign Pension Plan, or to the insolvency of any such Foreign Pension Plan and (iv) the incurrence of any liability of the Borrowers under applicable law on account of the complete or partial termination of such Foreign Pension Plan or the complete or partial withdrawal of any participating employer therein and (b) with respect to any Foreign Plan, (i) the occurrence of any transaction that is prohibited under any applicable law and could result in the incurrence of any liability by the Borrowers, or the imposition on the Borrowers of any fine, excise tax or penalty resulting from any noncompliance with any applicable law and (ii) any other event or condition that could reasonably be expected to result in liability of any of the Borrowers.

“Foreign Pension Plan” shall mean any benefit plan which under applicable law is required to be funded through a trust or other funding vehicle other than a trust or funding vehicle maintained exclusively by a Governmental Authority.

“Foreign Plan” shall mean any plan or arrangement established or maintained outside the United States for the benefit of present or former employees of any of the Borrowers.

“GAAP” shall mean generally accepted accounting principles in the United States of America as in effect from time to time.

“Governmental Authority” shall mean any nation, sovereign or government, any state, province or other political subdivision thereof and any entity or authority exercising executive, legislative, judicial, regulatory or administrative functions of or pertaining to government, including any central bank or stock exchange, including any applicable supranational bodies (such as the European Union or the European Central Bank).

“Grenfell Tower Fire” shall mean the June 2017 fire at the Grenfell Tower in London, England.

“Guarantee” of or by any person shall mean any obligation, contingent or otherwise, of such person guaranteeing any Indebtedness of any other person, whether directly or indirectly, and including any obligation of such person, direct or indirect, to purchase or pay such Indebtedness or to purchase any security for the payment of such Indebtedness; provided, however, that the term “Guarantee” shall not include endorsements for collection or deposit, in either case in the ordinary course of business.

“IFRS” shall mean the International Financial Reporting Standards set by the International Accounting Standards Board (or the Financial Accounting Standards Board of the American Institute of Certified Public Accountants or the SEC, as the case may be) or any successor thereto, as in effect from time to time.

“Indebtedness” of any person at any time shall mean, without duplication, (a) all obligations for money borrowed or raised, all obligations (other than accounts payable and other similar items arising in the ordinary course of business) for the deferred payment of the purchase price of property, and all capital lease obligations which, in each case, in accordance with GAAP, would be included in determining total liabilities as shown on the liability side of the balance sheet of such person and (b) all Guarantees of such person.

“Indemnified Taxes” shall mean Taxes other than Excluded Taxes.

“Indemnatee” shall have the meaning assigned to it in Section 10.05(c).

“Index Debt” shall mean the senior, unsecured, non-credit enhanced, long-term Indebtedness for borrowed money of Howmet.

“Index Debt Ratings” shall mean, as of any date, the most recently announced rating for any Index Debt by S&P, Moody’s or Fitch. For purposes of the foregoing, (a) if at any time Howmet has two Index Debt Ratings, in the event of split Index Debt Ratings, the fees and spreads will be based on the category corresponding to the higher of such Index Debt Ratings, unless such ratings differ by two or more categories, in which case the fees and spreads will be based upon the category one level below the category corresponding to the higher of such Index Debt Ratings; (b) if at any time Howmet has three Index Debt Ratings, in the event of split Index Debt Ratings, (A) if two of the three Index Debt Ratings are in the same category, such category shall apply and (B) if all three of the Index Debt Ratings are in different categories, then the category corresponding to the middle Index Debt Rating shall apply; (c) if at any time Howmet has only one Index Debt Rating, the fees and spreads shall be the rate per annum applicable to such Index Debt Rating; and (d) if Howmet does not have an Index Debt Rating from either Moody’s, S&P or Fitch, then all such Index Debt Ratings shall be deemed to be in category 6. Each change in the Applicable Margin and the Applicable Facility Fee Rate shall apply during the period commencing on the effective date of such change and ending on the date immediately preceding the effective date of the next such change. If the rating system of Moody’s, S&P or Fitch shall change, or if any such rating agency shall cease to be in the business of rating corporate debt obligations, Howmet and

the Lenders shall negotiate in good faith to amend the references to specific ratings in this definition to reflect such changed rating system or the non-availability of ratings from such rating agency, and pending the effectiveness of any such amendment, the ratings of such rating agency most recently in effect prior to such change or cessation shall be employed in determining the Applicable Margin and the Applicable Facility Fee Rate.

“Initial Scheduled Maturity Date” shall mean the fifth anniversary of the Closing Date or, if such day is not a Business Day, on the immediately preceding Business Day.

“Interest Election Request” has the meaning specified in Section 2.04(a).

“Interest Payment Date” shall mean, with respect to any Loan, the last day of the Interest Period applicable to the Borrowing of which such Loan is a part and, in the case of either a SOFR Borrowing or a EURIBOR Borrowing with an Interest Period of more than three months’ duration, each day that would have been an Interest Payment Date had successive Interest Periods of three months’ duration been applicable to such Borrowing, and, in addition, the effective date of any continuation of such Borrowing in its existing Type or conversion of such Borrowing to a Borrowing of a different Type, and the Maturity Date.

“Interest Period” shall mean (a) as to any SOFR Borrowing or EURIBOR Borrowing, the period commencing on the date of such Borrowing or on the last day of the immediately preceding Interest Period applicable to such Borrowing, as the case may be, and ending on the numerically corresponding day (or, if there is no numerically corresponding day, on the last day) in the calendar month that is 1, 3 or 6 months thereafter (in each case, subject to the availability for the interest rate applicable to the relevant Currency), as the Borrower to which such Loan is made may elect; provided, however, that the Borrowers may not elect any Interest Period that ends after the Maturity Date, and (b) as to any Base Rate Borrowing, the period commencing on the date of such Borrowing or on the last day of the immediately preceding Interest Period applicable to such Borrowing, as the case may be, and ending on the earliest of (i) the next succeeding March 31, June 30, September 30 or December 31, (ii) the Maturity Date and (iii) the date such Borrowing is prepaid in accordance with Section 2.11; provided, however, that in each case of clauses (a) and (b) above, if any Interest Period would end on a day other than a Business Day, such Interest Period shall be extended to the next succeeding Business Day unless, in the case of either a SOFR Borrowing or a EURIBOR Borrowing, such next succeeding Business Day would fall in the next calendar month, in which case such Interest Period shall end on the next preceding Business Day. No tenor that has been removed from this definition pursuant to Section 2.24(d) shall be available for specification in the Notice of Borrowing pursuant to Section 2.03 or Interest Election Request pursuant to Section 2.04.

“Interpolated Rate” shall mean, at any time, the rate per annum determined by the Administrative Agent (which determination shall be conclusive and binding absent manifest error) to be equal to the rate that results from interpolating on a linear basis between: (a) the applicable Screen Rate for the longest period (for which that Screen Rate is available in the relevant currency) that is shorter than the Impacted Interest Period and (b) the applicable Screen Rate for the shortest period (for which that Screen Rate is available in the relevant currency) that exceeds the Impacted Interest Period, in each case, at such time; provided, that, if any Interpolated Rate shall be less than zero, such rate shall be deemed to be zero for purposes of this Agreement.

“Issue” shall mean, with respect to any Letter of Credit, to issue, extend the expiry of, renew or increase the maximum face amount (including by deleting or reducing any scheduled decrease in such maximum face amount) of, such Letter of Credit. The terms “Issued” and “Issuance” shall have a corresponding meaning.

“Issuer” shall mean each Lender or Affiliate of a Lender that (a) is listed on the signature pages hereof as an “Issuer” or (b) is designated by Howmet and hereafter becomes an Issuer with the approval of the Administrative Agent by agreeing pursuant to an agreement with and in form and substance satisfactory to the Administrative Agent and Howmet to be bound by the terms hereof applicable to Issuers.

“L/C Commitment” shall mean, with respect to each Issuer, the commitment of such Issuer to Issue Letters of Credit as set forth in this Agreement in the aggregate face amount not to exceed the amount set forth opposite such Issuer’s name on Schedule 2.01(b) or in the agreement by which such Issuer agrees to become an Issuer hereunder and to be bound by the terms hereof applicable to Issuers.

“Lenders” shall mean (a) the financial institutions or other entities listed on Schedule 2.01(a) (other than any such financial institution or other entity that has ceased to be a party hereto pursuant to an Assignment and Assumption or otherwise) and (b) any financial institution or other entity that has become a party hereto pursuant to an Assignment and Assumption or an Accession Agreement, in each case that (i) has a Commitment, (ii) holds a Loan or (iii) participates in any Letter of Credit.

“Lender Insolvency Event” shall mean that (i) a Lender or its Parent Company is insolvent, or is generally unable to pay its debts as they become due, or admits in writing its inability to pay its debts as they become due, or makes a general assignment for the benefit of its creditors, (ii) a Lender or its Parent Company is the subject of a bankruptcy, insolvency, reorganization, liquidation or similar proceeding, or a receiver, trustee, conservator, intervenor or sequestrator or the like has been appointed for such Lender or its Parent Company, or such Lender or its Parent Company has taken any action in furtherance of or indicating its consent to or acquiescence in any such proceeding or appointment or (iii) a Lender or its Parent Company becomes the subject of a Bail-in Action. Notwithstanding anything to the contrary above, a Lender will not be a Defaulting Lender solely by virtue of the ownership or acquisition of any stock in such Lender or its Parent Company by any Governmental Authority.

“Letter of Credit” shall mean any letter of credit Issued pursuant to Section 2.22.

“Letter of Credit Obligations” shall mean, at any time, the Dollar Equivalent of the aggregate of all liabilities at such time of the Borrowers to all Issuers with respect to Letters of Credit, whether or not any such liability is contingent, including, without duplication, the sum of (a) the Reimbursement Obligations at such time and (b) the Letter of Credit Undrawn Amounts at such time.

“Letter of Credit Reimbursement Agreement” has the meaning specified in Section 2.22(a)(vi).

“Letter of Credit Request” has the meaning specified in Section 2.22(c).

“Letter of Credit Sublimit” shall mean \$500,000,000.

“Letter of Credit Undrawn Amounts” shall mean, at any time, the aggregate undrawn face amount of all Letters of Credit outstanding at such time.

“Lien” shall mean, with respect to any asset, (a) any mortgage, deed of trust, lien, pledge, encumbrance, charge or security interest in or on such asset, (b) the interest of a vendor or a lessor under any conditional sale agreement, capital lease or title retention agreement relating to such asset and (c) in the case of securities, any purchase option, call or similar right of a third party with respect to such securities.

“Loan Documents” shall mean, collectively, this Agreement, the Notes (if any), each Letter of Credit Reimbursement Agreement, each Designation of Borrowing Subsidiary, each Subsidiary Guarantee (if any) and each certificate, agreement or document executed by Howmet or any other Borrower and delivered to the Administrative Agent or any Lender or Issuer in connection with or pursuant to any of the foregoing.

“Loans” shall mean the loans made by the Lenders pursuant to this Agreement. Each Loan shall be a SOFR Loan, EURIBOR Loan or a Base Rate Loan.

“Material Adverse Effect” shall mean a materially adverse effect on the business, assets, operations or financial condition of Howmet and its Subsidiaries, taken as a whole, or a material impairment of the ability of Howmet to perform any of its obligations under this Agreement.

“Maturity Date” shall mean the earlier of (a) (i) the Initial Scheduled Maturity Date, if Howmet does not request a First Extension, (ii) with respect to any Commitment, Loan or other right or obligation of any Lender that did not consent to the First Extension or the Second Extension, the Initial Scheduled Maturity Date, (iii) with respect to any Commitment, Loan or other right or obligation hereunder of any Lender or Issuer that has consented to the First Extension, but did not consent to the Second Extension, if each of the conditions set forth in Section 2.21(b) with respect to the First Extension shall have been satisfied, the First Extended Maturity Date or (iv) with respect to any Commitment, Loan or other right or obligation hereunder of any Lender or Issuer that has consented to the Second Extension, if each of the conditions set forth in Section 2.21(b) with respect to the Second Extension shall have been satisfied, the Second Extended Maturity Date and (b) the date on which the Obligations become due and payable pursuant to Article VII.

“Moody’s” shall mean Moody’s Investors Service, Inc.

“Multiemployer Plan” shall mean a multiemployer plan as defined in Section 4001(a)(3) of ERISA to which any Borrower or any ERISA Affiliate (other than one considered an ERISA Affiliate only pursuant to subsection (m) or (o) of Section 414 of the Code) is making or accruing an obligation to make contributions, or has within any of the preceding five plan years made or accrued an obligation to make contributions.

“Non-Defaulting Lender” shall mean, at any time, a Lender that is not a Defaulting Lender.

“Note” shall have the meaning assigned to such term in Section 2.05(e).

“Notice of Borrowing” shall have the meaning assigned to such term in Section 2.03.

“Obligations” shall mean, collectively, the Loans, the Letter of Credit Obligations and all other amounts, obligations, covenants and duties owing by the Borrowers to the Administrative Agent, any Lender, any Issuer, or any Indemnitee, of every type and description (whether by reason of an extension of credit, opening or amendment of a Letter of Credit or payment of any draft drawn or other payment thereunder, loan, guaranty, indemnification or otherwise), present or future, arising under this Agreement or any other Loan Document, whether direct or indirect (including those acquired by assignment or subrogation), absolute or contingent, due or to become due, now existing or hereafter arising and however acquired and whether or not evidenced by any note, guaranty or other instrument or for the payment of money, including all Letters of Credit and other fees, interest, charges, expenses, attorneys’ fees and disbursements, and other sums chargeable to the Borrowers under this Agreement or

any other Loan Document and all obligations of the Borrowers under any Loan Document to provide cash collateral for any Letter of Credit Obligation.

“Parent Company” shall mean, with respect to a Lender, the bank holding company (as defined in Federal Reserve Board Regulation Y), if any, of such Lender, and/or any person owning, beneficially or of record, directly or indirectly, a majority of the stock of such Lender.

“Payment Recipient” has the meaning specified in Section 9.08(a).

“PBGC” shall mean the Pension Benefit Guaranty Corporation referred to and defined in ERISA.

“Periodic Term SOFR Determination Day” has the meaning specified in the definition of “Term SOFR”.

“person” shall mean any natural person, corporation organization, business trust, joint venture, association, company, partnership or government, or any agency or political subdivision thereof.

“Plan” shall mean any pension plan (other than a Multiemployer Plan) subject to the provisions of Title IV of ERISA or Section 412 of the Code which is maintained for employees of any Borrower or any ERISA Affiliate.

“Prospective Lender” shall have the meaning assigned to such term in Section 2.20.

“PTE” shall mean a prohibited transaction class exemption issued by the U.S. Department of Labor, as any such exemption may be amended from time to time.

“Ratable Portion” or “ratably” shall mean, for any Lender, the percentage obtained by dividing (i) the amount of the Commitment of such Lender by (ii) the sum of the aggregate outstanding amount of the Commitments of all Lenders (or, at any time on or after the expiry date of any Revolving Credit Period, the percentage obtained by dividing the principal amount of such Lender’s Revolving Credit Outstandings by the aggregate principal amount of all Revolving Credit Outstandings).

“Register” shall have the meaning assigned to such term in Section 2.05(b).

“Regulation U” shall mean Regulation U of the Board or any Governmental Authority succeeding to its functions, as in effect from time to time.

“Reimbursement Date” has the meaning specified in Section 2.22(h).

“Reimbursement Obligations” shall mean, as and when matured, the obligation of any Borrower to pay, on the date payment is made or scheduled to be made to the beneficiary under each such Letter of Credit (or at such other date as may be specified in the applicable Letter of Credit Reimbursement Agreement) and in the currency drawn (or in such other currency as may be specified in the applicable Letter of Credit Reimbursement Agreement), all amounts of each draft and other requests for payments drawn under Letters of Credit, and all other matured reimbursement or repayment obligations of any Borrower to any Issuer with respect to amounts drawn under Letters of Credit.

“Related Parties” shall mean, with respect to any specified person, such person’s Affiliates and the respective directors, officers, employees, agents and advisors of such person and such person’s Affiliates.

“Relevant Governmental Body” shall mean (a) with respect to a Benchmark Replacement in respect of Dollars, the Board of Governors of the Federal Reserve System or the Federal Reserve Bank of New York, or a committee officially endorsed or convened by the Board of Governors of the Federal Reserve System or the Federal Reserve Bank of New York, or any successor thereto and (b) with respect to a Benchmark Replacement in respect of Euros, (1) the central bank for the currency in which such amounts are denominated hereunder or any central bank or other supervisor which is responsible for supervising either (A) such Benchmark Replacement or (B) the administrator of such Benchmark Replacement or (2) any working group or committee officially endorsed or convened by (A) the central bank for the currency in which such amounts are denominated, (B) any central bank or other supervisor that is responsible for supervising either (i) such Benchmark Replacement or (ii) the administrator of such Benchmark Replacement, (C) a group of those central banks or other supervisors or (D) the Financial Stability Board or any part thereof.

“Resolution Authority” shall mean an EEA Resolution Authority or, with respect to any UK Financial Institution, a UK Resolution Authority.

“Reportable Event” shall mean any reportable event as defined in Section 4043(b) of ERISA or the regulations issued thereunder with respect to a Plan (other than a Plan maintained by an ERISA Affiliate which is considered an ERISA Affiliate only pursuant to subsection (m) or (o) of Section 414 of the Code).

“Required Lenders” shall mean, collectively, (a) on and after the Closing Date and prior to the expiry date of any Revolving Credit Period, Lenders having more than fifty percent (50%) of the sum of (x) the aggregate principal amount of all Revolving Credit Outstandings and (y) the aggregate amount of the unused Commitments and (b) on and after the expiry date of any Revolving Credit Period, Lenders having more than fifty percent (50%) of the sum of the aggregate principal amount of all Revolving Credit Outstandings. A Defaulting Lender shall not be included in the calculation of “Required Lenders.”

“Responsible Officer” of any corporation shall mean any executive officer or Financial Officer of such corporation and any other officer or similar official thereof responsible for the administration of the obligations of such corporation in respect of this Agreement.

“Restricted Payment” shall mean (a) any dividend, distribution or any other payment (whether direct or indirect) on account of any stock or equity interests of any Borrower or any of its Subsidiaries now or hereafter outstanding and (b) any redemption, retirement, sinking fund or similar payment, purchase, repurchase or other acquisition for value (direct or indirect) of any stock or equity interests of the Borrower or any of its Subsidiaries now or hereafter outstanding, in each case other than (v) with respect to Existing Preferred Stock, (w) by any Subsidiary to another Subsidiary or any Borrower, (x) Restricted Payments by Howmet payable solely in the common stock or other common equity interests of Howmet, (y) payments in lieu of the issuance of fractional shares in connection with the exercise of warrants, options or other securities convertible into or exchangeable for stock and (z) repurchase of equity interests upon the exercise of stock options if such equity interests represent a portion of the exercise price of such stock options.

“Restricted Subsidiary” shall mean any consolidated Subsidiary of Howmet which owns any manufacturing plant or manufacturing facility located in the United States, except any such plant or

facility which, in the opinion of the Board of Directors of Howmet, is not of material importance to the business of Howmet and its Restricted Subsidiaries, taken as a whole, excluding any such Subsidiary which (a) is principally engaged in leasing or financing receivables, (b) is principally engaged in financing Howmet's operations outside the United States or (c) principally serves as a partner in a partnership.

“Revolving Credit Outstandings” shall mean, at any particular time, the sum of (a) the principal amount of the Loans outstanding at such time and (b) the Letter of Credit Obligations outstanding at such time.

“Revolving Credit Period” shall mean, with respect to each Lender and Issuer, the period from and including the Closing Date to, but excluding, the applicable Maturity Date (or in the case of any Issuance of any Letter of Credit, 5 Business Days prior to the applicable Maturity Date) or any earlier date on which the Commitments shall be terminated.

“S&P” shall mean Standard & Poor's Ratings Services, a division of S&P Global Inc.

“Sanctions” shall mean sanctions administered or enforced by the U.S. Department of Treasury's Office of Foreign Assets Control, the U.S. Department of State, or by the United Nations Security Council, the European Union or Her Majesty's Treasury of the United Kingdom.

“Sanctioned Country” shall have the meaning assigned to such term in Section 3.19(a).

“Sanctioned Person” shall have the meaning assigned to such term in Section 3.19(a).

“Screen Rate” shall have the meaning assigned to such term in the definition of “EURIBOR”.

“SEC” shall mean the Securities and Exchange Commission (or any successor agency).

“Second Extended Maturity Date” shall mean the seventh anniversary of the Closing Date or, if such day is not a Business Day, on the immediately preceding Business Day.

“Second Extension” shall have the meaning assigned to such term in Section 2.21(a).

“SOFR” shall mean a rate equal to the secured overnight financing rate as administered by the SOFR Administrator.

“SOFR Administrator” shall mean the Federal Reserve Bank of New York (or a successor administrator of the secured overnight financing rate).

“SOFR Borrowing” shall mean, as to any Borrowing, the SOFR Loans comprising such Borrowing.

“SOFR Loan” shall mean a Loan that bears interest at a rate based on Adjusted Term SOFR, other than pursuant to clause (c) of the definition of “Base Rate”.

“Standby Letter of Credit” shall mean any Letter of Credit that is not a Documentary Letter of Credit.

“Subsidiary” shall mean, with respect to any person (herein referred to as the “parent”), any corporation, partnership, association or other business entity of which securities or other ownership interests representing more than 50% of the Voting Stock or more than 50% of the general partnership interests are, at the time any determination is being made, owned, controlled or held by the parent or one or more Subsidiaries of the parent or by the parent and one or more Subsidiaries of the parent.

“Subsidiary Guarantee” shall mean a Subsidiary Guarantee executed by a Borrowing Subsidiary in substantially the form of Exhibit F.

“Syndication Agent” shall mean JPMorgan Chase Bank, N.A.

“TARGET2” shall mean the Trans-European Automated Real-time Gross Settlement Express Transfer payment system which utilizes a single shared platform and which was launched on November 19, 2007.

“Target Date” shall mean any day on which TARGET2 (or, if such payment system ceases to be operative, such other payment system, if any, reasonably determined by the Administrative Agent to be a suitable replacement) is open for the settlement of payments in Euros.

“Taxes” shall mean any and all present or future taxes, levies, imposts, deductions, charges or withholdings of a similar nature, and including, (i) income, franchise, profits, gross receipts, minimum, alternative minimum, estimated, ad valorem, value added, sales, use, service, real or personal property, capital stock, license, payroll, withholding, disability, employment, social security, workers compensation, unemployment compensation, utility, mineral severance, excise, stamp, windfall profits, transfer and gains taxes, (ii) customs, duties, imposts, charges, levies or other similar assessments of any kind, and (iii) interest, penalties and additions to tax imposed with respect thereto.

“Term SOFR” shall mean,

(a) for any calculation with respect to a SOFR Loan, the Term SOFR Reference Rate for a tenor comparable to the applicable Interest Period on the day (such day, the “Periodic Term SOFR Determination Day”) that is two (2) U.S. Government Securities Business Days prior to the first day of such Interest Period, as such rate is published by the Term SOFR Administrator; provided, however, that if as of 5:00 p.m. (New York City time) on any Periodic Term SOFR Determination Day the Term SOFR Reference Rate for the applicable tenor has not been published by the Term SOFR Administrator and a Benchmark Replacement Date with respect to the Term SOFR Reference Rate has not occurred, then Term SOFR will be the Term SOFR Reference Rate for such tenor as published by the Term SOFR Administrator on the first preceding U.S. Government Securities Business Day for which such Term SOFR Reference Rate for such tenor was published by the Term SOFR Administrator so long as such first preceding U.S. Government Securities Business Day is not more than three (3) U.S. Government Securities Business Days prior to such Periodic Term SOFR Determination Day, and

(b) for any calculation with respect to an Base Rate Loans on any day, the Term SOFR Reference Rate for a tenor of one month on the day (such day, the “Base Rate Term SOFR Determination Day”) that is two (2) U.S. Government Securities Business Days prior to such day, as such rate is published by the Term SOFR Administrator; provided, however, that if as of 5:00 p.m. (New York City time) on any Base Rate Term SOFR Determination Day the Term SOFR Reference Rate for the applicable tenor has not been published by the Term SOFR Administrator and a Benchmark Replacement Date with respect to the Term SOFR Reference Rate has not occurred, then Term SOFR will be the Term SOFR Reference Rate for such tenor as published by the Term SOFR Administrator on the first preceding U.S. Government Securities Business Day for which such Term SOFR Reference Rate for such tenor was

published by the Term SOFR Administrator so long as such first preceding U.S. Government Securities Business Day is not more than three (3) U.S. Government Securities Business Days prior to such Base Rate Term SOFR Determination Day.

“Term SOFR Adjustment” shall mean a percentage rate equal to 0.10% per annum.

“Term SOFR Administrator” shall mean CME Group Benchmark Administration Limited (CBA) (or a successor administrator of the Term SOFR Reference Rate selected by the Administrative Agent in its reasonable discretion).

“Term SOFR Reference Rate” shall mean the forward-looking term rate based on SOFR.

“Total Commitment” shall mean, at any time, the aggregate amount of the Commitments, as in effect at such time.

“Transferee” shall mean any transferee or assignee of any Lender, including a participation holder.

“Type”, when used in respect of any Loan or Borrowing, shall refer to the Rate by reference to which interest on such Loan or on the Loans comprising such Borrowing is determined. For purposes hereof, “Rate” shall mean SOFR, EURIBOR and the Base Rate.

“UK Financial Institution” shall mean any BRRD Undertaking (as such term is defined under the PRA Rulebook (as amended from time to time) promulgated by the United Kingdom Prudential Regulation Authority) or any person falling within IFPRU 11.6 of the FCA Handbook (as amended from time to time) promulgated by the United Kingdom Financial Conduct Authority, which includes certain credit institutions and investment firms, and certain affiliates of such credit institutions or investment firms.

“UK Resolution Authority” shall mean the Bank of England or any other public administrative authority having responsibility for the resolution of any UK Financial Institution.

“Unadjusted Benchmark Replacement” means the applicable Benchmark Replacement excluding the related Benchmark Replacement Adjustment.

“U.S. Government Securities Business Day” shall mean any day except for (a) a Saturday, (b) a Sunday or (c) a day on which the Securities Industry and Financial Markets Association recommends that the fixed income departments of its members be closed for the entire day for purposes of trading in United States government securities.

“Voting Stock” with respect to the stock of any person means stock of any class or classes (however designated) having ordinary voting power for the election of the directors of such person, other than stock having such power only by reason of the occurrence of a contingency.

“Withdrawal Liability” shall mean liability to a Multiemployer Plan as a result of a complete or partial withdrawal from such Multiemployer Plan, as such terms are defined in Part I of Subtitle E of Title IV of ERISA.

“Write-Down and Conversion Powers” shall mean, (a) with respect to any EEA Resolution Authority, the write-down and conversion powers of such EEA Resolution Authority from time to time under the Bail-In Legislation for the applicable EEA Member Country, which write-down

and conversion powers are described in the EU Bail-In Legislation Schedule, and (b) with respect to the United Kingdom, any powers of the applicable Resolution Authority under the Bail-In Legislation to cancel, reduce, modify or change the form of a liability of any UK Financial Institution or any contract or instrument under which that liability arises, to convert all or part of that liability into shares, securities or obligations of that person or any other person, to provide that any such contract or instrument is to have effect as if a right had been exercised under it or to suspend any obligation in respect of that liability or any of the powers under that Bail-In Legislation that are related to or ancillary to any of those powers.

SECTION 1.02. Terms Generally; Accounting Principles. (a) The definitions in Section 1.01 shall apply equally to both the singular and plural forms of the terms defined. Whenever the context may require, any pronoun shall include the corresponding masculine, feminine and neuter forms. The words “include”, “includes” and “including” shall be deemed to be followed by the phrase “without limitation”. All references herein to Articles, Sections, Exhibits and Schedules shall be deemed references to Articles and Sections of, and Exhibits and Schedules to, this Agreement unless the context shall otherwise require. The terms “Lender”, “Issuer”, and “Administration Agent” include their respective successors.

(b) Except as otherwise expressly provided herein, all terms of an accounting or financial nature shall be construed in accordance with GAAP, as in effect from time to time; provided, however, that, if Howmet notifies the Administrative Agent that it requests an amendment to any provision hereof to eliminate the effect of any change in GAAP on the operation of such provision (or if the Administrative Agent notifies Howmet that the Required Lenders request an amendment to any provision hereof for such purpose), regardless of whether any such notice is given before or after such change in GAAP (provided such change in GAAP occurs after the date hereof), then such provision shall be interpreted on the basis of GAAP in effect immediately before such change became effective until such notice shall have been withdrawn or such provision amended in accordance herewith. If at any time the SEC permits or requires United States reporting companies to use IFRS in lieu of GAAP for reporting purposes, Howmet may notify the Administrative Agent that it has elected to so use IFRS in lieu of GAAP and, upon any such notice, references herein to GAAP shall thereafter be construed to mean IFRS as in effect from time to time; provided that, to the extent that such election would affect any financial ratio set forth in this Agreement or requirements set forth in Section 5.01, (i) Howmet shall provide to the Administrative Agent financial statements and other documents reasonably requested by the Administrative Agent or any Lender setting forth a reconciliation with respect to such ratio or requirement made before and after giving effect to such election and (ii) if Howmet, the Administrative Agent or the Required Lenders shall so request, the Administrative Agent, the Required Lenders and Howmet shall negotiate in good faith to amend such ratio to preserve the original intent thereof in light of such change.

(c) For purposes of this Agreement, any obligations of a person under a lease that is not (or would not be) required to be classified and accounted for as a capitalized lease on a balance sheet of such person under GAAP as in effect as of the date of this Agreement shall not be treated as a capitalized lease as a result of the adoption of changes in GAAP or changes in the application of GAAP and shall continue to be treated as an operating lease.

SECTION 1.03. Conversion of Foreign Currencies.

(a) Dollar Equivalents. The Administrative Agent shall determine or redetermine the Dollar Equivalent of any amount as required hereby in its own discretion or upon the request of any Lender or Issuer, and a determination or redetermination thereof by the Administrative Agent shall be conclusive absent manifest error. The Administrative Agent may, but shall not be obligated to, rely on any determination made by any Borrower in any document delivered to the Administrative Agent.

(b) Rounding-Off. The Administrative Agent may set up appropriate rounding off mechanisms or otherwise round-off amounts hereunder to the nearest higher or lower amount in whole Dollars or cents to ensure amounts owing by any party hereunder or that otherwise need to be calculated or converted hereunder are expressed in whole Dollars or in whole cents, as may be necessary or appropriate.

SECTION 1.04. Divisions. For all purposes under the Loan Documents (including Article VI), in connection with any division or plan of division under Delaware law (or any comparable event under a different jurisdiction's laws): (a) if any asset, right, obligation or liability of any person becomes the asset, right, obligation or liability of a different person, then it shall be deemed to have been transferred from the original person to the subsequent person, and (b) if any new person comes into existence, such new person shall be deemed to have been organized on the first date of its existence by the holders of its equity interests at such time.

ARTICLE II

THE CREDITS

SECTION 2.01. Commitments. Subject to the terms and conditions and relying upon the representations and warranties herein set forth, each Lender agrees, severally and not jointly, to make revolving credit Loans in Dollars or Euros to Howmet and the Borrowing Subsidiaries during the Revolving Credit Period applicable to such Lender in accordance with the terms hereof; provided, however, that (i) after giving effect to any Loan, the aggregate principal amount of the outstanding Loans shall not exceed the Total Commitment, (ii) at all times the aggregate principal amount of all outstanding Loans made by each Lender shall equal its Ratable Portion of the aggregate principal amount of all outstanding Loans and (iii) at no time shall any Lender be obligated to make a Loan in excess of such Lender's Ratable Portion of the Available Credit. The Commitment of each Lender is set forth on Schedule 2.01(a) to this Agreement or in any applicable Assignment and Assumption or Accession Agreement. Such Commitment may be terminated or reduced from time to time pursuant to Section 2.10, Section 2.23(d) or Section 10.04(h), increased pursuant to Section 2.20 and terminated pursuant to Article VII. Within the limits set forth in this Section 2.01, the Borrowers may borrow, pay or prepay Loans and reborrow at any time during the Revolving Credit Period, subject to the terms, conditions and limitations set forth herein.

SECTION 2.02. Loans. (a) Each Loan shall be made as part of a Borrowing consisting of Loans made by the Lenders ratably in accordance with their respective applicable Commitments; provided, however, that the failure of any Lender to make any Loan shall not in itself relieve any other Lender of its obligation to lend hereunder (it being understood, however, that no Lender shall be responsible for the failure of any other Lender to make any Loan required to be made by such other Lender). The Loans comprising each Borrowing shall be in an aggregate principal amount which is an integral multiple of the Dollar Equivalent of \$1,000,000 and not less than the Dollar Equivalent of \$50,000,000 (or an aggregate principal amount equal to the remaining balance of the applicable Commitments, as the case may be).

(b) Each Borrowing shall be comprised entirely of SOFR Loans, EURIBOR Loans or Base Rate Loans, as the applicable Borrower may request pursuant to Section 2.03. Each Lender may at its option fulfill its Commitment with respect to any Loan by causing any domestic or foreign branch or Affiliate of such Lender to make such Loan; provided, however, that any exercise of such option shall not affect the obligation of the applicable Borrower to repay such Loan in accordance with the terms of this Agreement. Borrowings of more than one Type may be outstanding at the same time; provided, however, that no Borrower shall be entitled to request any Borrowing which, if made, would result in an aggregate of more than five separate SOFR Loans or more than five separate EURIBOR Loans of any Lender being

made to the Borrowers and outstanding under this Agreement at any one time. For purposes of the foregoing, Loans having different Interest Periods, regardless of whether they commence on the same date, shall be considered separate Loans.

(c) Each Lender shall make each Loan that is (A) a Base Rate Loan, (B) a SOFR Loan or (B) a EURIBOR Loan, to be made by it hereunder on the proposed date thereof by wire transfer of immediately available funds to the Administrative Agent in New York, New York, not later than 1:00 p.m., New York City time, and the Administrative Agent shall by 3:00 p.m., New York City time, credit the amounts so received to the general deposit account of the Borrower to which such Loan is to be made with The Bank of New York Mellon, or such other account as such Borrower may designate in a written notice to the Administrative Agent, or, if such Loans are not made on such date because any condition precedent to a Borrowing herein specified shall not have been met, return the amounts so received to the respective Lenders. Unless the Administrative Agent shall have received notice from a Lender prior to the time of any Borrowing that such Lender will not make available to the Administrative Agent such Lender's portion of such Borrowing, the Administrative Agent may assume that such Lender has made such portion available to the Administrative Agent on the date of such Borrowing in accordance with this paragraph (c) and the Administrative Agent may, in reliance upon such assumption, make available to the applicable Borrower on such date a corresponding amount. If and to the extent that such Lender shall not have made such portion available to the Administrative Agent, such Lender and the applicable Borrower severally agree to repay to the Administrative Agent forthwith on demand such corresponding amount together with interest thereon, for each day from the date such amount is made available to such Borrower until the date such amount is repaid to the Administrative Agent, at (i) in the case of such Borrower, the interest rate applicable at the time to the Loans comprising such Borrowing and (ii) in the case of such Lender, a rate determined by the Administrative Agent to represent its cost of overnight or short-term funds (which determination shall be conclusive absent manifest error). If such Lender shall repay to the Administrative Agent such corresponding amount, such amount shall constitute such Lender's Loan as part of such Borrowing for purposes of this Agreement.

(d) The occurrence of any Lender becoming a Defaulting Lender shall not relieve any other Lender of its obligation to make a Loan or payment on such date but no such other Lender shall be responsible for the failure of any Defaulting Lender to make a Loan or payment required under this Agreement.

(e) Notwithstanding any other provision of this Agreement, no Borrower shall be entitled to request any Borrowing if the Interest Period requested with respect thereto would end after the Maturity Date.

SECTION 2.03. Notice of Borrowings. In order to request a Borrowing, a Borrower shall give written notice (which writing may be electronic mail or teletype) (a "Notice of Borrowing") (a) in the case of a Base Rate Borrowing, to the Administrative Agent not later than 12:00 noon, New York City time, on the Business Day of such proposed Borrowing, (b) in the case of a SOFR Borrowing, to the Administrative Agent not later than 10:00 a.m., New York City time, three U.S. Government Securities Business Days before such proposed Borrowing or (c) in the case of a EURIBOR Borrowing, to the Administrative Agent not later than 10:00 a.m., New York City time, four Business Days before such proposed Borrowing. Such notice shall be irrevocable and shall in each case refer to this Agreement, identify the applicable Borrower and specify (i) whether such Borrowing is to be denominated in Dollars or Euros; (ii) in the case of a Borrowing denominated in Dollars, whether such Borrowing is to be a SOFR Borrowing or a Base Rate Borrowing; (iii) the date of such Borrowing (which shall be a Business Day) and the amount thereof; and (iv) if such Borrowing is to be either a SOFR Borrowing or a EURIBOR Borrowing, the Interest Period with respect thereto. In the case of a Borrowing denominated in Dollars, if no election as to the Type of Borrowing is specified in any such notice, then such requested Borrowing shall be a Base Rate Borrowing. If no Interest Period with respect to any SOFR Borrowing or

EURIBOR Borrowing is specified in any such notice, then the Borrower giving the Notice of Borrowing shall be deemed to have selected an Interest Period of one month's duration. The Administrative Agent shall promptly advise the Lenders of any notice given pursuant to this Section 2.03 and of each Lender's portion of the requested Borrowing.

SECTION 2.04. Interest Elections. (a) Subject to the terms and conditions set forth in this Agreement, (a) at the option of the applicable Borrower, each Borrowing denominated in Dollars initially shall be of the Type specified in the applicable Notice of Borrowing, (b) each Borrowing denominated in Euros shall be a EURIBOR Borrowing, and (c) each SOFR Borrowing and each EURIBOR Borrowing shall have an initial Interest Period as specified in the Notice of Borrowing with respect to such Borrowing. Thereafter, the applicable Borrower may elect to convert a Borrowing denominated in Dollars to a different Type or to continue such Borrowing in its existing Type and, in the case of a SOFR Borrowing or a EURIBOR Borrowing, may elect Interest Periods therefor, all as provided in this Section. In the case of any Borrowing denominated in Dollars, the applicable Borrower may elect different options with respect to different portions of the affected Borrowing, in which case each such portion shall be allocated ratably among the Lenders holding the Loans comprising such Borrowing, and the Loans comprising each such portion shall be considered a separate Borrowing (each an "Interest Election Request").

(b) To make an Interest Election Request, the applicable Borrower shall notify the Administrative Agent of such election in writing (which writing may be electronic mail or telecopy) by the time that a Notice of Borrowing would be required under Section 2.03 if such Borrower were requesting a Borrowing of the Type resulting from such election to be made on the effective date of such election. Each such Interest Election Request shall be irrevocable and shall be confirmed promptly by hand delivery or telecopy to the Administrative Agent of a written Interest Election Request signed by the applicable Borrower.

(c) Each Interest Election Request shall specify the following information in compliance with Sections 2.02 and 2.03:

(i) the Borrowing to which such Interest Election Request applies and, if different options are being elected with respect to different portions thereof, the portions thereof to be allocated to each resulting Borrowing (in which case the information to be specified pursuant to clauses (iii) and (iv) below shall be specified for each resulting Borrowing);

(ii) the effective date of the election made pursuant to such Interest Election Request, which shall be a Business Day;

(iii) whether the resulting Borrowing is to be a Base Rate Borrowing, a SOFR Borrowing or a EURIBOR Borrowing;
and

(iv) if the resulting Borrowing is either a SOFR Borrowing or a EURIBOR Borrowing, the Interest Period to be applicable thereto after giving effect to such election, which shall be a period contemplated by the definition of the term "Interest Period".

If any such Interest Election Request requests either a SOFR Borrowing or a EURIBOR Borrowing but does not specify an Interest Period, then the applicable Borrower shall be deemed to have selected an Interest Period of one month's duration.

(d) Promptly following receipt of an Interest Election Request, the Administrative Agent shall advise each Lender of the details thereof and of such Lender's portion of each resulting Borrowing.

(e) If the applicable Borrower fails to deliver a timely Interest Election Request with respect to either a SOFR Borrowing or a EURIBOR Borrowing prior to the end of the Interest Period applicable thereto, then, unless such Borrowing is repaid as provided herein, at the end of such Interest Period such Borrowing, if denominated in Dollars, shall be converted to a Base Rate Borrowing and such Borrowing, if denominated in Euros, shall be continued to a EURIBOR Borrowing with an Interest Period of one month. Notwithstanding any contrary provision hereof, if an Event of Default has occurred and is continuing and the Administrative Agent, at the request of the Required Lenders, so notifies the applicable Borrower, then, so long as such Event of Default is continuing (i) a EURIBOR Borrowing shall be continued to a EURIBOR Borrowing with an Interest Period of one month at the end of the Interest Period applicable thereto and (ii) unless repaid, each SOFR Borrowing shall be converted to a Base Rate Borrowing at the end of the Interest Period applicable thereto.

SECTION 2.05. Repayment of Loans; Evidence of Debt. (a) The outstanding principal balance of each Loan shall be payable on the applicable Maturity Date.

(b) The Administrative Agent, acting as agent of the Borrowers solely for this purpose and for tax purposes, shall establish and maintain at one of its offices a record of ownership (the "Register") in which the Administrative Agent agrees to register by book entry the Administrative Agent's, each Lender's and each Issuer's interest in each Loan, each Letter of Credit and each Reimbursement Obligation, and in the right to receive any payments hereunder and any assignment of any such interest or rights. In addition, the Administrative Agent, acting as agent of the Borrowers solely for this purpose and for tax purposes, shall establish and maintain accounts in the Register in accordance with its usual practice in which it shall record (i) the names and addresses of the Lenders and the Issuers, (ii) the Commitments of each Lender from time to time, (iii) the amount of each Loan made and, if either a SOFR Loan or a EURIBOR Loan, the Interest Period applicable thereto, (iv) the amount of any principal or interest due and payable, and paid, by the Borrowers to, or for the account of, each Lender hereunder, (v) the amount that is due and payable, and paid, by each Borrower to, or for the account of, each Issuer, including the amount of Letter Credit Obligations (specifying the amount of any Reimbursement Obligations) due and payable to an Issuer, and (vi) the amount of any sum received by the Administrative Agent hereunder from the Borrowers, whether such sum constitutes principal or interest (and the type of Loan to which it applies), fees, expenses or other amounts due under the Loan Documents and each Lender's and Issuer's, as the case may be, share thereof, if applicable.

(c) Notwithstanding anything to the contrary contained in this Agreement, the Loans (including the Notes evidencing such Loans) and the Reimbursement Obligations are registered obligations and the right, title, and interest of the Lenders and the Issuers and their assignees in and to such Loans or Reimbursement Obligations, as the case may be, shall be transferable only upon notation of such transfer in the Register. A Note shall only evidence the Lender's or a registered assignee's right, title and interest in and to the related Loan, and in no event is any such Note to be considered a bearer instrument or obligation. This Section 2.05 and Section 10.04 shall be construed so that the Loans and Reimbursement Obligations are at all times maintained in "registered form" within the meaning of Sections 163(f), 871(h) (2) and 881(c)(2) of the Code and any related regulations (or any successor provisions of the Code or such regulations).

(d) The entries made in the Register and in the accounts therein maintained pursuant to clauses (b) and (c) above shall, to the extent permitted by applicable law, be prima facie evidence of the existence and amounts of the obligations recorded therein; provided, however, that the failure of the Administrative Agent to maintain such accounts or any error therein shall not in any manner affect the

obligation of any Borrower to repay the Loans in accordance with their terms. In addition, the Borrowers, the Administrative Agent, the Lenders and the Issuers shall treat each person whose name is recorded in the Register as a Lender or as an Issuer, as applicable, for all purposes of this Agreement. Information contained in the Register with respect to any Lender or Issuer shall be available for inspection by the Borrowers, the Administrative Agent, such Lender or such Issuer at any reasonable time and from time to time upon reasonable prior notice.

(e) Notwithstanding any other provision of this Agreement, in the event any Lender shall request a promissory note evidencing the Loans made by it hereunder (each a “Note”) to Howmet or any Borrowing Subsidiary, Howmet or such Borrowing Subsidiary shall deliver such a Note, satisfactory to the Administrative Agent, payable to such Lender or its order, and, subject to Section 2.05(c), the interests represented by such Note shall at all times (including after any assignment of all or part of such interests pursuant to Section 10.04) be represented by one or more promissory notes payable to the payee named therein or its order.

SECTION 2.06. Fees. (a) Howmet agrees to pay, or cause any other Borrower to pay, in immediately available Dollars for the account of the Lenders as set forth below in this Section 2.06, a facility fee (collectively, the “Facility Fee”) at a rate per annum equal to the Applicable Facility Fee Rate on (i) the aggregate amount of such Lender’s Commitment (whether used or unused), for the period from and including the Closing Date to but excluding the earlier of the date such Commitment is terminated and the applicable Maturity Date and (ii) after the termination of such Commitment, on the aggregate amount of such Lender’s outstanding Revolving Credit Outstandings. Accrued Facility Fees shall be payable in arrears (A) on the last Business Day of each calendar quarter, commencing on the first such Business Day following the Closing Date, for the account of each Lender, (B) on the Initial Scheduled Maturity Date, (x) if Howmet shall not have requested a First Extension, for the account of each Lender or (y) if Howmet shall have requested a First Extension, for the account of each Lender that shall not have consented to such First Extension, (C) the First Extended Maturity Date, (x) if Howmet shall not have requested a Second Extension, for the account of each Lender, or (y) if Howmet shall have requested a Second Extension, for the account of each Lender that shall not have consented to such Second Extension, (D) the Second Extended Maturity Date, if applicable, for the account of each Lender and (E) the date on which the Commitments shall be terminated in whole (or, in the case of Letters of Credit, fully cash collateralized in accordance with the last paragraph of Article VII), for the account of each Lender; provided, however, that if any Revolving Credit Outstandings shall be outstanding after the date on which the Commitments have been terminated in whole, then such Facility Fee shall be payable on demand. All Facility Fees shall be computed on the basis of the actual number of days elapsed in a year of 360 days.

(b) Letter of Credit Fees. Howmet agrees to pay, or cause any other Borrower to pay, the following amounts with respect to Letters of Credit issued by any Issuer:

(i) to the Administrative Agent for the account of each Issuer of a Letter of Credit, with respect to each Letter of Credit issued by such Issuer, an issuance fee equal to 0.125% per annum of the Dollar Equivalent of the maximum undrawn face amount of such Letter of Credit, payable in arrears on (A) the last Business Day of each calendar quarter, commencing on the first such Business Day following the issuance of such Letter of Credit, (B) the Initial Scheduled Maturity Date, (C) the First Extended Maturity Date, if applicable, (D) the Second Extended Maturity Date, if applicable, and (E) the Maturity Date;

(ii) to the Administrative Agent for the ratable benefit of the Lenders, with respect to each Letter of Credit, a fee accruing in Dollars at a rate per annum equal to the Applicable Margin for SOFR Loans on the Dollar Equivalent of the maximum undrawn face amount of such Letter of Credit, payable in arrears on (A) the last Business Day of each calendar quarter, commencing on the first such Business Day following the issuance of such Letter of Credit, (B) the Initial

Scheduled Maturity Date, (C) the First Extended Maturity Date, if applicable, (D) the Second Extended Maturity Date, if applicable, and (E) the Maturity Date; and

(iii) to the Issuer of any Letter of Credit, with respect to the issuance, amendment or transfer of each Letter of Credit and each drawing made thereunder, documentary and processing charges in accordance with such Issuer's standard schedule for such charges in effect at the time of issuance, amendment, transfer or drawing, as the case may be.

(iv) All fees payable under this Section 2.06(b) shall be computed on the basis of the actual number of days elapsed in a year of 360 days.

(c) Howmet agrees to pay, or cause any other Borrower to pay, to the Administrative Agent and the Arrangers, for their respective accounts, the fees payable in the amounts and at the times separately agreed upon among Howmet, such Borrowers, the Administrative Agent and the Arrangers.

(d) All fees shall be paid on the dates due, in immediately available funds, to the Administrative Agent, for distribution, if and as appropriate, among the Lenders. Once paid, the fees shall not be refundable except in the case of an error which results in the payment of fees in excess of those due and payable as of such date, in which case the Administrative Agent shall cause a refund in the amount of such excess to be paid to Howmet.

(e) Defaulting Lender Fees. Notwithstanding anything herein to the contrary, during such period as a Lender is a Defaulting Lender, such Defaulting Lender will not be entitled to any fees relating to such Defaulting Lender's unused Commitments accruing during such period pursuant to clauses (a) and (b) above (without prejudice to the rights of the Non-Defaulting Lenders in respect of such fees); provided, that (i) to the extent that a Ratable Portion of the Letter of Credit Obligations of such Defaulting Lender is reallocated to the Non-Defaulting Lenders pursuant to Section 2.23(a), such fees that would have accrued for the benefit of such Defaulting Lender will instead accrue for the benefit of and be payable to such Non-Defaulting Lenders, pro rata in accordance with their respective Commitments, (ii) to the extent that all or any portion of such Letter of Credit Obligations cannot be so reallocated or is not cash collateralized pursuant to Section 2.23(b), such fees will instead accrue for the benefit of and be payable to the relevant Issuer and the pro rata payment provisions of Section 2.15 will automatically be deemed adjusted to reflect the provisions of this Section 2.06(e), and (iii) in no event shall the Borrowers be required to pay any Facility Fee that otherwise would have been required to have been paid to any Lender during such period such Lender is a Defaulting Lender.

SECTION 2.07. Interest on Loans. (a) Subject to the provisions of Section 2.08, the unpaid principal amount of the Loans comprising each Base Rate Borrowing shall bear interest for each day (computed on the basis of the actual number of days elapsed over a year of 365 or 366 days, as the case may be, when the Base Rate is determined by reference to clause (a) of the definition of Base Rate and over a year of 360 days at all other times) at a rate per annum equal to the Base Rate from time to time in effect during the Interest Period for such Borrowing plus the Applicable Margin.

(b) Subject to the provisions of Section 2.08, the unpaid principal amount of the Loans comprising each SOFR Borrowing shall bear interest (computed on the basis of the actual number of days elapsed over a year of 360 days) at a rate per annum equal to the Adjusted Term SOFR for the Interest Period in effect for such Borrowing plus the Applicable Margin.

(c) Subject to the provisions of Section 2.08, the unpaid principal amount of the Loans comprising each EURIBOR Borrowing shall bear interest (computed on the basis of the actual

number of days elapsed over a year of 360 days) at a rate per annum equal to the EURIBOR for the Interest Period in effect for such Borrowing plus the Applicable Margin.

(d) Interest on each Loan shall be payable on the Interest Payment Dates applicable to such Loan except as otherwise provided in this Agreement. Interest shall accrue from and including the first day of an Interest Period to but excluding the last day of such Interest Period. The applicable Adjusted Term SOFR, EURIBOR or Base Rate for each Interest Period or day within an Interest Period, as the case may be, shall be determined by the Administrative Agent, and such determination shall be conclusive absent manifest error.

(e) In connection with the use or administration of Term SOFR or EURIBOR, the Administrative Agent will have the right to make Conforming Changes from time to time and, notwithstanding anything to the contrary herein or in any other Loan Document, any amendments implementing such Conforming Changes will become effective without any further action or consent of any other party to this Agreement or any other Loan Document. The Administrative Agent will promptly notify the Borrowers and the Lenders of the effectiveness of any Conforming Changes in connection with the use or administration of Term SOFR or EURIBOR.

SECTION 2.08. Default Interest. If any Borrower shall default in the payment of the principal of or interest on any Loan or any Reimbursement Obligation or any other amount becoming due hereunder, by acceleration or otherwise, such Borrower shall on demand from time to time pay interest, to the extent permitted by law, on such defaulted amount up to (but not including) the date of actual payment (after as well as before judgment) at a rate per annum equal to (a) in the case of overdue principal of any Loan, the rate otherwise applicable to such Loan as provided in Section 2.07 plus 2% per annum, or (b) in the case of any other amount, the rate applicable to Base Rate Borrowings plus 2% per annum.

SECTION 2.09. Alternate Rate of Interest.

(a) Subject to Section 2.24, if prior to 10:00 A.M. (New York City time) on any date on which an interest rate is to be determined pursuant to the definition of Adjusted Term SOFR, (i) the Administrative Agent shall have determined in good faith that Adjusted Term SOFR for any requested Interest Period with respect to a proposed SOFR Loan does not adequately and fairly reflect the cost to such Lenders of funding such Loan, or (ii) the Required Lenders have provided notice of such determination to the Administrative Agent, then the Administrative Agent shall promptly notify the Borrowers and each Lender of such circumstances. Upon notice thereof by the Administrative Agent to the Borrowers, any right of the Borrowers to select SOFR Loans for any requested Revolving Loan Borrowing or any subsequent Revolving Loan Borrowing shall be suspended (to the extent of the affected SOFR Loans or affected Interest Periods) until the Administrative Agent revokes such notice. Upon receipt of such notice, (i) the Borrowers may revoke any pending request for a borrowing of, conversion to or continuation of SOFR Loans (to the extent of the affected SOFR Loans or affected Interest Periods) or, failing that, the Borrowers will be deemed to have converted any such request into a request for a Borrowing of or conversion to Base Rate Loans in the amount specified therein and (ii) any outstanding affected SOFR Loans will be deemed to have been converted into Base Rate Loans at the end of the applicable Interest Period. Upon any such conversion, the Borrowers shall also pay accrued interest on the amount so converted, together with any additional amounts required pursuant to Section 2.14. Subject to Section 2.24, if the Administrative Agent determines (which determination shall be conclusive and binding absent manifest error) that "Adjusted Term SOFR" cannot be determined pursuant to the definition thereof on any given day, the interest rate on Base Rate Loans shall be determined by the Administrative Agent without reference to clause (c) of the definition of "Base Rate" until the Administrative Agent revokes such determination.

(b) If prior to 10:00 A.M. on any date on which an interest rate is to be determined pursuant to the definition of “EURIBOR”, (i) the Administrative Agent shall have determined (which determination shall be conclusive and binding on each Borrower) that adequate and reasonable means do not exist for determining EURIBOR for any requested Interest Period with respect to a proposed EURIBOR Loan, or (ii) the Administrative Agent shall have received notice from the Required Lenders in respect of the relevant facility that EURIBOR for any requested Interest Period with respect to a proposed EURIBOR Loan does not adequately and fairly reflect the cost to such Lenders of funding such EURIBOR Loan for such Interest Period, then the Administrative Agent shall promptly notify Howmet and each Lender of such circumstances, whereupon the right of Howmet to select EURIBOR Loans for any requested Borrowing (or for the purposes of Section 2.04, any requested conversion or continuance) or any subsequent Borrowing (or for the purposes of Section 2.04, any subsequent conversion or continuance) shall be suspended until the first date on which the circumstances causing such suspension cease to exist. If Howmet shall not, in turn, before 11:00 A.M. on such date notify the Administrative Agent that a Notice of Borrowing with respect to such EURIBOR shall be converted to a Notice of Borrowing for a Base Rate Loan, such Notice of Borrowing shall be deemed to be canceled and of no force or effect, and no Borrower shall be liable to the Administrative Agent or any Lender with respect thereto except as set forth in Section 2.14. Any outstanding affected EURIBOR Loans will be deemed to have been converted into Base Rate Loans (in an amount that is then equal to the Dollar Equivalent of such EURIBOR Loans) at the end of the applicable Interest Period. In the event of such a suspension, the Administrative Agent shall review the circumstances giving rise to such suspension at least weekly and shall notify Howmet and the Lenders promptly of the end of such suspension, and thereafter Howmet shall be entitled, on the terms and subject to the conditions set forth herein, to borrow EURIBOR Loans.

SECTION 2.10. Termination and Reduction of Commitments. (a) The Commitment of each Lender and the L/C Commitment of each Issuer shall terminate on the applicable Maturity Date.

(b) Upon at least ten (10) Business Days’ prior irrevocable, written or telecopy notice (which notice may be conditioned upon the closing of any financing arrangement obtained to refinance or replace the Facility) to the Administrative Agent, Howmet may at any time during the Revolving Credit Period in whole permanently terminate, or from time to time in part permanently reduce, the Total Commitment; provided, however, that (i) each partial reduction shall be in an integral multiple of the Dollar Equivalent of \$5,000,000 and in a minimum principal amount of the Dollar Equivalent of \$50,000,000 and (ii) the Total Commitment shall not be reduced to an amount that is less than the aggregate principal amount of the Revolving Credit Outstandings (after giving effect to any simultaneous prepayment pursuant to Section 2.11).

(c) Except for terminations of Commitment pursuant to Section 2.23(d) and Section 10.04(h), each reduction in Commitments hereunder shall be made ratably among the Lenders in accordance with each such Lender’s Ratable Portion of the Total Commitment. Howmet shall pay, or cause any other Borrower to pay, to the Administrative Agent for the account of the applicable Lenders, on the date of each such termination or reduction pursuant to this Section 2.10, the Facility Fee on the amount of the Commitments so terminated or reduced accrued to the date of such termination or reduction.

SECTION 2.11. Prepayment. (a) Each Borrower shall have the right at any time and from time to time to prepay any Borrowing, in whole or in part, upon (i) in the case of Base Rate Loans, same day written or teletype notice, (ii) in the case of EURIBOR Loans, at least three Business Days' prior written or teletype notice and (iii) in the case of SOFR Loans, at least three U.S. Government Securities Business Days' prior written or teletype notice to the Administrative Agent; provided, however, that each partial prepayment shall be in an amount which is an integral multiple of the Dollar Equivalent of \$5,000,000 and not less than the Dollar Equivalent of \$50,000,000.

(b) On the date of any termination or reduction of any Commitment pursuant to Section 2.10 and on each Extended Maturity Effective date, the Borrowers shall pay or prepay so much of the Loans (or cash collateralize Letters of Credit in accordance with the last paragraph of Article VII), as shall be necessary in order that, after giving effect to such reduction, termination or extension, the aggregate principal amount of the Revolving Credit Outstandings shall not exceed the Total Commitment.

(c) Each notice of prepayment shall specify the prepayment date and the principal amount of each Loan (or portion thereof) to be prepaid, shall be irrevocable (but may be conditioned upon the closing of any financing arrangement obtained to refinance or replace the Facility) and shall commit the applicable Borrower to prepay the Loan to which such notice relates by the amount stated therein on the date stated therein. All prepayments under this Section 2.11 shall be subject to Section 2.14 but otherwise without premium or penalty. All prepayments under this Section 2.11 shall be accompanied by accrued interest on the principal amount being prepaid to the date of payment.

(d) If at any time, the aggregate principal amount of Revolving Credit Outstandings exceeds the aggregate Commitments at such time, the Borrowers shall forthwith prepay the Loans then outstanding in an amount equal to such excess. If any such excess remains after repayment in full of the aggregate outstanding Loans, the Borrowers shall provide cash collateral for the Letter of Credit Obligations in accordance with the last paragraph of Article VII in an amount equal to 105% of such excess.

SECTION 2.12. Reserve Requirements; Change in Circumstances. (a) Notwithstanding any other provision herein other than Section 2.14(c) and with respect to Taxes (which shall be governed solely and exclusively by Section 2.18), if after the date of this Agreement any change in applicable law or regulation or in the interpretation or administration thereof by any Governmental Authority charged with the interpretation or administration thereof (whether or not having the force of law) shall impose, modify or deem applicable any reserve (including pursuant to regulations issued from time to time by the Board (or any successor) for determining the maximum reserve requirement (including, without limitation, any emergency supplemental or other marginal reserve requirement) for such Lender with respect to liabilities or assets which are eurocurrency liabilities as set forth in Regulation D of the Board of Governors of the Federal Reserve System, as in effect from time to time), special deposit or similar requirement against assets of, deposits with or for the account of or credit extended by any Lender that makes a SOFR Loan or EURIBOR Loan or shall impose on such Lender or the Euro interbank market or other market in which Lenders ordinarily raise Dollars or Euros, as applicable, to fund Loans of the requested Type any other condition affecting this Agreement or either SOFR Loans or EURIBOR Loans made by such Lender, and the result of any of the foregoing shall be to increase the cost to such Lender of funding, making or maintaining any SOFR Loan or EURIBOR Loan or to reduce the amount of any sum received or receivable by such Lender hereunder (whether of principal, interest or otherwise), by an amount reasonably determined by such Lender to be material, then Howmet will pay or cause the other Borrowers to pay to such Lender upon demand such additional amount or amounts as will compensate such Lender for such additional costs incurred or reduction suffered; provided, that such Lender shall be generally seeking, or intending generally to seek, comparable compensation from similarly situated borrowers under similar credit facilities (to the extent such Lender has the right under such similar credit facilities to do so) in similar circumstances.

(b) If any Lender reasonably determines that the introduction of any law regarding capital adequacy or liquidity or any change therein or in the interpretation thereof, or compliance by such Lender therewith, has the effect of reducing the rate of return on the capital of such Lender or any Parent Company of such Lender by an amount reasonably determined by such Lender or such Parent Company as a consequence of such Lender's obligations hereunder (taking into consideration such Lender's policies and the policies of such Parent Company with respect to capital adequacy and/or liquidity and such Lender's desired return on capital), then from time to time upon demand of such Lender (with a copy of such demand to the Administrative Agent), Howmet shall pay or cause the other Borrowers to pay to such Lender such additional amount or amounts as will compensate such Lender or such Parent Company for such reduction; provided, that (x) such Lender shall be generally seeking, or intending generally to seek, comparable compensation from similarly situated borrowers under similar credit facilities (to the extent such Lender has the right under such similar credit facilities to do so) with respect to such change in or in the interpretation in any law regarding capital requirements and (y) such additional amounts shall not be duplicative of any amounts to the extent otherwise paid by Howmet or the other Borrowers, as the case may be, under any other provision of this Agreement; provided, further that, this Section 2.12 shall be deemed to apply to all requests, rules, guidelines or directives concerning capital adequacy or liquidity issued in connection with the Dodd-Frank Wall Street Reform and Consumer Protection Act and all requests, rules, guidelines or directives concerning capital adequacy or liquidity promulgated by the Bank for International Settlements, the Basel Committee on Banking Regulations and Supervisory Practices (or any successor or similar authority) or the United States or foreign financial regulatory authorities, regardless of the date adopted, issued, promulgated or implemented.

(c) A certificate of each Lender setting forth such amount or amounts as shall be necessary to compensate such Lender or its Parent Company as specified in paragraph (a) or (b) above, as the case may be, together with a statement of reasons for such demand and showing the calculation for such amounts shall be delivered to Howmet and shall be conclusive absent manifest error; provided, that such certificate states that such Lender is treating substantially all similarly situated borrowers in a manner that is consistent with the treatment afforded the Borrowers hereunder. Howmet shall pay or cause to be paid to each Lender the amount shown as due on any such certificate delivered by it within ten (10) days after its receipt of the same.

(d) Except as provided in this paragraph, failure on the part of any Lender to demand compensation for any increased costs or reduction in amounts received or receivable or reduction in return on capital with respect to any period shall not constitute a waiver of such Lender's right to demand compensation with respect to such period or any other period. The protection of this Section 2.12 shall be available to each Lender regardless of any possible contention of the invalidity or inapplicability of the law, rule, regulation, guideline or other change or condition which shall have occurred or been imposed. No Lender shall be entitled to compensation under this Section 2.12 for any costs incurred or reductions suffered with respect to any date unless it shall have notified Howmet that it will demand compensation for such costs or reductions under paragraph (c) above not more than 60 days after the later of (i) such date and (ii) the date on which it shall have or reasonably should have become aware of such costs or reductions; provided that if the applicable change or introduction with respect to the relevant law or regulation giving rise to such costs or reductions is retroactive, then the 60 day period referred to above shall be extended to include the period of retroactive effect thereof. In the event a Borrower shall reimburse any Lender pursuant to this Section 2.12 for any cost and the Lender shall subsequently receive a refund in respect thereof, the Lender shall so notify such Borrower and shall pay to such Borrower the portion of such refund which it shall determine in good faith to be allocable to the cost so reimbursed.

SECTION 2.13. Change in Legality. (a) Notwithstanding any other provision herein other than Section 2.14(c), if any change in any law or regulation or in the interpretation thereof by any Governmental Authority charged with the administration or interpretation thereof shall make it unlawful for any Lender to make or maintain any SOFR Loan or any EURIBOR Loan or to give effect to its obligations as contemplated hereby with respect to any SOFR Loan or any EURIBOR Loan, then, by written or telecopy notice to Howmet and the Administrative Agent, such Lender may:

(i) declare that such SOFR Loan or EURIBOR Loan, as applicable, will not thereafter be made by such Lender hereunder, whereupon any request by a Borrower for a SOFR Borrowing or EURIBOR Borrowing, as applicable, shall, as to such Lender only, be deemed a request for a Base Rate Loan unless such declaration shall be subsequently withdrawn; and

(ii) require that all outstanding SOFR Loans or EURIBOR Loans, as applicable, made by it be converted to Base Rate Loans, in which event all such SOFR Loans or EURIBOR Loans shall automatically be so converted as of the effective date of such notice as provided in paragraph (b) below.

During such suspension period, the Borrowers shall, if necessary to avoid such illegality, upon demand from any Lender (with a copy to the Administrative Agent), (i) convert all affected SOFR Loans to Base Rate Loans or (ii) convert all EURIBOR Loans to Base Rate Loans denominated in Dollars (in an amount that is then equal to the Dollar Equivalent of such EURIBOR Loans) (in each case, if necessary to avoid such illegality, the Administrative Agent shall compute the Base Rate without reference to clause (c) of the definition of "Base Rate"), (A) with respect to SOFR Loans, on the Interest Payment Date therefor, if all affected Lenders may lawfully continue to maintain such SOFR Loans to such day, or immediately, if any Lender may not lawfully continue to maintain such SOFR Loans to such day or (B) with respect to EURIBOR Loans, on the last day of the Interest Period therefor, if all affected Lenders may lawfully continue to maintain such EURIBOR Loans, to such day, or immediately, if any Lender may not lawfully continue to maintain such EURIBOR Loans, as applicable, to such day. Upon any such conversion, the Borrower shall also pay accrued interest on the amount so prepaid or converted, together with any additional amounts required pursuant to Section 2.14. In the event any Lender shall exercise its rights under clause (i) or (ii) above, all payments and prepayments of principal which would otherwise have been applied to repay the SOFR Loans or EURIBOR Loans, as applicable, that would have been made by such Lender or the converted SOFR Loans or EURIBOR Loans of such Lender shall instead be applied to repay the Loans made by such Lender in lieu of, or resulting from the conversion of, such SOFR Loans or EURIBOR Loans, as applicable.

(b) For purposes of this Section 2.13, a notice by any Lender shall be effective as to each SOFR Loan or EURIBOR Loan, as applicable, if lawful, on the last day of the Interest Period applicable to such SOFR Loan or EURIBOR Loan; in all other cases such notice shall be effective on the date of receipt.

SECTION 2.14. Indemnity. Howmet shall indemnify or cause the other Borrowers to indemnify each Lender against any loss or expense (excluding loss of anticipated profits) which such Lender may sustain or incur as a consequence of (a) any failure to fulfill on the date of any Borrowing hereunder the applicable conditions set forth in Article IV, (b) any failure by a Borrower to borrow any SOFR Loan or EURIBOR Loan hereunder after irrevocable notice of such Borrowing has been given pursuant to Section 2.03, (c) any payment or prepayment of a SOFR Loan or EURIBOR Loan required by any other provision of this Agreement or otherwise made or deemed made on a date other than the last day of the Interest Period applicable thereto, other than any loss of profit resulting from any event, circumstance or condition set forth in Section 2.12 or 2.13, (d) any default in payment or prepayment of

the principal amount of any SOFR Loan or EURIBOR Loan or any part thereof or interest accrued thereon, as and when due and payable (at the due date thereof, whether by scheduled maturity, acceleration, irrevocable notice of prepayment or otherwise), (e) the occurrence of any Event of Default or (f) the assignment of a SOFR Loan or EURIBOR Loan other than on the last day of the Interest Period applicable thereto as the result of a request by a Borrower pursuant to Section 2.19, including, in each such case, any loss or reasonable expense sustained or incurred or to be sustained or incurred in liquidating or employing deposits from third parties acquired to effect or maintain such Loan or any part thereof as a SOFR Loan or EURIBOR Loan. Such loss or reasonable expense shall include an amount equal to the excess, if any, as reasonably determined by such Lender, of (i) its cost of obtaining the funds for the Loan being paid, prepaid or not borrowed (assumed to be Adjusted Term SOFR or EURIBOR applicable thereto) for the period from the date of such payment, prepayment or failure to borrow to the last day of the Interest Period for such Loan (or, in the case of a failure to borrow the Interest Period for such Loan which would have commenced on the date of such failure) over (ii) the amount of interest (as reasonably determined by such Lender) that would be realized by such Lender in reemploying the funds so paid, prepaid or not borrowed for such period or Interest Period, as the case may be. A certificate of any Lender setting forth any amount or amounts which such Lender is entitled to receive pursuant to this Section together with a statement of reasons for such demand and the calculation of such amount or amounts shall be delivered to Howmet and shall be conclusive absent manifest error.

SECTION 2.15. Pro Rata Treatment. Except as required under Section 2.13 or as provided under Section 2.06(e), each Borrowing, each payment or prepayment of principal of any Borrowing, each payment of interest on the Loans, each payment of the Facility Fee and each conversion or continuation of any Borrowing with a Borrowing of any Type, shall be allocated pro rata among the Lenders in accordance with their respective Commitments (or, if such Commitments shall have expired or been terminated, in accordance with the respective principal amounts of their outstanding Loans). Each Lender agrees that in computing such Lender's portion of any Borrowing to be made hereunder, the Administrative Agent may, in its discretion, round each Lender's percentage of such Borrowing, computed in accordance with Schedule 2.01(a), to the next higher or lower whole of the Dollar Equivalent amount. All payments of fees (other than the Facility Fee) and all other payments in respect of any other Obligation shall be allocated among such of the Lenders and Issuers as are entitled thereto and, for such payments allocated to the Lenders, in proportion to their respective Ratable Portions.

SECTION 2.16. Sharing of Setoffs. Each Lender agrees that if it shall, through the exercise of a right of banker's lien, setoff or counterclaim against any Borrower, or pursuant to a secured claim under Section 506 of Title 11 of the United States Code or other security or interest arising from, or in lieu of, such secured claim, received by such Lender under any applicable bankruptcy, insolvency or other similar law or otherwise, or by any other means, obtain payment (voluntary or involuntary) in respect of any Loan or Loans or any Letter of Credit Obligation as a result of which the unpaid principal portion of its Revolving Credit Outstandings shall be proportionately less than the unpaid principal portion of the Revolving Credit Outstandings of any other Lender, it shall be deemed simultaneously to have purchased from such other Lender at face value, and shall promptly pay to such other Lender the purchase price for, a participation in the Revolving Credit Outstandings of such other Lender, so that the aggregate unpaid principal amount of the Revolving Credit Outstandings and participations in Revolving Credit Outstandings held by each Lender shall be in the same proportion to the aggregate unpaid principal amount of all Revolving Credit Outstandings then outstanding as the principal amount of its Revolving Credit Outstandings prior to such exercise of banker's lien, setoff or counterclaim or other event was to the principal amount of all Revolving Credit Outstandings outstanding prior to such exercise of banker's lien, setoff or counterclaim or other event; provided, however, that, (i) if any such purchase or purchases or adjustments shall be made pursuant to this Section and the payment giving rise thereto shall thereafter be recovered, such purchase or purchases or adjustments shall be rescinded to the extent of such recovery and the purchase price or prices or adjustment restored without interest and (ii) the provisions of this paragraph shall not apply to (x) any payment made by any Borrower pursuant to and in accordance with

the express terms of this Agreement, (y) any payment obtained by any lender as consideration for the assignment of or sale of a participation in any of its Revolving Credit Outstandings to any permitted assignee or participation or (z) the application of cash collateral provided for in Section 2.23 or the last paragraph of Article VII. Howmet and each other Borrower expressly consent to the foregoing arrangements and agree that any Lender holding a participation in any of the Revolving Credit Outstandings deemed to have been so purchased may exercise any and all rights of banker's lien, setoff or counterclaim with respect to any and all moneys owing by Howmet or such other Borrower to such Lender by reason thereof as fully as if such Lender had made a Loan or otherwise extended credit directly to Howmet or such Borrower in the amount of such participation.

SECTION 2.17. Payments. (a) Each payment or prepayment by any Borrower of the principal of or interest on any Loans, any fees payable to the Administrative Agent or the Lenders or any other amounts due hereunder (other than amounts referred to in clause (b) below) shall be made, without setoff or counterclaim, not later than 12:00 (noon), New York City time, on the date when due, in the currency specified herein (or, if no such currency is specified, in Dollars) to the Administrative Agent at its offices at One Penns Way, Building OPS II, Floor 2, New Castle, Delaware, 19720, in immediately available funds.

(b) Whenever any payment (including principal of or interest on any Borrowing or any fees or other amounts) hereunder shall become due, or otherwise would occur, on a day that is not a Business Day, except as provided in the definition of Interest Period, such payment may be made on the next succeeding Business Day, and such extension of time shall in such case be included in the computation of interest or fees, if applicable.

(c) Each payment by any Borrower of any Loan, Reimbursement Obligation (including interest or fees in respect thereof) and each reimbursement of various costs, expenses or other Obligation shall be made in the currency in which such Loan was made, such Letter of Credit issued or such cost, expense or other Obligation was incurred; provided, however, that the Letter of Credit Reimbursement Agreement for a Letter of Credit may specify another currency for the Reimbursement Obligation in respect of such Letter of Credit.

SECTION 2.18. Taxes. (a) Any and all payments by or on behalf of a Borrower hereunder shall be made free and clear of and without deduction for any Indemnified Taxes. If any Borrower shall be required by law to deduct any Indemnified Taxes or Other Taxes from or in respect of any sum payable hereunder to the Lenders or the Issuers (or any Transferee) or the Administrative Agent, (i) the sum payable shall be increased by the amount necessary so that after making all required deductions (including deductions applicable to additional sums payable under this Section 2.18) such Lender or Issuer (or Transferee) or the Administrative Agent (as the case may be) shall receive an amount equal to the sum it would have received had no such deductions been made, (ii) such Borrower shall make such deductions and (iii) such Borrower shall pay the full amount deducted to the relevant taxing authority or other Governmental Authority in accordance with applicable law; provided, however, that no Transferee of any Lender shall be entitled to receive any greater payment under this Section 2.18 than such Lender would have been entitled to receive immediately before assignment, participation or other transfer with respect to the rights assigned, participated or transferred unless such assignment, participation or transfer shall have been made (A) prior to the occurrence of an event (including any change in treaty, law or regulation) giving rise to such greater payment or (B) at the request of Howmet.

(b) In addition, each Borrower agrees to pay any present or future stamp or documentary taxes or any other excise or property taxes, charges or similar levies which arise from any payment made hereunder or from the execution, delivery or registration of, or otherwise with respect to, this Agreement (herein referred to as “Other Taxes”).

(c) Each Borrower will indemnify each Lender and each Issuer (or Transferee) and the Administrative Agent for the full amount of Indemnified Taxes and Other Taxes (including any Indemnified Taxes or Other Taxes imposed by any jurisdiction on amounts payable under this Section 2.18(c)) paid by such Lender or Issuer (or Transferee) or the Administrative Agent, as the case may be, and any liability (including penalties, interest and expenses) arising therefrom or with respect thereto. Such indemnification shall be made within 30 days after the date any Lender or Issuer (or Transferee) or the Administrative Agent, as the case may be, makes written demand therefor, together with a statement of reasons for such demand and the calculations of such amount. Such calculations, if made in good faith, absent manifest error, shall be final and conclusive on all parties.

(d) Within 30 days after the date of any payment of Taxes or Other Taxes withheld by any Borrower in respect of any payment to any Lender or Issuer (or Transferee) or the Administrative Agent, such Borrower will furnish to the Administrative Agent, at its address referred to in Section 10.01, the original or a certified copy of a receipt evidencing payment thereof (or other evidence satisfactory to the Administrative Agent).

(e) Without prejudice to the survival of any other agreement contained herein, the agreements and obligations contained in this Section 2.18 shall survive the payment in full of the principal of and interest on all Loans made hereunder.

(f) Each Lender and each Issuer (or Transferee) represents to Howmet that, on the date such Lender (or such Transferee) becomes a party to this Agreement, it is eligible to receive payments of interest hereunder from Howmet or any Borrowing Subsidiary without withholding in respect of United States Federal withholding tax (except, in the case of a Transferee of any Lender, as a result of the occurrence of an event (including a change in treaty, law or regulation) after the date of this Agreement giving rise to withholding to which such Lender would be subject).

(g) Each Lender and each Issuer (or Transferee), other than a Transferee described in the exception in Section 2.18(f), that is not a “United States person,” within the meaning of Section 7701(a)(30) of the Code, shall, on or before the date it becomes a party to this Agreement (or, in the case of a Transferee that is a participation holder, on or before the date such Transferee becomes a participation holder hereunder), deliver to Howmet and the Administrative Agent such certificates, documents or other evidence, as required by the Code or Treasury Regulations issued pursuant thereto, including Internal Revenue Service Form W-8BEN, Form W-8BEN-E, Form W-8ECI, or any other applicable certificate or statement of exemption, properly completed and duly executed by such Lender or Issuer (or Transferee) establishing that payment made to such Lender or Issuer (or Transferee) is (i) not subject to United States Federal withholding tax under the Code because such payments are effectively connected with the conduct by such Lender or Issuer (or Transferee) of a trade or business in the United States, (ii) totally exempt from United States Federal withholding tax under a provision of an applicable tax treaty, or (iii) eligible for the benefits of the exemption for portfolio interest under Section 881(c) of the Code, in which case such Lender or Issuer (or Transferee) shall also deliver a certificate to the effect that such Lender or Issuer is not (A) a “bank” within the meaning of Section 881(c)(3)(A) of the Code, (B) a “10 percent shareholder” of any of the Borrowers within the meaning of Section 881(c)(3)(B) of the Code, or (C) a “controlled foreign corporation” described in Section 881(c)(3)(C) of the Code. In addition, each such Lender or Issuer (or such Transferee) shall, if legally able to do so, thereafter deliver such certificates, documents or other evidence from time to time establishing that payments received

hereunder are not subject to, or subject to a reduced rate of, such withholding upon receipt of a written request therefor from Howmet or the Administrative Agent or within 30 days of any certificate or statement of exemption previously provided becoming incorrect. Unless Howmet and the Administrative Agent have received forms or other documents satisfactory to them indicating that payments hereunder are not subject to, or subject to a reduced rate of, United States Federal withholding tax, Howmet or the Administrative Agent shall withhold such taxes from such payments at the applicable statutory rate.

(h) Each Lender and each Issuer (or Transferee) that is a “United States person,” shall, on or before the date it becomes a party to this Agreement (or, in the case of a Transferee that is a participation holder, on or before the date such Transferee becomes a participation holder hereunder), deliver to Howmet and the Administrative Agent such certificates, documents or other evidence, as required by the Code or Treasury Regulations issued pursuant thereto, including Internal Revenue Service Form W-9 or any other applicable certificate or statement of exemption properly completed and duly executed by such Lender or Issuer (or Transferee) establishing that payment made to such Lender or Issuer (or Transferee) is not subject to United States Federal backup withholding tax under the Code. In addition, each such Lender or Issuer (or such Transferee) shall, if legally able to do so, thereafter deliver such certificates, documents or other evidence from time to time establishing that payments received hereunder are not subject to such withholding upon receipt of a written request therefor from Howmet or the Administrative Agent. Unless Howmet and the Administrative Agent have received forms or other documents satisfactory to them indicating that payments hereunder are not subject to United States Federal backup withholding tax, Howmet or the Administrative Agent shall withhold such taxes from such payments at the applicable statutory rate.

(i) Each Lender or Issuer (or Transferee) that is entitled to any exemption or reduction of non-U.S. withholding tax with respect to any payment under this Agreement shall, on or before the date it becomes a party to this Agreement (or, in the case of a Transferee that is a participation holder, on or before the date such Transferee becomes a participation holder hereunder), deliver to Howmet and the Administrative Agent such certificates, documents or other evidence, as required by law, or as may reasonably be requested by Howmet, establishing that such payment is not subject to, or is subject to a reduced rate of, withholding. In addition, each such Lender or Issuer (or such Transferee) shall, if legally able to do so, thereafter deliver such certificates, documents or other evidence from time to time establishing that payments received hereunder are not subject to such withholding upon receipt of a written request therefor from Howmet or the Administrative Agent.

(j) None of the Borrowers shall be required to pay any additional amounts to any Lender or Issuer (or Transferee) in respect of any withholding tax pursuant to paragraph (a) above to the extent that the obligation to pay such additional amounts would not have arisen but for a failure by such Lender or Issuer (or Transferee) to deliver the certificates, documents or other evidence required to be delivered under the preceding paragraph (g), (h) or (i) unless such failure is attributable to (i) a change in applicable law, regulation or official interpretation thereof or (ii) an amendment or modification to or a revocation of any applicable tax treaty or a change in official position regarding the application or interpretation thereof, in each case on or after the date such Lender or Issuer (or Transferee) became a party to this Agreement.

(k) Any Lender or Issuer (or Transferee) claiming any additional amounts payable pursuant to this Section 2.18 shall use reasonable efforts (consistent with its internal policies and legal and regulatory restrictions) to, at the expense of the Borrowers, file any certificate or document reasonably requested in writing by the relevant Borrower or to change the jurisdiction of its applicable lending office if the making of such a filing or change would avoid the need for or reduce the amount of any such additional amounts which may thereafter accrue and would not, in the sole determination of such Lender or Issuer (or Transferee), be otherwise disadvantageous to such Lender or Issuer (or Transferee).

(l) If any Lender or Issuer (or Transferee) or the Administrative Agent receives a refund in respect of any Indemnified Taxes or Other Taxes as to which it has been indemnified by a Borrower pursuant to this Section 2.18, it shall promptly repay such refund to such Borrower (to the extent of amounts that have been paid by such Borrower under this Section 2.18 with respect to such refund), net of all out-of-pocket expenses (including Taxes imposed with respect to such refund) of such Lender or Issuer (or Transferee) or the Administrative Agent and without interest (other than interest paid by the relevant taxing authority with respect to such refund); provided, however, that such Borrower, upon the request of such Lender or Issuer (or Transferee) or the Administrative Agent, agrees to return such refund (plus penalties, interest or other charges) to such Lender or Issuer (or Transferee) or the Administrative Agent in the event such Lender or Issuer (or Transferee) or the Administrative Agent is required to repay such refund. Nothing in this Section 2.18 shall obligate any Lender or Issuer (or Transferee) or the Administrative Agent to apply for any such refund.

(m) Nothing contained in this Section 2.18 shall require any Lender or Issuer (or Transferee) or the Administrative Agent to make available any of its tax returns (or any other information relating to its Taxes which it deems to be confidential).

(n) No Borrower shall be required to reimburse any Lender or Issuer (or Transferee) or the Administrative Agent with respect to any Indemnified Taxes or Other Taxes unless such Lender, Issuer, Transferee or the Administrative Agent notifies such Borrower of the amount of such Indemnified Taxes or Other Taxes on or before the second anniversary of the date such Lender, Issuer, Transferee or the Administrative Agent pays such Indemnified Taxes or Other Taxes.

SECTION 2.19. Assignment of Loans and Commitments Under Certain Circumstances. In the event that (i) any Lender shall have delivered a notice or certificate pursuant to Section 2.12 or 2.13, (ii) a Borrower shall be required to make additional payments to any Lender under Section 2.18 or (iii) any Lender becomes a Defaulting Lender, Howmet shall have the right, at its own expense, upon notice to such Lender and the Administrative Agent, to require such Lender to transfer and assign without recourse (in accordance with and subject to the restrictions contained in Section 10.04) all its interests, rights and obligations under this Agreement to another financial institution or other entity which shall assume such obligations; provided, however, that (i) no such assignment shall conflict with any law, rule or regulation or order of any Governmental Authority and (ii) Howmet or the assignee, as the case may be, shall pay (or, in the case of Howmet, cause another Borrower to pay) to the affected Lender in immediately available funds on the date of such termination or assignment the principal of and interest accrued to the date of payment on the Loans made by it hereunder and all other amounts accrued for its account or owed to it hereunder.

SECTION 2.20. Increase in Commitments. Howmet may from time to time, by written notice to the Administrative Agent, executed by Howmet and one or more financial institutions (any such financial institution referred to in this Section being called a "Prospective Lender"), which may include any Lender, cause the Commitments of the Prospective Lenders to be increased (or cause Commitments to be extended by the Prospective Lenders, as the case may be) in an amount for each Prospective Lender set forth in such notice; provided, however, that (i) the amount of any such increase in the Commitments shall be no less than \$25,000,000, (ii) the sum of the aggregate amount of increases in Commitments under this Section 2.20, during the term of this Agreement, shall not exceed \$500,000,000, (iii) each Prospective Lender, if not already a Lender hereunder, shall be subject to the approval of the Administrative Agent (which approval shall not be unreasonably withheld) and (iv) each Prospective Lender, if not already a Lender hereunder, shall become a party to this Agreement by completing and delivering to the Administrative Agent a duly executed Accession Agreement. Increases in Commitments and new Commitments created pursuant to this Section shall become effective (A) in the case of Prospective Lenders already parties hereto, on the date specified in the notice delivered pursuant to this Section and (B) in the case of Prospective Lenders not already parties hereunder, on the effective date of

the Accession Agreement. Upon the effectiveness of any Accession Agreement to which any Prospective Lender is a party, (i) such Prospective Lender shall thereafter be deemed to be a party to this Agreement and shall be entitled to all rights, benefits and privileges accorded a Lender hereunder and subject to all obligations of a Lender hereunder and (ii) Schedule 2.01(a) shall be deemed to have been amended to reflect the Commitment of the additional Lender as provided in such Accession Agreement. Upon the effectiveness of any increase pursuant to this Section in the Commitment of a Lender already a party hereunder, Schedule 2.01(a) shall be deemed to have been amended to reflect the increased Commitment of such Lender. Notwithstanding the foregoing, no increase in the aggregate Commitments (or in the Commitment of any Lender) shall become effective under this Section unless (i) the Administrative Agent shall have received (A) a written opinion reasonably satisfactory to the Administrative Agent and the Lenders of Delaware counsel, as Counsel of Howmet, addressed to the Administrative Agent and the Lenders and (B) documents consistent with those delivered under paragraph (a) of Section 4.04 as to the corporate power and authority of Howmet to borrow hereunder after giving effect to such increase and (ii) on the date of such increase, the conditions set forth in paragraphs (b) and (c) of Section 4.02 shall be satisfied (with all references in such paragraphs to a Borrowing being deemed to be references to such increase) and the Administrative Agent shall have received a certificate to that effect dated such date and executed by a Financial Officer of Howmet. Following any increase of a Lender's Commitment or any extension of a new Commitment pursuant to this paragraph, any Loans outstanding prior to the effectiveness of such increase or extension shall continue outstanding until the ends of the respective Interest Periods applicable thereto, and shall then be repaid or refinanced with new Loans made pursuant to Section 2.01; provided that notwithstanding anything to the contrary in this Agreement, the conditions to borrowing set forth in Section 4.02 shall not apply to such new Loans to the extent they are in a principal amount not greater than that of the Loans being refinanced. Notwithstanding anything to the contrary in this Agreement, no Lender shall be required to be a Prospective Lender.

SECTION 2.21. Extensions of Initial Scheduled Maturity Date. (a) Howmet may, by written notice to the Administrative Agent (each an "Extension Request") given on any date no later than forty-five (45) days prior to each one year anniversary of the Closing Date, requesting that the Initial Scheduled Maturity Date be extended (i) to the First Extended Maturity Date (the "First Extension") or, (ii) to the extent the Initial Scheduled Maturity Date shall have been extended to the First Extended Maturity Date, to the Second Extended Maturity date (the "Second Extension"); provided, however, that Howmet may only give two such Extension Requests during the terms of this Agreement. The Administrative Agent shall promptly advise the Lenders and the Issuers of any Extension Request given pursuant to this Section 2.21.

(b) The Initial Scheduled Maturity Date shall be extended (i) with respect to the Commitment, Loans and the other rights and obligations of the Lenders or Issuers that, each acting in its sole discretion, have consented to the First Extension, to the First Extended Maturity Date and (ii) with respect to the Commitment, Loans and the other rights and obligations of the Lenders or Issuers that, each acting in its sole discretion, have consented to the Second Extension, to the Second Extended Maturity Date, in each case of (i) and (ii) above, if (A) the Administrative Agent shall have received the written consent of the Required Lenders to the applicable Extension Request prior to the one year anniversary of the Closing Date occurring immediately after the date on which the applicable Extension Request has been given (each such date, an "Extended Maturity Effective Date"); (B) the representations and warranties set forth in Article III hereof shall be true and correct in all material respects on and as of the applicable Extended Maturity Effective Date with the same effect as though made on and as of such date, except to the extent such representations and warranties expressly relate to an earlier date; (C) each Borrower shall be in compliance in all material respects with all the terms and provisions set forth herein on its part to be observed or performed, and on the applicable Extended Maturity Effective Date and immediately after the Initial Scheduled Maturity Date has been extended as requested in the applicable Extension Request, no Event of Default or Default shall have occurred and be continuing; and (D) the

Administrative Agent shall have received (x) the relevant Extension Request and (y) a certificate dated the applicable Extended Maturity Effective Date confirming the satisfaction of the condition set forth in clause (B) above and that as of such Extended Maturity Effective Date, no Event of Default or Default has occurred and is continuing. In no event shall the Initial Scheduled Maturity Date or the First Extended Maturity Date, as applicable, be extended with respect to the Commitments, Loans or any other right or obligations hereunder of any Lender or Issuer without the prior written consent of such Lender or Issuer to such extension.

(c) In the event that any Lender or any Issuer shall not have consented to an Extension Request, Howmet shall have the right, at its own expense, upon notice to such Lender or Issuer and the Administrative Agent, to require such Lender or Issuer to transfer and assign without recourse (in accordance with and subject to the restrictions contained in Section 10.04) all its interests, rights and obligations under this Agreement to another financial institution or other entity (provided, in the case of a replacement of an Issuer, that such financial institution or other entity complies with the definition of Issuer hereunder) that has informed the Administrative Agent of its consent to such Extension Request in writing prior to the applicable Extended Maturity Effective Date, which shall assume such obligations; provided, however, that (i) no such assignment shall conflict with any law, rule or regulation or order of any Governmental Authority and (ii) Howmet or the assignee, as the case may be, shall pay (or, in the case of Howmet, cause another Borrower to pay) to the affected Lender or Issuer in immediately available funds on the date of such termination or assignment the principal of and interest accrued to the date of payment on the Loans made or Letter of Credit Issued by such affected Lender or Issuer, as applicable, and all other amounts accrued for such affected Lender's or Issuer's account or owed to it hereunder.

SECTION 2.22. Letters of Credit. (a) On the terms and subject to the conditions contained in this Agreement, each Issuer, in its sole discretion, may elect to Issue at the request of any Borrower and for the account of such Borrower one or more Letters of Credit from time to time on any Business Day during the Revolving Credit Period; provided, however, that no Issuer shall be under any obligation to Issue (and, upon the occurrence of any of the events described in clauses (ii), (iii), (iv), (v), and (vi)(A) below, shall not Issue) any Letter of Credit upon the occurrence of any of the following:

(i) any order, judgment or decree of any Governmental Authority or arbitrator shall purport by its terms to enjoin or restrain such Issuer from Issuing such Letter of Credit or any requirement of law applicable to such Issuer or any request or directive (whether or not having the force of law) from any Governmental Authority with jurisdiction over such Issuer shall prohibit, or request that such Issuer refrain from, the Issuance of letters of credit generally or such Letter of Credit in particular or shall impose upon such Issuer with respect to such Letter of Credit any restriction or reserve or capital requirement (for which such Issuer is not otherwise compensated) not in effect on the date of this Agreement or result in any unreimbursed loss, cost or expense that was not applicable, in effect or known to such Issuer as of the date of this Agreement and that such Issuer in good faith deems material to it;

(ii) such Issuer shall have received any written notice of the type described in clause (d) below;

(iii) after giving effect to the Issuance of such Letter of Credit, the aggregate Revolving Credit Outstandings would exceed the aggregate Commitments in effect at such time;

(iv) after giving effect to the Issuance of such Letter of Credit, (A) the sum of (i) the Dollar Equivalents of the aggregate undrawn face amount of all Letters of Credit Issued by such Issuer outstanding at such time and (ii) the Dollar Equivalent of the Reimbursement Obligations owed to such Issuer at such time exceeds such Issuer's L/C Commitment or (B) the sum of (i) the Dollar Equivalents of the Letter of Credit Undrawn Amounts at such time and (ii) the Dollar Equivalents of the Reimbursement Obligations at such time exceeds the Letter of Credit Sublimit;

(v) such Letter of Credit is requested to be denominated in any currency other than Dollars or Euros; or

(vi) (A) any fees due in connection with a requested Issuance have not been paid, (B) such Letter of Credit is requested to be Issued in a form that is not acceptable to such Issuer or (C) the Issuer for such Letter of Credit shall not have received, in form and substance reasonably acceptable to it and, if applicable, duly executed by such Borrower, applications, agreements and other documentation (collectively, a "Letter of Credit Reimbursement Agreement") such Issuer generally employs in the ordinary course of its business for the Issuance of letters of credit of the type of such Letter of Credit.

None of the Lenders (other than the Issuers in their capacity as such) shall have any obligation to Issue any Letter of Credit.

(b) In no event shall the expiration date of any Letter of Credit (i) be more than one year after the date of issuance thereof or (ii) be less than five Business Days prior to the Initial Scheduled Maturity Date (or, (A) with respect to any Letter of Credit Issued by any Issuer that has consented to the First Extension, if each of the conditions set forth in Section 2.21(b) with respect to the First Extension shall have been satisfied, the First Extended Maturity Date or (B) with respect to any Letter of Credit Issued by any Issuer that has consented to the Second Extension, if each of the conditions set forth in Section 2.21(b) with respect to the Second Extension shall have been satisfied, the Second Extended Maturity Date); provided, however, that any Letter of Credit with a term less than or equal to one year may provide for the renewal thereof for additional periods less than or equal to one year, as long as, (x) on or before the expiration of each such term and each such period, the applicable Borrower and the Issuer of such Letter or Credit shall have the option to prevent such renewal and (y) such Borrower shall not permit any such renewal to extend the expiration date of any Letter beyond the date set forth in clause (ii) above.

(c) In connection with the Issuance of each Letter of Credit, the applicable Borrower shall give the relevant Issuer and the Administrative Agent at least two Business Days' prior written notice, in substantially the form of Exhibit E (or in such other written or electronic form as is acceptable to the Issuer), of the requested Issuance of such Letter of Credit (a "Letter of Credit Request"). Such notice shall be irrevocable and shall specify the Issuer of such Letter of Credit, the currency of issuance and face amount of the Letter of Credit requested (whose Dollar Equivalent shall not be less than \$1,000,000), the date of Issuance of such requested Letter of Credit, the date on which such Letter of Credit is to expire (which date shall be a Business Day) and, in the case of an issuance, the person for whose benefit the requested Letter of Credit is to be issued. Such notice, to be effective, must be received by the relevant Issuer and the Administrative Agent not later than 11:00 a.m. (New York time) on the second Business Day prior to the requested Issuance of such Letter of Credit.

(d) Subject to the satisfaction of the conditions set forth in this Section 2.22, the relevant Issuer, in its sole discretion, may elect to Issue, on the requested date a Letter of Credit on behalf of the applicable Borrower in accordance with such Issuer's usual and customary business practices. No Issuer shall Issue any Letter of Credit in the period commencing on the first Business Day after it receives written notice from any Lender or the Administrative Agent that one or more of the conditions precedent contained in Section 4.02 or clause (a) above (other than those conditions set forth in clauses (a)(i), (a)(vi)(B) and (C) above and, to the extent such clause relates to fees owing to the Issuer of such Letter of Credit and its Affiliates, clause (a)(vi)(A) above) are not on such date satisfied or duly waived and ending when such conditions are satisfied or duly waived. No Issuer shall otherwise be required to determine that, or take notice whether, the conditions precedent set forth in Section 4.02 have been satisfied in connection with the Issuance of any Letter of Credit.

(e) Each Borrower agrees that, if requested by the Issuer of any Letter of Credit, it shall execute a Letter of Credit Reimbursement Agreement in respect to any Letter of Credit Issued hereunder for the account of such Borrower. In the event of any conflict between the terms of any Letter of Credit Reimbursement Agreement and this Agreement, the terms of this Agreement shall govern.

(f) Each Issuer shall comply with the following:

(i) give the Administrative Agent written notice (which writing may be a telecopy or electronic mail) of the Issuance of any Letter of Credit Issued by it, of all drawings under any Letter of Credit Issued by it and of the payment (or the failure to pay when due) by any Borrower of any Reimbursement Obligation when due (which notice the Administrative Agent shall promptly transmit by telecopy, electronic mail or similar transmission to each Lender);

(ii) upon the request of any Lender, furnish to such Lender copies of any Letter of Credit Reimbursement Agreement to which such Issuer is a party and such other documentation as may reasonably be requested by such Lender; and

(iii) no later than 10 Business Days following the last day of each calendar quarter, provide to the Administrative Agent (and the Administrative Agent shall provide a copy to each Lender requesting the same) and Howmet separate schedules for Documentary Letters of Credit and Standby Letters of Credit issued by it, in form and substance reasonably satisfactory to the Administrative Agent, setting forth the aggregate Letter of Credit Obligations, in each case outstanding at the end of each quarter and any information requested by the Borrowers or the Administrative Agent relating thereto.

(g) Immediately upon the issuance by an Issuer of a Letter of Credit in accordance with the terms and conditions of this Agreement, such Issuer shall be deemed to have sold and transferred to each Lender, and each Lender shall be deemed irrevocably and unconditionally to have purchased and received from such Issuer, without recourse or warranty, an undivided interest and participation, to the extent of such Lender's Ratable Portion of the Commitments, in such Letter of Credit and the obligations of the Borrowers with respect thereto (including all Letter of Credit Obligations with respect thereto) and any security therefor and guaranty pertaining thereto.

(h) Howmet and each other Borrower agrees to pay to the Issuer of any Letter of Credit the amount of all Reimbursement Obligations owing to such Issuer under any Letter of Credit issued for its account no later than the date that is the next succeeding Business Day after such Borrower receives written notice from such Issuer that payment has been made under such Letter of Credit (the "Reimbursement Date"), irrespective of any claim, set-off, defense or other right that such Borrower may have at any time against such Issuer or any other person. In the event that any Issuer makes any payment

under any Letter of Credit and the Borrowers shall not have repaid such amount to such Issuer pursuant to this clause (h) or any such payment by the Borrowers is rescinded or set aside for any reason, such Reimbursement Obligation shall be payable on demand with interest thereon computed (i) from the date on which such Reimbursement Obligation arose to the Reimbursement Date, at the rate of interest applicable during such period to Loans that are Base Rate Loans and (ii) from the Reimbursement Date until the date of repayment in full, at the rate of interest applicable during such period to past due Loans that are Base Rate Loans, and such Issuer shall promptly notify the Administrative Agent, which shall promptly notify each Lender of such failure, and each Lender shall promptly and unconditionally pay to the Administrative Agent for the account of such Issuer the amount of such Lender's Ratable Portion of such payment (or the Dollar Equivalent thereof if such payment was made in any currency other than Dollars) in immediately available Dollars. If the Administrative Agent so notifies such Lender prior to 11:00 a.m. (New York time) on any Business Day, such Lender shall make available to the Administrative Agent for the account of such Issuer its Ratable Portion of the amount of such payment on such Business Day in immediately available funds. Upon such payment by a Lender, such Lender shall, except during the continuance of a Default or Event of Default under clause (g) or clause (h) of Article VII and notwithstanding whether or not the conditions precedent set forth in Section 4.02 shall have been satisfied (which conditions precedent the Lenders hereby irrevocably waive), be deemed to have made a Loan to the applicable Borrower in the principal amount of such payment. Whenever any Issuer receives from any Borrower a payment of a Reimbursement Obligation as to which the Administrative Agent has received for the account of such Issuer any payment from a Lender pursuant to this clause (h), such Issuer shall pay over to the Administrative Agent any amount received in excess of such Reimbursement Obligation and, upon receipt of such amount, the Administrative Agent shall promptly pay over to each Lender, in immediately available funds, an amount equal to such Lender's Ratable Portion of the amount of such payment adjusted, if necessary, to reflect the respective amounts the Lenders have paid in respect of such Reimbursement Obligation.

(i) If and to the extent such Lender shall not have so made its Ratable Portion of the amount of the payment required by clause (h) above available to the Administrative Agent for the account of such Issuer, such Lender agrees to pay to the Administrative Agent for the account of such Issuer forthwith on demand any such unpaid amount together with interest thereon, for the first Business Day after payment was first due at the Federal Funds Rate and, thereafter, until such amount is repaid to the Administrative Agent for the account of such Issuer, at a rate per annum equal to the rate applicable to Base Rate Loans under the Facility.

(j) Each Borrower's obligation to pay each Reimbursement Obligation and the obligations of the Lenders to make payments to the Administrative Agent for the account of the Issuers with respect to Letters of Credit shall be absolute, unconditional and irrevocable and shall be performed strictly in accordance with the terms of this Agreement, under any and all circumstances whatsoever, including the occurrence of any Default or Event of Default, and irrespective of any of the following:

(i) any lack of validity or enforceability of any Letter of Credit or any Loan Document, or any term or provision therein;

(ii) any amendment or waiver of or any consent to departure from all or any of the provisions of any Letter of Credit or any Loan Document;

(iii) the existence of any claim, set-off, defense or other right that Howmet, any other Borrower, any other party guaranteeing, or otherwise obligated with, any Borrower, any Subsidiary or other Affiliate thereof or any other person may at any time have against the beneficiary under any Letter of Credit, any Issuer, the Administrative Agent or any Lender or any other person, whether in connection with this Agreement, any other Loan Document or any other related or unrelated agreement or transaction;

(iv) any draft or other document presented under a Letter of Credit proving to be forged, fraudulent, invalid or insufficient in any respect or any statement therein being untrue or inaccurate in any respect;

(v) payment by the Issuer under a Letter of Credit against presentation of a draft or other document that does not comply with the terms of such Letter of Credit; and

(vi) any other act or omission to act or delay of any kind of the Issuer, the Lenders, the Administrative Agent or any other person or any other event or circumstance whatsoever, whether or not similar to any of the foregoing, that might, but for the provisions of this Section 2.22, constitute a legal or equitable discharge of Howmet's or any other Borrower's obligations hereunder.

Any action taken or omitted to be taken by the relevant Issuer under or in connection with any Letter of Credit, if taken or omitted in the absence of gross negligence or willful misconduct, shall not result in any liability of such Issuer to the Borrowers or any Lender. In determining whether drafts and other documents presented under a Letter of Credit comply with the terms thereof, the Issuer may accept documents that appear on their face to be in order, without responsibility for further investigation, regardless of any notice or information to the contrary and, in making any payment under any Letter of Credit, the Issuer may rely exclusively on the documents presented to it under such Letter of Credit as to any and all matters set forth therein, including reliance on the amount of any draft presented under such Letter of Credit, whether or not the amount due to the beneficiary thereunder equals the amount of such draft and whether or not any document presented pursuant to such Letter of Credit proves to be insufficient in any respect, if such document on its face appears to be in order, and whether or not any other statement or any other document presented pursuant to such Letter of Credit proves to be forged or invalid or any statement therein proves to be inaccurate or untrue in any respect whatsoever, and any noncompliance in any immaterial respect of the documents presented under such Letter of Credit with the terms thereof shall, in each case, be deemed not to constitute willful misconduct or gross negligence of the Issuer.

SECTION 2.23. Defaulting Lender.

(a) Reallocation of Defaulting Lender Commitment. If a Lender becomes, and during the period it remains, a Defaulting Lender, the following provisions shall apply with respect to any outstanding Obligations:

(i) the Ratable Portion of such Defaulting Lender with respect to any Letter of Credit Obligations will, subject to the limitation in the first proviso below, automatically be reallocated (effective on the date such Lender becomes a Defaulting Lender) among the Lenders that are Non-Defaulting Lenders pro rata in accordance with their respective Commitments; provided, that (A) the sum of each Non-Defaulting Lender's Ratable Portion of the Revolving Credit Outstandings may not in any event exceed the Commitment of such Non-Defaulting Lender as in effect at the time of such reallocation and (B) neither such reallocation nor any payment by a Non-Defaulting Lender pursuant thereto will constitute a waiver or release of any claim each Borrower, the Administrative Agent, the Issuer or any other Lender may have against such Defaulting Lender or cause such Defaulting Lender to be a Non-Defaulting Lender;

(ii) to the extent that any portion (the “unreallocated portion”) of the Ratable Portion of such Defaulting Lender with respect to any Letter of Credit Obligations cannot be so reallocated, whether by reason of the first proviso in clause (i) above or otherwise, the applicable Borrower will, not later than 10 Business Days after demand by the Administrative Agent (at the direction of the Issuer), (A) deposit in a cash collateral account maintained with the Administrative Agent an amount at least equal to the aggregate amount of the unreallocated portion of such Letter of Credit Obligations or (B) make other arrangements satisfactory to the Administrative Agent, and to the Issuer, as the case may be, in their sole discretion to protect them against the risk of non-payment by such Defaulting Lender; and

(iii) any amount paid by any Borrower or otherwise received by the Administrative Agent for the account of a Defaulting Lender under this Agreement (whether on account of principal, interest, fees, indemnity payments or other amounts) will not be paid or distributed to such Defaulting Lender, but will instead be retained by the Administrative Agent in a segregated, non-interest bearing account until (subject to Section 2.10) the termination of the Commitments and payment in full of all Obligations of each Borrower hereunder and will be applied by the Administrative Agent, to the fullest extent permitted by law, to the making of payments from time to time in the following order of priority: *first* to the payment of any amounts owing by such Defaulting Lender to the Administrative Agent under this Agreement, *second* to the payment of any amounts owing by such Defaulting Lender to the Issuer under this Agreement, *third* to the payment of post-default interest and then current interest due and payable to the Lenders hereunder other than Defaulting Lenders, ratably among them in accordance with the amounts of such interest then due and payable to them, *fourth* to the payment of fees then due and payable to the Non-Defaulting Lenders hereunder, ratably among them in accordance with the amounts of such fees then due and payable to them, *fifth* to pay principal and Reimbursement Obligations then due and payable to the Non-Defaulting Lenders hereunder ratably in accordance with the amounts thereof then due and payable to them, *sixth* to the ratable payment of other amounts then due and payable to the Non-Defaulting Lenders, and *seventh* after the termination of the Commitments and payment in full of all Obligations of each Borrower hereunder, to pay amounts owing under this Agreement to such Defaulting Lender or as a court of competent jurisdiction may otherwise direct.

(b) Cash Collateral Call. If any Lender becomes, and during the period it remains, a Defaulting Lender, if any Letter of Credit is at the time outstanding, the Issuer may (except, in the case of a Defaulting Lender, to the extent the Commitments have been fully reallocated pursuant to Section 2.23(a)), by notice to Howmet and each other Borrower and such Defaulting Lender through the Administrative Agent, require any Borrower (i) to deposit in a cash collateral account maintained by the Administrative Agent an amount at least equal to 105% of the aggregate amount of the unreallocated obligations (contingent or otherwise) of such Defaulting Lender to be applied pro rata in respect thereof, or (ii) to make other arrangements satisfactory to the Administrative Agent, and to the Issuer, as the case may be, in their sole discretion to protect them against the risk of non-payment by such Defaulting Lender.

(c) Right to Give Drawdown Notices. In furtherance of the foregoing, if any Lender becomes, and during the period it remains, a Defaulting Lender, the Issuer is hereby authorized by any Borrower (which authorization is irrevocable and coupled with an interest) to give, in its discretion, through the Administrative Agent, notices of Borrowing pursuant to Section 2.03 in such amounts and at the rate of interest applicable during such period to Loans that are Base Rate Loans and in such times as may be required to (i) pay matured Reimbursement Obligations and/or (ii) deposit in a cash collateral account maintained by the Administrative Agent the obligations of such Borrower in respect of

outstanding Letters of Credit in an amount at least equal to the aggregate amount of the obligations (contingent or otherwise) of such Defaulting Lender in respect of such Letter of Credit.

(d) Termination of Defaulting Lender Commitments. Howmet may terminate the unused amount of the Commitment of a Defaulting Lender upon not less than 10 Business Days' prior notice to the Administrative Agent (which will promptly notify the Lenders thereof); provided, that such termination will not be deemed to be a waiver or release of any claim any Borrower, the Administrative Agent, the Issuer or any Lender may have against such Defaulting Lender.

(e) Cure. If any Borrower, the Administrative Agent and the Issuer agree in writing in their discretion that a Lender is no longer a Defaulting Lender, as the case may be, the Administrative Agent will so notify the parties hereto, whereupon as of the effective date specified in such notice and subject to any conditions set forth therein (which may include arrangements with respect to any amounts then held in the segregated account referred to in Section 2.23(a)), such Lender will, to the extent applicable, purchase at par such portion of outstanding Loans of the other Lenders and/or make such other adjustments as the Administrative Agent may determine to be necessary to cause such Lender's Ratable Portion to be on a pro rata basis in accordance with its Commitment, whereupon such Lender will cease to be a Defaulting Lender and will be a Non-Defaulting Lender; provided, that no adjustments will be made retroactively with respect to fees accrued or payments made by or on behalf of any Borrower while such Lender was a Defaulting Lender; and provided, further, that except to the extent otherwise expressly agreed by the affected parties, no change hereunder from Defaulting Lender to Non-Defaulting Lender will constitute a waiver or release of any claim of any party hereunder arising from such Lender having been a Defaulting Lender.

SECTION 2.24. Benchmark Replacement Setting.

(a) Benchmark Replacement. Notwithstanding anything to the contrary herein or in any other Loan Document, upon the occurrence of a Benchmark Transition Event with respect to any Benchmark, the Administrative Agent and the Borrowers may amend this Agreement to replace such Benchmark with a Benchmark Replacement. Any such amendment with respect to a Benchmark Transition Event will become effective at 5:00 p.m. (New York City time) on the fifth (5th) Business Day after the Administrative Agent has posted such proposed amendment to all affected Lenders and the Borrowers so long as the Administrative Agent has not received, by such time, written notice of objection to such amendment from Lenders comprising the Required Lenders. No replacement of a Benchmark with a Benchmark Replacement pursuant to this Section 2.24(a) will occur prior to the applicable Benchmark Transition Start Date.

(b) Benchmark Replacement Conforming Changes. In connection with the use, administration, adoption or implementation of a Benchmark Replacement, the Administrative Agent will have the right to make Conforming Changes from time to time and, notwithstanding anything to the contrary herein or in any other Loan Document, any amendments implementing such Conforming Changes will become effective without any further action or consent of any other party to this Agreement or any other Loan Document.

(c) Notices; Standards for Decisions and Determinations. The Administrative Agent will promptly notify the Borrowers and the Lenders of (i) the implementation of any Benchmark Replacement and (ii) the effectiveness of any Conforming Changes in connection with the use, administration, adoption or implementation of a Benchmark Replacement. The Administrative Agent will notify the Borrowers of (x) the removal or reinstatement of any tenor of a Benchmark pursuant to Section 2.24(d) and (y) the commencement of any Benchmark Unavailability Period. Any notice required to be delivered by the Administrative Agent as set forth in this Section 2.24 may be provided, at the option of

the Administrative Agent (in its sole discretion), in one or more notices and may be delivered together with, or as part of any amendment which implements any Benchmark Replacement or Conforming Changes. Any determination, decision or election that may be made by the Administrative Agent or, if applicable, any Lender (or group of Lenders) pursuant to this Section 2.24, including any determination with respect to a tenor, rate or adjustment or of the occurrence or non-occurrence of an event, circumstance or date and any decision to take or refrain from taking any action or any selection, will be conclusive and binding absent manifest error and may be made in its or their sole discretion and without consent from any other party to this Agreement or any other Loan Document, except, in each case, as expressly required pursuant to this Section 2.24.

(d) Unavailability of Tenor of Benchmark. Notwithstanding anything to the contrary herein or in any other Loan Document, at any time (including in connection with the implementation of a Benchmark Replacement), (i) if any then-current Benchmark is a term rate (including the Term SOFR Reference Rate or EURIBOR) and either (A) any tenor for such Benchmark is not displayed on a screen or other information service that publishes such rate from time to time as selected by the Administrative Agent in its reasonable discretion or (B) the regulatory supervisor for the administrator of such Benchmark has provided a public statement or publication of information announcing that any tenor for such Benchmark is not or will not be representative, then the Administrative Agent may modify the definition of "Interest Period" (or any similar or analogous definition) for any Benchmark settings at or after such time to remove such unavailable or non-representative tenor and (ii) if a tenor that was removed pursuant to clause (i) above either (A) is subsequently displayed on a screen or information service for a Benchmark (including a Benchmark Replacement) or (B) is not, or is no longer, subject to an announcement that it is not or will not be representative for a Benchmark (including a Benchmark Replacement), then the Administrative Agent may modify the definition of "Interest Period" (or any similar or analogous definition) for all Benchmark settings at or after such time to reinstate such previously removed tenor.

(e) Benchmark Unavailability Period. Upon the Borrowers' receipt of notice of the commencement of a Benchmark Unavailability Period, the Borrowers may revoke any pending request for a SOFR Borrowing of, conversion to or continuation of SOFR Loans, or a EURIBOR Borrowing of, or continuation of EURIBOR Loans, in each case, to be made, converted or continued during any Benchmark Unavailability Period denominated in the applicable Currency and, failing that, (A) in the case of any request for any affected SOFR Loan, the Borrowers will be deemed to have converted any such request into a request for a Borrowing of or conversion to Base Rate Loans and (B) in the case of any request for any affected EURIBOR Loan, if applicable, then such request shall be ineffective and shall, at the Borrowers' election, (I) be converted into Base Rate Loans denominated in Dollars (in an amount that is then equal to the Dollar Equivalent of such EURIBOR Loans) at the end of the applicable Interest Period or (II) be prepaid in full at the end of the applicable Interest Period; provided that, with respect to any EURIBOR Loan, if no election is made by the Borrowers by the earlier of (x) that date this is three Business Days after receipt by the Borrowers of such notice and (y) the last day of the current Interest Period for the applicable EURIBOR Loan, the Borrowers shall be deemed to have elected clause (I) above. Upon any such prepayment or conversion, the Borrowers shall also pay accrued interest on the amount so prepaid or converted, together with any additional amounts required pursuant to Section 2.14. During a Benchmark Unavailability Period with respect to any Benchmark or at any time that a tenor for any then-current Benchmark is not an Available Tenor, the component of Base Rate based upon the then-current Benchmark that is the subject of such Benchmark Unavailability Period or such tenor for such Benchmark, as applicable, will not be used in any determination of Base Rate. During such Benchmark Unavailability Period, any outstanding SOFR Loans or EURIBOR Loans, as applicable, shall be deemed to have been converted into Base Rate Loans (in the case of such EURIBOR Loans, in an amount that is then equal to the Dollar Equivalent of such EURIBOR Loans) at the end of the applicable Interest Period.

(f) **Disclaimer.** The Administrative Agent does not warrant or accept responsibility for, and shall not have any liability with respect to (a) the continuation of, administration of, submission of, calculation of or any other matter related to Base Rate, the Term SOFR Reference Rate, Adjusted Term SOFR, Term SOFR or EURIBOR, or any component definition thereof or rates referred to in the definition thereof, or any alternative, successor or replacement rate thereto (including any Benchmark Replacement), including whether the composition or characteristics of any such alternative, successor or replacement rate (including any Benchmark Replacement) will be similar to, or produce the same value or economic equivalence of, or have the same volume or liquidity as, Base Rate, the Term SOFR Reference Rate, Adjusted Term SOFR, Term SOFR, EURIBOR or any other Benchmark prior to its discontinuance or unavailability, or (b) the effect, implementation or composition of any Conforming Changes. The Administrative Agent and its affiliates or other related entities may engage in transactions that affect the calculation of Base Rate, the Term SOFR Reference Rate, Term SOFR, Adjusted Term SOFR, EURIBOR, any alternative, successor or replacement rate (including any Benchmark Replacement) or any relevant adjustments thereto, in each case, in a manner adverse to the Borrowers. The Administrative Agent may select information sources or services in its reasonable discretion to ascertain Base Rate, the Term SOFR Reference Rate, Term SOFR, Adjusted Term SOFR, EURIBOR or any other Benchmark, in each case pursuant to the terms of this Agreement, and shall have no liability to the Borrowers, any Lender or any other person or entity for damages of any kind, including direct or indirect, special, punitive, incidental or consequential damages, costs, losses or expenses (whether in tort, contract or otherwise and whether at law or in equity), for any error or calculation of any such rate (or component thereof) provided by any such information source or service.

ARTICLE III

REPRESENTATIONS AND WARRANTIES

Each Borrower represents and warrants to each of the Lenders, the Issuers and the Administrative Agent with respect to itself as follows (except that the Borrowing Subsidiaries make no representations or warranties under Section 3.06 or 3.09):

SECTION 3.01. **Organization.** Such Borrower is duly organized, validly existing and, where applicable, in good standing under the laws of its jurisdiction of organization and is duly qualified to do business as a foreign corporation (or other entity, as applicable) and, where applicable, is in good standing in all other jurisdictions in which the ownership of its properties or the nature of its activities or both makes such qualification necessary, except to the extent that failure to be so qualified would not result in a Material Adverse Effect.

SECTION 3.02. **Authorization.** Such Borrower has power and authority, corporate or otherwise, to execute, deliver and carry out the provisions of this Agreement and each other Loan Document to which it is a party, or to become a party to this Agreement in accordance with the terms hereof and the terms of each other Loan Document, to borrow hereunder and to perform its obligations hereunder, under each other Loan Document to which it is a party, and all such action has been duly and validly authorized by all necessary proceedings, corporate or otherwise, on its part.

SECTION 3.03. **Enforceability.** This Agreement and each other Loan Document to which such Borrower is a party has been duly executed and delivered by such Borrower and constitutes the legal, valid and binding obligation of such Borrower enforceable in accordance with its terms, except as limited by bankruptcy, insolvency or other similar laws of general application affecting the enforcement of creditors' rights or by general principles of equity limiting the availability of equitable remedies.

SECTION 3.04. Governmental Approvals. No authorization, consent, approval, license, exemption or other action by, and no registration, qualification, designation, declaration or filing with, any Governmental Authority (other than filings under the Securities Exchange Act of 1934, as amended, and the rules and regulations of the SEC promulgated thereunder) is necessary in connection with such Borrower's execution and delivery of this Agreement and each other Loan Document to which such Borrower is a party, the consummation by any Borrower of the transactions contemplated hereby or thereby or such Borrower's performance of or compliance with the terms and conditions hereof or thereof.

SECTION 3.05. No Conflict. None of the execution and delivery by such Borrower of this Agreement and each other Loan Document to which such Borrower is a party, the consummation by such Borrower of the transactions contemplated hereby and thereby or performance by such Borrower of or compliance by such Borrower with the terms and conditions hereof or thereof will (a) violate any law, constitution, statute, treaty, regulation, rule, ordinance, order, injunction, writ, decree or award of any Governmental Authority to which it is subject, (b) conflict with or result in a breach or default under its charter or Memorandum and Articles of Association or by-laws (or equivalent organizational or governing documents), as applicable, (c) conflict with or result in a breach or default which is material in the context of this Agreement under any agreement or instrument to which such Borrower is a party or by which it or any of its properties, whether now owned or hereafter acquired, may be subject or bound or (d) result in the creation or imposition of any Lien prohibited by Section 6.01 upon any property or assets, whether now owned or hereafter acquired, of such Borrower.

SECTION 3.06. Financial Statements. In the case of Howmet, it has furnished to the Lenders copies of its consolidated balance sheet as of December 31, 2020, and the related consolidated statements of income and shareholders' equity and cash flows for the three years ended December 31, 2020, all audited by PricewaterhouseCoopers LLP, and Howmet's unaudited consolidated balance sheets as at March 31, 2021 and June 30, 2021 and the related unaudited consolidated statements of income and shareholders' equity and cash flows for the three months then ended. Such financial statements (including the notes thereto) present fairly the financial condition of Howmet and its Subsidiaries as of such dates and the results of their operations and cash flows for the periods then ended (subject, in the case of said balance sheets as at March 31, 2021 and June 30, 2021, respectively, and said statements of income, shareholders equity and cash flows for the three months then ended, to the absence of footnote disclosure and normal year-end audit adjustments), all in conformity with GAAP.

SECTION 3.07. No Defaults. No event has occurred and is continuing and no condition exists which constitutes a Default or Event of Default hereunder. Such Borrower is not in violation of (i) any term of its charter or constitution or by-laws (or the equivalent organizational or governing documents), as applicable, or (ii) any agreement or instrument to which it is a party or by which it or any of its properties may be subject or bound where such violation is likely to result in a Material Adverse Effect.

SECTION 3.08. Litigation. Except as set forth in the financial statements referred to in Section 3.06 or the Exchange Act Reports or otherwise disclosed on Schedule 3.08, there is no pending or, to the knowledge of any of its Responsible Officers, threatened proceeding by or before any Governmental Authority against Howmet or any or its Subsidiaries, which in the opinion of Howmet's counsel is likely to result in a Material Adverse Effect.

SECTION 3.09. No Material Adverse Change. Since December 31, 2020, there has been no material adverse change in the business, assets, operations or financial condition of itself and its Subsidiaries, taken as a whole, except, in the case of Howmet and the Borrowing Subsidiaries, as disclosed in the Exchange Act Reports on or prior to the Closing Date.

SECTION 3.10. Employee Benefit Plans.

(a) U.S. Plans. Each Plan is in compliance with all requirements of ERISA and the regulations and published interpretations thereunder except to the extent such non-compliance could not reasonably be expected to result in a Material Adverse Effect. No Reportable Event has occurred as to which any Borrower or any ERISA Affiliate was required to file a report with the PBGC that alone or together with any other Reportable Event would reasonably be expected to result in a liability of such Borrower to the PBGC in an aggregate amount in excess of \$50,000,000. Neither such Borrower nor any ERISA Affiliate has incurred any Withdrawal Liability that would reasonably be expected to result in a Material Adverse Effect. Neither such Borrower nor any ERISA Affiliate has received any notification that any Multiemployer Plan is in reorganization or has been terminated within the meaning of Title IV of ERISA, and no Responsible Officer of any Borrower has knowledge of any fact which would reasonably be expected to result in the reorganization or termination of a Multiemployer Plan where such reorganization or termination has resulted or would reasonably be expected to result, through increases in the contributions required to be made to such Plan or otherwise, in a Material Adverse Effect.

(b) Foreign Plans. Each Foreign Plan is in compliance with all requirements of law applicable thereto and the respective requirements of the governing documents for such plan except to the extent such non-compliance could not reasonably be expected to result in a Material Adverse Effect. With respect to each Foreign Pension Plan, none of the Borrowers, their respective Affiliates or any of their directors, officers, employees or agents has engaged in a transaction which would subject any of the Borrowers, directly or indirectly, to a tax or civil penalty which could reasonably be expected to result in a Material Adverse Effect. With respect to each Foreign Plan, adequate reserves have been established in the financial statements furnished to Lenders in respect of any unfunded liabilities in accordance with applicable law and prudent business practice or, where required, in accordance with ordinary accounting practices in the jurisdiction in which such Foreign Plan is maintained. The aggregate unfunded liabilities, after giving effect to any such reserves for such liabilities, with respect to such Foreign Plans could not reasonably be expected to result in a Material Adverse Effect. There are no actions, suits or claims (other than routine claims for benefits) pending or threatened in writing against any of the Borrowers or any of their Affiliates with respect to any Foreign Plan which could reasonably be expected, individually or in the aggregate, to result in a Material Adverse Effect.

SECTION 3.11. Title to Properties; Possession Under Leases. (a) Such Borrower and each of its Subsidiaries have good and marketable title to, or valid leasehold interests in, all its material properties and assets, except for minor defects in title that do not materially interfere with its ability to conduct its business as currently conducted or to utilize such properties and assets for their intended purposes.

(b) Such Borrower and each of its Subsidiaries have complied with all material obligations under all material leases to which it is a party and all such leases are in full force and effect. Such Borrower and its Subsidiaries enjoy peaceful and undisturbed possession under all such material leases.

SECTION 3.12. Investment Company Act. None of Howmet or any Borrowing Subsidiary is an "investment company" as defined in, or is required to be registered as an "investment company" under, the Investment Company Act of 1940.

SECTION 3.13. Tax Returns. Such Borrower and its Subsidiaries have filed or caused to be filed all material Federal, state, local and foreign tax returns required to have been filed by it in all jurisdictions in which such tax returns are required to be filed and all such tax returns are true, complete and correct in all material respects. Each Borrower and its Subsidiaries has paid or caused to be paid all material taxes shown to be due and payable on such returns or on any assessments received by it, except taxes that are being contested in good faith by appropriate proceedings and for which adequate reserves are maintained on the applicable financial statements in accordance with GAAP.

SECTION 3.14. Compliance with Laws and Agreements. (a) Neither such Borrower nor any of its Subsidiaries is in violation of any law, rule or regulation, or in default with respect to any judgment, writ, injunction or decree of any Governmental Authority, where such violation or default would reasonably be expected to result in a Material Adverse Effect.

(b) Neither such Borrower nor any of its Subsidiaries is in default in any material manner under any provision of any indenture or other agreement or instrument evidencing Indebtedness, or any other material agreement or instrument to which it is a party or by which it or any of its properties or assets are or may be bound, where such default would be reasonably likely to result in a Material Adverse Effect.

SECTION 3.15. No Material Misstatements. Except for information not prepared by or on behalf of Howmet and expressly disclaimed thereby, no information, report, financial statement, exhibit or schedule furnished by or on behalf of such Borrower to the Administrative Agent or any Lender in connection with the negotiation of this Agreement or included herein or delivered pursuant thereto contained or contains any material misstatement of fact or omitted or omits to state any material fact necessary to make the statements therein, in the light of the circumstances under which they were or are made, not misleading.

SECTION 3.16. Use of Proceeds; Federal Reserve Regulations. The proceeds of any Loan and any Letter of Credit will be used (a) to refinance indebtedness (if any) under the Existing Credit Agreement and (b) to provide working capital or for other general corporate purposes. No part of the proceeds of any Loan to such Borrower will be used, whether directly or indirectly, and whether immediately, incidentally or ultimately, for any purpose that entails a violation of any of Regulations U and X.

SECTION 3.17. No Trusts. Such Borrower is not entering into this Agreement in its capacity as trustee of any trust.

SECTION 3.18. FCPA. No part of the proceeds of the Loans or any Letter of Credit will be used, directly or, to the knowledge of the Borrower, indirectly, for any payments to any governmental official or employee, political party, official of a political party, candidate for political office, or anyone else acting in an official capacity, in order to obtain, retain or direct business or obtain any improper advantage, in violation of the United States Foreign Corrupt Practices Act of 1977, as amended.

SECTION 3.19. Sanctions. (a) Neither the Borrower nor any of its Subsidiaries, nor any of the directors or officers of the Borrower or any of its Subsidiaries, nor, to the Borrower's knowledge, any of the employees, agents or controlled affiliates of the Borrower or any of its Subsidiaries, is a person that is, or, in the case of the Borrower or its Subsidiaries, is majority-owned or controlled by one or more persons that are (A) the subject of any Sanctions (a "Sanctioned Person") or (B) located, organized or resident in a country or territory (including, without limitation, as of the date hereof, Crimea, Cuba, Iran,

North Korea and Syria) that is the subject of Sanctions that broadly restrict or prohibit dealings with that country or territory (a “Sanctioned Country”).

(b) No part of the proceeds of a Loan or any Letter of Credit will be used by the Borrower or any of its Subsidiaries, directly or, to the knowledge of the Borrower, indirectly, (A) to fund or facilitate activities or business of or with any person or in any country or territory that, at the time of such funding or facilitation, is a Sanctioned Person or Sanctioned Country or (B) in any other manner, in each case as would result in a violation of Sanctions by any person.

ARTICLE IV

CONDITIONS OF EFFECTIVENESS, LENDING, LETTERS OF CREDIT AND DESIGNATION OF BORROWING SUBSIDIARIES

The obligations of the Lenders to make Loans to any Borrower hereunder and the obligation of each Issuer to Issue Letters of Credit hereunder are subject to the satisfaction of the conditions set forth in Sections 4.02 and 4.03 below (and, in the case of Loans to, or Letters of Credit for the account of, any Borrowing Subsidiary, the satisfaction, as to such Borrowing Subsidiary, of the conditions set forth in Section 4.04 below) and the occurrence of the Closing Date:

SECTION 4.01. Closing Date. On the Closing Date:

(a) The Administrative Agent shall have received a written opinion reasonably satisfactory to the Administrative Agent and the Lenders of (i) Cleary Gottlieb Steen & Hamilton LLP, as counsel to Howmet, (ii) K&L Gates LLP, as counsel to Howmet and (iii) Richards, Layton & Finger, P.A., as Delaware counsel to Howmet, in each case dated as of the Closing Date and addressed to the Administrative Agent and the Lenders.

(b) All legal matters incident to this Agreement and the borrowings hereunder shall be reasonably satisfactory to the Lenders and to counsel for the Administrative Agent.

(c) The Administrative Agent shall have received (i) this Agreement, duly executed and delivered by Howmet and each Lender, (ii) a copy, including all amendments thereto, of the charter of Howmet, certified as of a recent date by the Secretary of State or other appropriate official of its jurisdiction of incorporation and a certificate as to the good standing of Howmet as of a recent date, from such Secretary of State or other official; (iii) a certificate of the Secretary or Assistant Secretary of Howmet dated the Closing Date and certifying (A) that attached thereto is a true and complete copy of the by-laws of Howmet as in effect on the Closing Date showing all amendments thereto since the date of the resolutions described in clause (B) below, (B) that attached thereto is a true and complete copy of resolutions duly adopted by the Board of Directors of Howmet authorizing the execution, delivery and performance of this Agreement and the borrowings by Howmet hereunder, and that such resolutions have not been modified, rescinded or amended and are in full force and effect, (C) that the charter of Howmet has not been amended since the date of the last amendment thereto shown on the certificate of good standing furnished pursuant to clause (ii) above and (D) as to the incumbency and specimen signature of each officer executing this Agreement or any other document delivered in connection herewith on behalf of Howmet; (iv) a certificate of another officer of Howmet as to the incumbency and specimen signature of the Secretary or Assistant Secretary executing the certificate pursuant to clause (iii) above; and (v) such other documents as the Lenders or counsel for the Administrative Agent may reasonably request.

(d) The representations and warranties set forth in Article III hereof shall be true and correct in all material respects (except such representations and warranties that are qualified by materiality, which shall be correct in all respects) on and as of the Closing Date with the same effect as though made on and as of such date, except to the extent such representations and warranties expressly relate to an earlier date.

(e) The Administrative Agent shall have received certificates dated the Closing Date and signed by a Financial Officer of Howmet confirming the satisfaction of the condition precedent set forth in paragraph (d) of this Section 4.01 and that as of the Closing Date, no Event of Default or Default has occurred and is continuing.

(f) The Administrative Agent shall have received all fees, including Facility Fees (as defined in the Existing Credit Agreement) accrued throughout the Closing Date under the Existing Credit Agreement, and other amounts due and payable on or prior to the Closing Date.

(g) The Administrative Agent shall have received certificates of a Responsible Officer of Howmet, each dated the Closing Date and stating that (i) except as disclosed in the Exchange Act Reports or otherwise disclosed in such certificate, Howmet and each of its Subsidiaries have complied in all respects with all Federal, state, local and foreign statutes, ordinances, orders, judgments, rulings and regulations relating to environmental pollution or to environmental regulation or control except to the extent any such failure so to comply would not, alone or together with any other such failure, be reasonably likely to result in a Material Adverse Effect; (ii) neither Howmet nor any of its Subsidiaries has received notice of any failure so to comply which alone or together with any other such failure would be reasonably likely to result in a Material Adverse Effect; and (iii) the plants of Howmet and its Subsidiaries do not manage any hazardous wastes, toxic pollutants or substances similarly denominated in violation of any applicable law or regulations promulgated pursuant thereto including, for operations within the United States, the Resource Conservation and Recovery Act, the Comprehensive Environmental Response Compensation and Liability Act, the Hazardous Materials Transportation Act, the Toxic Substance Control Act, the Clean Air Act, the Clean Water Act or any other applicable law, where such violation would be reasonably likely to result, individually or together with any such other violations, in a Material Adverse Effect.

SECTION 4.02. All Borrowings and Issuances of Letters of Credit. On the date of each Borrowing and each Issuance of a Letter of Credit:

(a) Such Borrower shall have provided the notice as required by Section 2.03, and, with respect to any Letter of Credit, the Administrative Agent and the applicable Issuer shall have received a duly executed Letter of Credit Request.

(b) The representations and warranties set forth in Article III hereof (other than the representations and warranties set forth in Sections 3.08, 3.09 and 3.10) shall be true and correct in all material respects (except such representations and warranties that are qualified by materiality, which shall be correct in all respects) on and as of the date of such Borrowing with the same effect as though made on and as of such date, except to the extent such representations and warranties expressly relate to an earlier date.

(c) Each Borrower shall be in compliance in all material respects with all the terms and provisions set forth herein on its part to be observed or performed, and at the time of and immediately after such Borrowing no Event of Default or Default shall have occurred and be continuing.

(d) In the case of any Borrowing which would cause the aggregate principal amount of outstanding Loans under this Agreement, and any other “Facilities” (as defined in the resolutions duly adopted by the Board of Directors of Howmet on January 19, 2018) to exceed \$10,000,000,000, such Borrowing shall have been duly authorized by Howmet and the Administrative Agent shall have received a true and complete copy of resolutions duly adopted by the Board of Directors of Howmet authorizing such Borrowing.

(e) There shall have been paid to the Administrative Agent, for the account of the Lenders, all fees and expenses (including reasonable fees and expenses of counsel) due and payable on or before such Borrowing.

Each Borrowing by any Borrower, and each submission by any Borrower to an Issuer of a Letter of Credit Request, and the Issuance of each Letter of Credit requested therein, shall be deemed to constitute a representation and warranty by such Borrower and, in the case of a Borrowing Subsidiary, Howmet on the date of such Borrowing as to the matters specified in paragraphs (b), (c) and (d) of this Section 4.02. Notwithstanding any contrary provision hereof, a conversion of a Borrowing to a different Type or a continuation of a Borrowing in its existing Type shall not be considered a new Borrowing.

SECTION 4.03. Additional Conditions to Issuances. In addition to the other conditions precedent herein set forth, if any Lender becomes, and during the period it remains, a Defaulting Lender, the Issuer will not be required to Issue any Letter of Credit or to amend any outstanding Letter of Credit to increase the face amount thereof, alter the drawing terms thereunder or extend the expiry date thereof unless the Administrative Agent and the Issuer are satisfied that any exposure that would result therefrom is eliminated or fully covered by the Commitments of the Non-Defaulting Lenders or by a sufficient amount deposited in a cash collateral account maintained by the Administrative Agent or a combination thereof satisfactory to the Administrative Agent and the Issuer.

SECTION 4.04. Designation of Borrowing Subsidiaries. On each Designation Date:

(a) The Administrative Agent shall have received (i) a copy of the charter or equivalent organizational document including all amendments thereto, of each applicable Borrowing Subsidiary, certified as of a recent date by the Secretary of State or the appropriate foreign governmental official of the state or country of its organization, and a certificate as to the good standing, if available, of such Borrowing Subsidiary as of a recent date from such Secretary of State or appropriate foreign governmental official, or such other evidence of status reasonably satisfactory to the Administrative Agent under such Borrowing Subsidiary’s jurisdiction of organization, as applicable; (ii) a certificate of the Secretary or Assistant Secretary of such Borrowing Subsidiary dated the Designation Date and certifying (A) that attached thereto is a true and completed copy of the by-laws, or equivalent governing document, of such Borrowing Subsidiary as in effect on the Designation Date showing all amendments thereto since the date of the resolutions described in clause (B) below, (B) that attached thereto is a true and complete copy of resolutions duly adopted by the Board of Directors, or equivalent governing body or person, of such Borrowing Subsidiary authorizing the execution, delivery and performance of this Agreement and the borrowings hereunder, and that such resolutions have not been modified, rescinded or amended and are in full force and effect, (C) that the charter, or equivalent organizational document, of such Borrowing Subsidiary has not been amended since the date of the last amendment thereto shown on the certificate of good standing or other evidence of status furnished pursuant to clause (i) above, and (D) as to the incumbency and specimen signature of each officer executing or any other document delivered in connection herewith on behalf of such Borrowing Subsidiary; and (iii) a certificate of another officer as to the incumbency and specimen signature of the Secretary or Assistant Secretary executing the certificate pursuant to (ii) above.

(b) The Administrative Agent shall have received a Designation of Borrowing Subsidiary of each applicable Borrowing Subsidiary as provided in Section 10.04(f).

ARTICLE V

AFFIRMATIVE COVENANTS

So long as any Obligation or any Commitment remains outstanding, unless the Required Lenders shall otherwise consent in writing:

SECTION 5.01. Financial Statements, Reports, etc. Howmet shall furnish to the Administrative Agent the following, and the Administrative Agent shall make a copy thereof available to each Lender:

(a) Within 90 days after the end of each fiscal year its consolidated balance sheet and related statements of income and cash flow audited by independent public accountants of recognized national standing, accompanied by an opinion of such accountants (which shall not be qualified as to scope of audit or in any manner calling into question the status of its business as a going concern) to the effect that such consolidated financial statements fairly present its financial condition and results of operations and that of its consolidated Subsidiaries, taken as a whole, in accordance with GAAP;

(b) Within 50 days after the end of each of the first three fiscal quarters of each fiscal year, its Form 10-Q as prescribed by the SEC;

(c) No later than the respective delivery due dates of financial statements under (a) and (b) above, a certificate of a Financial Officer (i) certifying that no Event of Default or Default has occurred and is continuing or, if such an Event of Default or Default has occurred and is continuing, specifying the nature and extent thereof and any corrective action taken or proposed to be taken with respect thereto and (ii) setting forth computations in reasonable detail satisfactory to the Administrative Agent demonstrating compliance with the covenant contained in Section 6.03;

(d) Promptly after the same become publicly available, copies of all periodic and other reports, proxy statements and other materials filed by it (other than registration statements and prospectuses related to offerings to directors, officers or employees) with the SEC or any Governmental Authority succeeding to any of or all the functions of the SEC, or with any national securities exchange, or distributed to its shareholders, as the case may be; and

(e) Promptly, from time to time, such other information regarding its operations, business affairs and financial condition, or compliance with the terms of this Agreement, as the Administrative Agent or any Lender may reasonably request.

Information required to be delivered pursuant to this Section 5.01 shall be deemed to have been delivered if such information, or one or more annual or quarterly reports containing such information, shall have been posted by the Administrative Agent on an Approved Electronic Platform to which the Lenders have been granted access or shall be available on the website of the SEC at <http://www.sec.gov> (and a confirming electronic correspondence is delivered or caused to be delivered by Howmet to the Administrative Agent providing notice of such availability); provided that Howmet shall deliver paper copies of such information to the Administrative Agent for delivery to any Lender that requests such delivery. Information required to be delivered pursuant to this Section 5.01 (other than the information that pursuant to the immediately preceding sentence is deemed to have been delivered if it is

made available on the website of the SEC) shall be delivered by electronic communications pursuant to the procedures set forth in Section 9.03.

SECTION 5.02. Pari Passu Ranking. Each Borrower shall ensure that any amounts payable by it hereunder will at all times rank at least pari passu with all other unsecured, unsubordinated Indebtedness of such Borrower except to the extent any such Indebtedness may be preferred by law.

SECTION 5.03. Maintenance of Properties. Each Borrower shall, and shall cause its Subsidiaries to, maintain and keep its properties in such repair, working order and condition, and make or cause to be made all such needful and proper repairs, renewals and replacements thereto, as in the judgment of such Borrower are necessary and in the interests of such Borrower; provided, however, that nothing in this Section 5.03 shall prevent such Borrower (or any Subsidiary thereof) from selling, abandoning or otherwise disposing of any of its respective properties or discontinuing a part of its respective businesses from time to time if, (i) in the judgment of such Borrower, such sale, abandonment, disposition or discontinuance is advisable and (ii) in the case of a sale or other disposition, is a transaction permitted under Section 6.02.

SECTION 5.04. Obligations and Taxes. Each Borrower shall pay its Indebtedness and other obligations that, if not paid, would result in a Material Adverse Effect before the same shall become delinquent or in default, and pay and discharge all (i) material taxes upon or against it, or against its properties, and (ii) all claims which could reasonably be expected, if unpaid, to become a Lien upon its property (other than a Lien permitted under Section 6.01), in each case prior to the date on which penalties attach thereto, unless and to the extent that any such obligation or tax is being contested in good faith and adequate reserves with respect thereto are maintained on the applicable financial statements in accordance with GAAP.

SECTION 5.05. Insurance. Each Borrower shall, and shall cause its consolidated Subsidiaries to, insure and keep insured, in each case with reputable insurance companies, so much of its respective properties to such an extent and against such risks, or in lieu thereof, in the case of any Borrower, maintain or cause to be maintained a system or systems of self-insurance, as is customary in the case of corporations engaged in the same or similar business or having similar properties similarly situated.

SECTION 5.06. Existence; Businesses and Properties. (a) Each Borrower shall do or cause to be done all things necessary to preserve, renew and keep in full force and effect its legal existence in its jurisdiction of organization, except as otherwise expressly permitted under Section 6.02.

(b) Each Borrower shall do or cause to be done all things necessary to obtain, preserve, renew, extend and keep in full force and effect the rights, licenses, permits, franchises, authorizations, patents, copyrights, trademarks and trade names material to the conduct of its business as its Board of Directors shall determine in its judgment.

SECTION 5.07. Compliance with Laws. (a) Each Borrower shall comply in all material respects with all applicable laws, rules, regulations and orders of any Governmental Authority to which it is subject, whether now in effect or hereafter enacted, such that no failure so to comply will result in the levy of any penalty or fine which shall have a Material Adverse Effect.

(b) Each Borrower shall comply in all material respects with the applicable provisions of ERISA and all other related applicable laws and furnish to the Administrative Agent and each Lender (i) as soon as possible, and in any event within 30 days after any Responsible Officer of such Borrower or any ERISA Affiliate either knows or has reason to know that any ERISA Event has occurred

that alone or together with any other ERISA Event would reasonably be expected to result in liability of such Borrower to the PBGC in an aggregate amount exceeding \$50,000,000, a statement of a Financial Officer setting forth details as to such ERISA Event and the action proposed to be taken with respect thereto, together with a copy of the notice, if any, of such ERISA Event given to the PBGC or other Governmental Authority, (ii) promptly after receipt thereof, a copy of any notice such Borrower or any ERISA Affiliate may receive from the PBGC or other Governmental Authority relating to the intention of the PBGC or other Governmental Authority to terminate any Plan or Plans (other than a Plan maintained by an ERISA Affiliate which is considered an ERISA Affiliate only pursuant to subsection (m) or (o) of Section 414 of the Code), or any Foreign Plan or Foreign Plans, or to appoint a trustee to administer any Plan or Plans, or any Foreign Plan or Foreign Plans, (iii) within 10 days after the due date for filing with the PBGC pursuant to Section 412(n) of the Code of a notice of failure to make a required installment or other payment with respect to a Plan, a statement of a Financial Officer setting forth details as to such failure and the action proposed to be taken with respect thereto, together with a copy of such notice given to the PBGC and (iv) promptly and in any event within 30 days after receipt thereof by such Borrower or any ERISA Affiliate from the sponsor of a Multiemployer Plan, a copy of each notice received by such Borrower or ERISA Affiliate concerning (A) the imposition of Withdrawal Liability in excess of \$50,000,000 or (B) a determination that a Multiemployer Plan is, or is expected to be, terminated or in reorganization, in each case within the meaning of Title IV of ERISA, if such termination or reorganization would reasonably be expected to result, alone or with any other such termination or reorganization, in increases in excess of \$50,000,000 in the contributions required to be made to the relevant Plan or Plans.

SECTION 5.08. Default Notices. Each Borrower shall furnish to the Administrative Agent prompt written notice upon its becoming aware of any Event of Default or Default, specifying the nature and extent thereof and the corrective action (if any) proposed to be taken with respect thereto.

SECTION 5.09. Borrowing Subsidiaries. Howmet shall cause each Borrowing Subsidiary at all times to be a wholly-owned Subsidiary.

ARTICLE VI

NEGATIVE COVENANTS

Each Borrower covenants and agrees with each Lender that, so long as any Obligation or any Commitment remains outstanding, unless the Required Lenders shall otherwise consent in writing, such Borrower will not:

SECTION 6.01. Liens. (a) Create or incur, or permit any Restricted Subsidiary to create or incur, any Lien on its property or assets (including stock or other securities of any person, including any of its Subsidiaries) now or hereafter acquired by it or on any income or revenues or rights in respect thereof, securing Indebtedness for borrowed money, without ratably securing the Loans; provided, however, that the foregoing shall not apply to the following:

- (i) Liens on property or assets of any corporation existing at the time such corporation becomes a Restricted Subsidiary;
- (ii) Liens existing on any property or asset at or prior to the acquisition thereof by such Borrower or a Restricted Subsidiary, Liens on any property or asset securing the payment of all or any part of the purchase price of such property or asset, Liens on any property or asset securing any Indebtedness incurred prior to, at the time of or within 180 days after the acquisition of such property or asset for the purpose of financing all or any part of the purchase price thereof

or Liens on any property or asset securing any Indebtedness incurred for the purpose of financing all or any part of the cost to such Borrower or Restricted Subsidiary of improvements thereto;

(iii) Liens securing Indebtedness of a Restricted Subsidiary owing to Howmet or to another Restricted Subsidiary;

(iv) Liens existing on the Closing Date, and set forth on Schedule 6.01(a);

(v) Liens on property of a person existing at the time such person is merged into or consolidated with Howmet or a Restricted Subsidiary or at the time such person becomes a Subsidiary of Howmet through the direct or indirect acquisition of capital stock of such person by Howmet or at the time of a sale, lease or other disposition of the properties of a person as an entirety or substantially as an entirety to Howmet or a Restricted Subsidiary;

(vi) Liens on any property owned by Howmet or any Restricted Subsidiary, in favor of the United States of America or any state thereof, or any department, agency or instrumentality or political subdivision of the United States of America or any State thereof, or in favor of any other country, or any political subdivision thereof, to secure partial, progress, advance or other payments pursuant to any contract or statute or to secure any Indebtedness incurred for the purpose of financing all or any part of the purchase price or the cost of construction of the property subject to such Liens;

(vii) Liens for taxes or other governmental charges not at the time delinquent or thereafter payable without penalty or being contested in good faith by appropriate proceedings and for which adequate reserves are maintained by the applicable financial statements in accordance with GAAP; and

(viii) any extension, renewal or replacement (or successive extensions, renewals or replacements) in whole or in part of the Liens referred to in clauses (i) through (vi) of this Section 6.01(a); provided, however, that each such extension, renewal or replacement is limited to all or a part of the property which secured the Lien so extended, renewed or replaced (and any improvements thereon).

(b) Notwithstanding paragraph (a) of this Section 6.01 and in addition to the Liens permitted thereunder, each Borrower and any Restricted Subsidiary may create or incur Liens which would otherwise be subject to the foregoing restrictions to secure Indebtedness for borrowed money in an aggregate outstanding amount which does not at the time exceed (x) during the Covenant Relief Period, \$100,000,000 or (y) at any time other than during the Covenant Relief Period, 10% of the Consolidated Net Tangible Assets of Howmet and its consolidated Subsidiaries at such time.

SECTION 6.02. Consolidation, Merger, Sale of Assets, etc. Consolidate or merge with or into any other person or sell, lease or transfer all or substantially all of its property and assets, or agree to do any of the foregoing, unless (a) no Default or Event of Default has occurred and is continuing or would result immediately after giving effect thereto, (b) if such Borrower is not the surviving corporation or if such Borrower sells, leases or transfers all or substantially all of its property and assets, Howmet or the surviving corporation or the person purchasing or being leased the assets agrees to be bound by the terms and provisions applicable to such Borrower hereunder, and (c)(i) in the case of Howmet, immediately after such transaction, individuals who were directors of Howmet during the twelve month period prior to such merger, sale or lease (together with any replacement or additional directors whose election was recommended by or who were elected by a majority of directors then in office) constitute the Board of Directors of the surviving corporation or the person purchasing or being

leased the assets and (ii) in the case of a Borrowing Subsidiary, (A) the surviving corporation or the person purchasing or being leased the assets is Howmet or a wholly-owned Subsidiary of Howmet and (B) if the surviving corporation or such person is not Howmet, Howmet agrees to guarantee pursuant to Article VIII the obligations of such person under this Agreement.

SECTION 6.03. Consolidated Net Leverage Ratio. Howmet shall not permit the ratio of Consolidated Net Debt to Consolidated EBITDA as of the end of each fiscal quarter for the period of the four fiscal quarters of Howmet most recently ended, to be greater than 3.50 to 1.00; provided, however, that notwithstanding the foregoing, during the Covenant Relief Period, Howmet shall not permit the ratio of Consolidated Net Debt to Consolidated EBITDA as of the end of each fiscal quarter for the period of the four fiscal quarters then ended of Howmet set forth below, to exceed the applicable level set forth below opposite such period under the heading “Consolidated Net Debt to Consolidated EBITDA”:

Fiscal Quarter Ending	Consolidated Net Debt to Consolidated EBITDA
September 30, 2021	5.00 to 1.00
December 31, 2021	4.75 to 1.00
March 31, 2022	4.50 to 1.00
June 30, 2022	4.50 to 1.00
September 30, 2022	4.25 to 1.00
December 31, 2022	3.75 to 1.00

SECTION 6.04. Change in Business. In the case of Howmet, together with its consolidated Subsidiaries, cease to be primarily engaged in lightweight metals technology, engineering and manufacturing, and any other business activities reasonably incidental, complementary or related thereto.

SECTION 6.05. Restricted Payments. During the Covenant Relief Period, declare, order, pay, make, or permit any Subsidiary to declare, order, pay or make, any Restricted Payment; provided that, for so long as there are no Loans outstanding immediately prior to or after giving effect to such Restricted Payment, Howmet shall be permitted to declare, order, pay, make or permit any Subsidiary to declare, order, pay or make Restricted Payments (x) not exceeding \$450,000,000 during Howmet’s fiscal year ending December 31, 2021 and (y) not exceeding \$500,000,000 during Howmet’s fiscal year ending December 31, 2022; provided that any amount referred to in clause (x) that remains unused as of December 31, 2021 may be carried forward and used during Howmet’s fiscal year ending December 31, 2022.

SECTION 6.06. Subsidiary Indebtedness. During the Covenant Relief Period, permit any Subsidiary to directly or indirectly create, incur, assume or guaranty, or otherwise become or remain directly or indirectly liable with respect to any Indebtedness (other than any Indebtedness owing to Howmet or any other Subsidiary) except in an aggregate outstanding amount which does not at the time exceed \$400,000,000 (less, without duplication, any amounts secured by any Borrower or Restricted Subsidiary under Section 6.01(b)) but not including any such Indebtedness incurred pursuant to Section 6.07).

SECTION 6.07. Accounts Receivable and Securitization. During the Covenant Relief Period, enter, or permit any Subsidiary to enter, into any accounts receivable facility or similar financing facility or transaction (including any securitization or non-recourse accounts receivable financing but excluding, for the avoidance of doubt, any supply chain financing) providing for the factoring, sale or pledge of receivables or similar assets; provided, however, that the foregoing shall not apply to facilities or transactions for which the aggregate outstanding amount of (x) any Indebtedness attributable thereto and (y) to the extent not included as a liability on the consolidated balance sheet of Howmet and its Subsidiaries in accordance with GAAP, the amount of the financing component for such facility or transaction that would appear on a balance sheet of such Person prepared on such date in accordance with GAAP if such financing component were accounted for as Indebtedness incurred by such person, does not at the time exceed \$500,000,000. For purposes of determining compliance with this Section 6.07, the amount of any Indebtedness or obligation denominated in any currency other than Dollars shall be calculated based on customary currency exchange rates in effect on the date on which such Indebtedness or obligation was incurred.

ARTICLE VII

EVENTS OF DEFAULT

In case of the happening of any of the following events ("Events of Default"):

(a) any Borrower shall default in the payment when due of any principal of any Loan or any Reimbursement Obligation and, if such default shall result from the failure of any third party payments system used by such Borrower, such default shall continue for a period of two Business Days;

(b) any Borrower shall fail to pay when due any interest, fee or other amount payable under this Agreement or Howmet shall fail to pay any amount due under Article VIII upon demand therefor, and, in each case, such failure shall continue for a period of five Business Days;

(c) any representation or warranty made or deemed made by a Borrower under this Agreement or any statement made by a Borrower in any financial statement, certificate, report, exhibit or document furnished by or on behalf of such Borrower in connection with this Agreement shall prove to have been false or misleading in any material respect as of the time when made and, if such representation or warranty is able to be corrected, such representation or warranty is not corrected within 20 days after such Borrower's knowledge that it was false or misleading;

(d) any Borrower shall default in the performance or observance of any covenant contained in Section 5.02, Section 5.06(a), Section 5.08 or Article VI;

(e) any Borrower shall default in the performance or observance of any covenant or agreement under this Agreement (other than those specified in paragraphs (a), (b) and (d) above) and such default shall continue for a period of 30 days after notice from the Administrative Agent;

(f) any Borrower shall (i) (A) default in the payment of any principal or interest beyond any period of grace provided with respect thereto, due in respect of any Indebtedness in a principal amount in excess of \$100,000,000, or (B) fail to observe or perform any other term, covenant, condition or agreement contained in any agreement or instrument evidencing or governing any Indebtedness in a principal amount in excess of \$100,000,000, if the effect of any such default or failure referred to in this clause (i) is to cause such Indebtedness to become due prior to its stated maturity; or (ii)

default in the payment at maturity of any principal in respect of any Indebtedness in a principal amount in excess of \$100,000,000;

(g) a proceeding shall have been instituted or a petition filed in respect of a Borrower:

(i) seeking to have an order for relief entered in respect of such Borrower, or seeking a declaration or entailing a finding that such Borrower is insolvent or a similar declaration or finding, or seeking dissolution, winding-up, revocation or forfeiture of charter or Memorandum and Articles of Association, liquidation, reorganization, arrangement, adjustment, composition or other relief with respect to such Borrower, its assets or its debts under any law relating to bankruptcy, insolvency, relief of debtors or protection of creditors, termination of legal entities or any other similar law now or hereafter in effect, or

(ii) seeking appointment of a receiver, trustee, custodian, liquidator, assignee, sequestrator, administrator or other similar official for such Borrower or for all or any substantial part of its property,

and such proceeding or petition shall remain undismissed for a period of 90 consecutive days or an order or decree approving any of the foregoing shall be entered;

(h) any Borrower shall become insolvent, shall become generally unable to pay its debts as they become due, shall voluntarily suspend transaction of its business generally or as a whole, shall make a general assignment for the benefit of creditors, shall institute a proceeding described in clause (g)(i) above or shall consent to any order or decree described therein, shall institute a proceeding described in clause (g)(ii) above or shall consent to any such appointment or to the taking of possession by any such official of all or any substantial part of its property whether or not any such proceeding is instituted, shall dissolve, wind-up or liquidate itself or any substantial part of its property or shall take any action in furtherance of any of the foregoing;

(i) any of the following shall have occurred: (i) any person or group of persons shall have acquired beneficial ownership of a majority in interest of the outstanding Voting Stock of Howmet (within the meaning of Section 13(d) or 14(d) of the Securities Exchange Act of 1934 and the applicable rules and regulations thereunder), (ii) during any period of 25 consecutive months, commencing before or after the date of this Agreement, individuals who at the beginning of such 25 month period were directors of Howmet (together with any replacement or additional directors whose election was recommended by or who were elected by a majority of directors then in office) cease to constitute a majority of the Board of Directors of Howmet or (iii) any person or group of related persons shall acquire all or substantially all of the assets of Howmet provided, however, that a change in control of Howmet shall not be deemed to have occurred pursuant to clause (iii) of this paragraph (i) if Howmet shall have merged or consolidated with or transferred all or substantially all of its assets to another person in compliance with the provisions of Section 6.02 and the ratio represented by the total assets of the surviving person, successor or transferee divided by such person's stockholders' equity, in each case as determined and as would be shown in a consolidated balance sheet of such person prepared in accordance with GAAP (the "Leverage Ratio" of such person) is no greater than the then Leverage Ratio of Howmet immediately prior to such event;

(j) an ERISA Event or ERISA Events shall have occurred with respect to any Plan or Plans, or any Foreign Plan or Foreign Plans, that reasonably could be expected to result in liability of any Borrower to the PBGC or other Governmental Authority or to a Plan or Foreign Plan in an aggregate amount exceeding \$100,000,000 and, within 30 days after the reporting of any such ERISA Event to the

Administrative Agent or after the receipt by the Administrative Agent of the statement required pursuant to Section 5.07(b), the Administrative Agent shall have notified Howmet in writing that (i) the Required Lenders have made a determination that, on the basis of such ERISA Event or ERISA Events or the failure to make a required payment, there are reasonable grounds (A) for the termination of such Plan or Plans, or such Foreign Plan or Foreign Plans, by the PBGC or other Governmental Authority, (B) for the appointment either by the appropriate United States District Court of a trustee to administer such Plan or Plans or by an applicable court of law outside the United States of a trustee to administer such Foreign Plan or Foreign Plans or (C) for the imposition of a lien in favor of a Plan or Foreign Plan and (ii) as a result thereof an Event of Default exists hereunder; or a trustee shall be appointed by a United States District Court to administer any such Plan or Plans or by an applicable court of law outside the United States of a trustee to administer such Foreign Plan or Foreign Plans; or the PBGC or other Governmental Authority shall institute proceedings to terminate any Plan or Plans or any Foreign Plan or Foreign Plans;

(k) (i) any Borrower or any ERISA Affiliate shall have been notified by the sponsor of a Multiemployer Plan that it has incurred Withdrawal Liability to such Multiemployer Plan, (ii) such Borrower or such ERISA Affiliate does not have reasonable grounds for contesting such Withdrawal Liability or is not in fact contesting such Withdrawal Liability in a timely and appropriate manner and does not have adequate reserves set aside against such Withdrawal Liability and (iii) the amount of the Withdrawal Liability specified in such notice, when aggregated with all other amounts required to be paid to Multiemployer Plans in connection with Withdrawal Liabilities (determined as of the date or dates of such notification), exceeds \$100,000,000 or requires payments exceeding \$50,000,000 in any calendar year;

(l) any Borrower or any ERISA Affiliate shall have been notified by the sponsor of a Multiemployer Plan that such Multiemployer Plan is in reorganization or is being terminated, within the meaning of Title IV of ERISA, if solely as a result of such reorganization or termination the aggregate annual contributions of such Borrower and its ERISA Affiliates to all Multiemployer Plans that are then in reorganization or have been or are being terminated have been or will be increased over the amounts required to be contributed to such Multiemployer Plans for their most recently completed plan years by an amount exceeding \$100,000,000;

(m) one or more judgments for the payment of money in an aggregate amount in excess of \$100,000,000 shall be rendered against any Borrower or any Subsidiary of any Borrower or any combination thereof and the same shall remain undischarged for a period of 45 consecutive days during which execution shall not be effectively stayed (unless an appeal or writ of certiorari is being diligently prosecuted), or any action shall be legally taken by a judgment creditor or creditors holding judgments which in the aggregate exceed \$100,000,000 to levy upon assets or properties of any Borrower or any Subsidiary of a Borrower to enforce any such judgment; or

(n) Howmet's guarantee under Article VIII and/or a Borrowing Subsidiary's guarantee under its Subsidiary Guarantee (if any) shall for any reason fail or cease to be valid and binding on, or enforceable against, Howmet or such Borrowing Subsidiary, as applicable, or Howmet or any other Borrower shall so state in writing; or

(o) any provision of any Loan Document (other than Howmet's guarantee under Article VIII or a Borrowing Subsidiary's guarantee under any Subsidiary Guarantee (if any)) after delivery thereof shall for any reason fail or cease to be valid and binding on, or enforceable against, any Borrower party thereto, or Howmet or any other Borrower shall so state in writing, but only if such events or circumstances, individually or in the aggregate, result in a Material Adverse Effect; or

then, and in every such event (other than an event described in paragraph (g) or (h) above), and at any time thereafter during the continuance of such event, the Administrative Agent, at the request of the

Required Lenders, shall, by written notice to Howmet, take either or both of the following actions, at the same or different times: (i) terminate the Commitments, whereupon the obligation of each Lender to make any Loan and each Issuer to Issue any Letter of Credit shall immediately terminate, and (ii) declare the Loans then outstanding to be forthwith due and payable in whole or in part, whereupon the principal of the Loans so declared to be due and payable, together with accrued interest thereon and any unpaid accrued fees and all other liabilities accrued hereunder, shall become forthwith due and payable, without presentment, demand, protest or any other notice of any kind, all of which are hereby expressly waived by each Borrower, anything contained herein to the contrary notwithstanding; and in any event described in paragraph (g) or (h) above, (x) the Commitment of each Lender to make Loans and the commitments of each Lender and Issuer to Issue or participate in Letters of Credit shall each automatically be terminated and (y) the Loans, all such interest and all such amounts and Obligations shall automatically become and be due and payable, without presentment, demand, protest or any other notice of any kind, all of which are hereby expressly waived by each Borrower, anything contained herein to the contrary notwithstanding.

At any time and from time to time (i) upon and after the last Maturity Date to occur or (ii) as may be required by Section 2.11(b), Section 2.11(d) or Section 2.23(b), the Borrowers shall pay to the Administrative Agent in immediately available funds at the Administrative Agent's office referred to in Section 10.01, for deposit in a cash collateral account maintained with the Administrative Agent, the amount required so that, after such payment, the aggregate funds on deposit in such cash collateral accounts at any time equals or exceeds 105% of the Dollar Equivalent of all outstanding Letter of Credit Obligations. The Administrative Agent may, from time to time after funds are deposited in such cash collateral account, apply funds then held in such cash collateral account to the payment of any amounts as shall have become or shall become due and payable by any Borrowers to any Issuer or Lender in respect of the Letter of Credit Obligations. The Administrative Agent shall promptly give written notice of any such application to Howmet; provided, however, that the failure to give such written notice shall not invalidate any such application. The Administrative Agent shall return to Howmet all funds remaining in such cash collateral account promptly after the payment in full of all outstanding Letter of Credit Obligations.

ARTICLE VIII

GUARANTEE

In order to induce the Administrative Agent, the Lenders and the Issuers to execute and deliver this Agreement and to make and maintain the Loans and to Issue Letters of Credit:

(a) Howmet unconditionally and irrevocably guarantees, as a principal obligor and not merely as a surety, the due and punctual payment and performance of all Borrowing Subsidiaries Obligations. Howmet further agrees that the Borrowing Subsidiaries Obligations may be extended or renewed, in whole or in part, without notice or further assent from it, and that it will remain bound upon the provisions of this Article VIII notwithstanding any extension or renewal of any Borrowing Subsidiary Obligation.

(b) Howmet waives presentation to, demand of payment from and protest to any Borrowing Subsidiary of any of the Borrowing Subsidiaries Obligations, and also waives notice of acceptance of the guarantee set forth in this Article VIII and notice of protest for nonpayment. The obligations of Howmet hereunder shall not be affected by (i) the failure of the Administrative Agent or any Lender to assert any claim or demand or to enforce any right or remedy against any Borrower under the provisions of this Agreement or any guarantee; (ii) any extension or renewal of any provision of this Agreement or any guarantee; or (iii) any rescission, waiver, amendment or modification of any of the terms or provisions of this Agreement or any guarantee or any other agreement.

(c) Howmet further agrees that the guarantee set forth in this Article VIII constitutes a guarantee of payment when due and not of collection and waives any right to require that any resort be had by the Administrative Agent or any Lender to the balance of any deposit account or credit on the books of the Administrative Agent or the relevant Lender, as applicable, in favor of any Borrower or any other person.

(d) The obligations of Howmet hereunder shall not be subject to any reduction, limitation, impairment or termination for any reason, including any claim or waiver, release, surrender, alteration or compromise, and shall not be subject to any defense of setoff, counterclaim, recoupment or termination whatsoever by reason of the invalidity, illegality or unenforceability of the Borrowing Subsidiaries Obligations or otherwise. Without limiting the generality of the foregoing, the obligations of Howmet hereunder shall not be discharged or impaired or otherwise affected by the failure of the Administrative Agent or any Lender to assert any claim or demand or to enforce any remedy under this Agreement, by any waiver or modification of any thereof, by any default, failure or delay, willful or otherwise, in the performance of the Borrowing Subsidiaries Obligations or by any other act or omission which may or might in any manner or to any extent vary the risk of Howmet or would otherwise operate as a discharge of Howmet as a matter of law or equity (other than the defense of payment in satisfaction of such Obligation).

(e) Howmet further agrees that this guarantee shall continue to be effective or be reinstated, as the case may be, if at any time payment by any Borrowing Subsidiary to the Administrative Agent or any Lender, or any part thereof, of principal of or interest on such Borrowing Subsidiary Obligation is rescinded or must otherwise be restored by the Administrative Agent or any Lender or any holder of any Borrowing Subsidiaries Obligation upon the bankruptcy or reorganization of such Borrowing Subsidiary or otherwise.

(f) In furtherance of the foregoing and not in limitation of any other right which the Administrative Agent or any Lender may have at law or in equity against Howmet by virtue hereof, upon the failure of any Borrowing Subsidiary to pay any Borrowing Subsidiaries Obligation when and as the same shall become due, whether at maturity, by acceleration, after notice of prepayment or otherwise, Howmet hereby promises to and will, upon receipt of written demand by the Administrative Agent, promptly pay, or cause to be paid, to such Agent in cash the amount of such unpaid Borrowing Subsidiaries Obligation, and thereupon such Agent shall assign, in any reasonable manner, the amount of the Borrowing Subsidiaries Obligation paid by Howmet pursuant to this guarantee to Howmet, such assignment to be pro tanto to the extent to which the Borrowing Subsidiaries Obligation in question was discharged by Howmet, or make such other disposition thereof as Howmet shall direct (all without recourse to the Administrative Agent or any Lender and without any representation or warranty by the Administrative Agent or Lender).

Upon payment by Howmet of any sums to the Administrative Agent as provided above, all rights of Howmet against the Borrowing Subsidiaries arising as a result thereof by way of right of subrogation or otherwise shall in all respects be subordinate and junior in right of payment to the prior indefeasible payment in full of all the Borrowing Subsidiaries Obligations.

ARTICLE IX

THE ADMINISTRATIVE AGENT

SECTION 9.01. Authorization and Action. (a) Each Lender and each Issuer hereby appoints Citi as the Administrative Agent hereunder and each Lender and each Issuer authorizes the Administrative Agent to take such action as agent on its behalf and to exercise such powers under this

Agreement and the other Loan Documents as are delegated to the Administrative Agent under such agreements and to exercise such powers as are reasonably incidental thereto. Without limiting the foregoing, each Lender and each Issuer hereby authorizes the Administrative Agent to execute and deliver, and to perform its obligations under, each of the Loan Documents to which the Administrative Agent is a party, to exercise all rights, powers and remedies that the Administrative Agent may have under such Loan Documents.

(b) As to any matters not expressly provided for by this Agreement and the other Loan Documents (including enforcement or collection), the Administrative Agent shall not be required to exercise any discretion or take any action, but shall be required to act or to refrain from acting (and shall be fully protected in so acting or refraining from acting) upon the instructions of the Required Lenders, and such instructions shall be binding upon all Lenders and each Issuer; provided, however, that the Administrative Agent shall not be required to take any action that (i) the Administrative Agent in good faith believes exposes it to personal liability unless the Administrative Agent receives an indemnification satisfactory to it from the Lenders and the Issuers with respect to such action or (ii) is contrary to this Agreement or applicable law including, without limitation, any action that may be in violation of the automatic stay under any requirement of law relating to bankruptcy, insolvency or reorganization or relief of debtors or that may effect a forfeiture, modification or termination of property of a Defaulting Lender in violation of any requirement of law relating to bankruptcy, insolvency or reorganization or relief of debtors. The Administrative Agent agrees to give to each Lender and each Issuer prompt notice of each notice given to it by any Borrower pursuant to the terms of this Agreement or the other Loan Documents.

(c) In performing its functions and duties hereunder and under the other Loan Documents, the Administrative Agent is acting solely on behalf of the Lenders and the Issuers except to the limited extent provided in Section 2.05(c) and Section 10.04(b), and its duties are entirely administrative in nature. The Administrative Agent does not assume and shall not be deemed to have assumed any obligation other than as expressly set forth herein and in the other Loan Documents or any other relationship as the agent, fiduciary or trustee of or for any Lender, Issuer or holder of any other Obligation. The Administrative Agent may perform any of its duties under any Loan Document by or through its agents or employees.

(d) In the event that Citi or any of its Affiliates is or becomes an indenture trustee under the Trust Indenture Act of 1939 (as amended, the "Trust Indenture Act") in respect of any securities issued or guaranteed by any Borrower, the parties hereto acknowledge and agree that any payment or property received in satisfaction of or in respect of any Obligation of such Borrower hereunder or under any other Loan Document by or on behalf of Citi in its capacity as such for the benefit of any Borrower under any Loan Document (other than Citi or an Affiliate of Citi) and which is applied in accordance with the Loan Documents is exempt from the requirements of Section 311 of the Trust Indenture Act pursuant to Section 311(b)(3) of the Trust Indenture Act.

(e) Neither the Syndication Agent, nor the Co-Documentation Agents nor any Arranger shall have obligations or duties whatsoever in such capacity under this Agreement or any other Loan Document and shall incur no liability hereunder or thereunder in such capacity.

SECTION 9.02. Administrative Agent's Reliance, Etc. None of the Administrative Agent, any of its Affiliates or any of their respective directors, officers, agents or employees shall be liable for any action taken or omitted to be taken by it, him, her or them under or in connection with this Agreement or the other Loan Documents, except to the extent such claim, damage, loss, liability or expense is found in a final, non-appealable judgment by a court of competent jurisdiction to have resulted primarily from the gross negligence or willful misconduct of such person. Without limiting the foregoing, the Administrative Agent (a) may treat the payee of any Note as its holder until such Note has been assigned in accordance with Section 10.04, (b) may rely on the Register to the extent set forth in

Section 2.05 and Section 10.04(b), (c) may consult with legal counsel (including counsel to the Borrowers), independent public accountants and other experts selected by it and shall not be liable for any action taken or omitted to be taken in good faith by it in accordance with the advice of such counsel, accountants or experts, (d) makes no warranty or representation to any Lender or Issuer and shall not be responsible to any Lender or Issuer for any statements, warranties or representations made by or on behalf of any Borrower in or in connection with this Agreement or any other Loan Document, (e) shall not have any duty to ascertain or to inquire either as to the performance or observance of any term, covenant or condition of this Agreement or any other Loan Document, as to the financial condition of any Borrower or as to the existence or possible existence of any Default or Event of Default and (f) shall incur no liability under or in respect of this Agreement or any other Loan Document by acting upon any notice, consent, certificate or other instrument or writing (which writing may be a telecopy or electronic mail) or any telephone message believed by it to be genuine and signed or sent by the proper party or parties.

SECTION 9.03. Posting of Communications. (a) Howmet and each other Borrower hereby agrees that it will provide to the Administrative Agent all information, documents and other materials that it is obligated, or otherwise chooses to, furnish to the Administrative Agent pursuant to any Loan Document or in connection with the transactions contemplated therein, including, without limitation, all notices, requests, financial statements, financial and other reports, certificates and other information materials, but excluding any such communication that (i) relates to a request for a new, or a conversion of an existing, Borrowing (including any election of an interest rate or Interest Period relating thereto) or Letter of Credit Request, (ii) relates to the payment of any principal or other amount due under this Agreement prior to the scheduled payment date therefor, (iii) relates to a termination or a reduction of Commitments pursuant to Section 2.10, 2.23(d) or 10.04(h), (iv) relates to the designation of a Borrowing Subsidiary pursuant to Section 10.04(f), (v) provides notice of any Default or Event of Default, (vi) is required to be delivered to satisfy any condition precedent under Article IV or (vii) in accordance with Section 5.01, including clauses (a), (b) and (d) of such Section, is deemed to have been delivered if it is made available on the website of the SEC (all such non-excluded communications being referred to herein collectively as “Communications”), by transmitting the Communications in an electronic/soft medium in a format acceptable to the Administrative Agent to oploanswebadmin@citi.com.

(b) Howmet and each other Borrower further agrees that the Administrative Agent may, but shall not be obligated to, make the Communications available to the Lenders and the Issuers by posting the Communications on DebtDomain or a substantially similar electronic platform chosen by the Administrative Agent to be its electronic transmission system (the “Approved Electronic Platform”).

(c) Although the Approved Electronic Platform and its primary web portal are secured with generally-applicable security procedures and policies implemented or modified by the Administrative Agent from time to time (including, as of March 4, 2020, a dual firewall and a User ID/Password Authorization System) and the Approved Electronic Platform is secured through a single-user-per-deal authorization method whereby each user may access the Approved Electronic Platform only on a deal-by-deal basis, each of the Lenders, each of the Issuers and each Borrower acknowledges and agrees that the distribution of material through an electronic medium is not necessarily secure and that there are confidentiality and other risks associated with such distribution. Each of the Lenders, each of the Issuers and each Borrower hereby approves distribution of the Communications through the Approved Electronic Platform and understands and assumes the risks of such distribution.

(d) THE APPROVED ELECTRONIC PLATFORM AND THE COMMUNICATIONS ARE PROVIDED “AS IS” AND “AS AVAILABLE”. THE APPLICABLE PARTIES (AS DEFINED BELOW) DO NOT WARRANT THE ACCURACY OR COMPLETENESS OF THE COMMUNICATIONS, OR THE ADEQUACY OF THE APPROVED ELECTRONIC PLATFORM AND EXPRESSLY DISCLAIM LIABILITY FOR ERRORS OR OMISSIONS IN THE

APPROVED ELECTRONIC PLATFORM AND THE COMMUNICATIONS. NO WARRANTY OF ANY KIND, EXPRESS, IMPLIED OR STATUTORY, INCLUDING, WITHOUT LIMITATION, ANY WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, NON-INFRINGEMENT OF THIRD PARTY RIGHTS OR FREEDOM FROM VIRUSES OR OTHER CODE DEFECTS, IS MADE BY THE APPLICABLE PARTIES IN CONNECTION WITH THE COMMUNICATIONS OR THE APPROVED ELECTRONIC PLATFORM. IN NO EVENT SHALL THE ADMINISTRATIVE AGENT, ANY ARRANGER, THE SYNDICATION AGENT, THE CO-DOCUMENTATION AGENTS OR ANY OF THEIR RESPECTIVE AFFILIATES OR ANY OF THEIR RESPECTIVE OFFICERS, DIRECTORS, EMPLOYEES, AGENTS, ADVISORS OR REPRESENTATIVES (COLLECTIVELY, "APPLICABLE PARTIES") HAVE ANY LIABILITY TO HOWMET, ANY OTHER BORROWER, ANY LENDER, ANY ISSUER OR ANY OTHER PERSON OR ENTITY FOR DAMAGES OF ANY KIND, INCLUDING, WITHOUT LIMITATION, DIRECT OR INDIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES, LOSSES OR EXPENSES (WHETHER IN TORT, CONTRACT OR OTHERWISE) ARISING OUT OF HOWMET'S OR ANY OTHER BORROWER'S OR THE ADMINISTRATIVE AGENT'S TRANSMISSION OF COMMUNICATIONS THROUGH THE INTERNET.

(e) The Administrative Agent agrees that the receipt of the Communications by the Administrative Agent at its Email address set forth above shall constitute effective delivery of the Communications to the Administrative Agent for purposes of the Loan Documents. Each Lender and each Issuer agrees that notice to it (as provided in the next sentence) specifying that the Communications have been posted to the Approved Electronic Platform shall constitute effective delivery of the Communications to such Lender for purposes of the Loan Documents. Each Lender and each Issuer agrees (i) to notify the Administrative Agent in writing (including by electronic communication) from time to time of such Lender's or Issuer's (as applicable) Email address to which the foregoing notice may be sent by electronic transmission and (ii) that the foregoing notice may be sent to such Email address.

(f) Each of the Lenders, each of the Issuers and each Borrower agrees that the Administrative Agent may, but (except as may be required by applicable law) shall not be obligated to, store the Communications on the Approved Electronic Platform in accordance with the Administrative Agent's generally applicable document retention procedures and policies.

(g) Nothing herein shall prejudice the right of the Administrative Agent, any Lender or any Issuer to give any notice or other communication pursuant to any Loan Document in any other manner specified in such Loan Document.

SECTION 9.04. The Administrative Agent Individually. With respect to its Ratable Portion, Citi shall have and may exercise the same rights and powers hereunder and is subject to the same obligations and liabilities as and to the extent set forth herein for any other Lender or Issuer. The terms "Issuers", "Lenders", "Required Lenders" and any similar terms shall, unless the context clearly otherwise indicates, include the Administrative Agent in its individual capacity as a Lender, Issuer or as one of the Required Lenders. Citi and its Affiliates may accept deposits from, lend money to, and generally engage in any kind of banking, trust or other business with, any Borrower as if Citi were not acting as the Administrative Agent.

SECTION 9.05. Indemnification. Each Lender agrees to indemnify the Administrative Agent and each of its Affiliates, and each of their respective directors, officers, employees, agents and advisors (to the extent not reimbursed by the Borrowers, but without affecting the Borrowers' reimbursement obligation), from and against such Lender's aggregate ratable share of any and all liabilities, obligations, losses, damages, penalties, actions, judgments, suits, costs, expenses and disbursements (including fees, expenses and disbursements of financial and legal advisors) of any kind or

nature whatsoever that may be imposed on, incurred by, or asserted against, the Administrative Agent or any of its Affiliates, directors, officers, employees, agents and advisors in any way relating to or arising out of this Agreement or the other Loan Documents or any action taken or omitted by the Administrative Agent under this Agreement or the other Loan Documents; provided, however, that no Lender shall be liable for any portion of such liabilities, obligations, losses, damages, penalties, actions, judgments, suits, costs, expenses or disbursements to the extent any of such liabilities, obligations, losses, damages, penalties, actions, judgments, suits, costs, expenses or disbursements is found in a final, non-appealable judgment by a court of competent jurisdiction to have resulted primarily from the gross negligence or willful misconduct of the Administrative Agent or such Affiliate. Without limiting the foregoing, each Lender agrees to reimburse the Administrative Agent promptly upon demand for its ratable share of any out-of-pocket expenses (including fees, expenses and disbursements of financial and legal advisors) incurred by the Administrative Agent in connection with the preparation, execution, delivery, administration, modification, amendment or enforcement (whether through negotiations, legal proceedings or otherwise) of, or legal advice in respect of its rights or responsibilities under, this Agreement or the other Loan Documents, to the extent that the Administrative Agent is not reimbursed for such expenses by the Borrowers.

SECTION 9.06. Successor Administrative Agent. (a) The Administrative Agent may resign at any time by giving 30 days' prior written notice thereof to the Lenders and Howmet, whether or not a Successor Administrative Agent has been appointed. Upon any such resignation, the Required Lenders shall have the right to appoint a successor Administrative Agent. If no successor Administrative Agent shall have been so appointed by the Required Lenders, and shall have accepted such appointment, within 30 days after the retiring Administrative Agent's giving of notice of resignation, then the retiring Administrative Agent may, on behalf of the Lenders, appoint a successor Administrative Agent, selected from among the Lenders. In either case, such appointment shall be subject to the prior written approval of Howmet (which approval may not be unreasonably withheld and shall not be required upon the occurrence and during the continuance of an Event of Default). Upon the acceptance of any appointment as Administrative Agent by a successor Administrative Agent, such successor Administrative Agent shall succeed to, and become vested with, all the rights, powers, privileges and duties of the retiring Administrative Agent. Upon the earlier of (x) the date that is 30 days after the giving by the existing Administrative Agent of a resignation notice pursuant to this Section 9.06 and (y) the acceptance of appointment as Administrative Agent by a successor Administrative Agent, the retiring Administrative Agent shall be discharged from its duties and obligations under this Agreement and the other Loan Documents. Prior to any retiring Administrative Agent's resignation hereunder as Administrative Agent, the retiring Administrative Agent shall take such action as may be reasonably necessary to assign to the successor Administrative Agent its rights as Administrative Agent under the Loan Documents. After such resignation, the retiring Administrative Agent shall continue to have the benefit of this Article IX as to any actions taken or omitted to be taken by it while it was Administrative Agent under this Agreement and the other Loan Documents.

(b) In addition to the foregoing, if a Lender becomes, and during the period it remains, a Defaulting Lender, the Issuer may, upon prior written notice to Howmet and the Administrative Agent, resign as Issuer effective at the close of business New York time on a date specified in such notice (which date may not be less than 30 days after the date of such notice); provided that such resignation by the Issuer will have no effect on the validity or enforceability of any Letter of Credit then outstanding or on the obligations of any Borrower or any Lender under this Agreement with respect to any such outstanding Letter of Credit or otherwise to the Issuer.

SECTION 9.07. Certain ERISA Matters. (a) Each Lender (x) represents and warrants, as of the date such person became a Lender party hereto, to, and (y) covenants, from the date such person became a Lender party hereto to the date such person ceases being a Lender party hereto, for the benefit of, the Administrative Agent and the Arrangers and their respective Affiliates, and not, for the avoidance of doubt, to or for the benefit of Howmet or any of its Subsidiaries, that at least one of the following is and will be true:

(i) such Lender is not using “plan assets” (within the meaning of 29 CFR § 2510.3-101, as modified by Section 3(42) of ERISA) of one or more Benefit Plans in connection with the Loans, the Letters of Credit, or the Commitments,

(ii) the transaction exemption set forth in one or more PTEs, such as PTE 84-14 (a class exemption for certain transactions determined by independent qualified professional asset managers), PTE 95-60 (a class exemption for certain transactions involving insurance company general accounts), PTE 90-1 (a class exemption for certain transactions involving insurance company pooled separate accounts), PTE 91-38 (a class exemption for certain transactions involving bank collective investment funds) or PTE 96-23 (a class exemption for certain transactions determined by in-house asset managers), is applicable with respect to such Lender’s entrance into, participation in, administration of and performance of the Loans, the Letters of Credit, the Commitments, and this Agreement,

(iii) (A) such Lender is an investment fund managed by a “Qualified Professional Asset Manager” (within the meaning of Part VI of PTE 84-14), (B) such Qualified Professional Asset Manager made the investment decision on behalf of such Lender to enter into, participate in, administer and perform the Loans, the Letters of Credit, the Commitments, and this Agreement, (C) the entrance into, participation in, administration of and performance of the Loans, the Letters of Credit, the Commitments, and this Agreement satisfies the requirements of sub-sections (b) through (g) of Part I of PTE 84-14 and (D) to the best knowledge of such Lender, the requirements of subsection (a) of Part I of PTE 84-14 are satisfied with respect to such Lender’s entrance into, participation in, administration of and performance of the Loans, the Letters of Credit, the Commitments, and this Agreement, or

(iv) such other representation, warranty and covenant as may be agreed in writing between the Administrative Agent, in its sole discretion, and such Lender.

(b) In addition, unless either (1) sub-clause (i) in the immediately preceding clause (a) is true with respect to a Lender or (2) a Lender has provided another representation, warranty and covenant in accordance with sub-clause (iv) in the immediately preceding clause (a), such Lender further (x) represents and warrants, as of the date such person became a Lender party hereto, to, and (y) covenants, from the date such person became a Lender party hereto to the date such person ceases being a Lender party hereto, for the benefit of, the Administrative Agent and the Arrangers and their respective Affiliates, and not, for the avoidance of doubt, to or for the benefit of Howmet or any of its Subsidiaries, that neither the Administrative Agent nor the Arrangers nor their respective Affiliates is a fiduciary with respect to the assets of such Lender involved in such Lender’s entrance into, participation in, administration of and performance of the Loans, the Letters of Credit, the Commitments and this Agreement (including in connection with the reservation or exercise of any rights by the Administrative Agent or the Arrangers under this Agreement, the Loan Documents or any documents related hereto or thereto).

SECTION 9.08. Erroneous Payments. (a) If the Administrative Agent (x) notifies a Lender, Issuer or any Person who has received funds on behalf of a Lender or Issuer (any such Lender,

Issuer or other recipient (and each of their respective successors and assigns), a “Payment Recipient”) that the Administrative Agent has determined in its sole discretion (whether or not after receipt of any notice under immediately succeeding clause (b)) that any funds (as set forth in such notice from the Administrative Agent) received by such Payment Recipient from the Administrative Agent or any of its Affiliates were erroneously or mistakenly transmitted to, or otherwise erroneously or mistakenly received by, such Payment Recipient (whether or not known to such Lender, Issuer or other Payment Recipient on its behalf) (any such funds, whether transmitted or received as a payment, prepayment or repayment of principal, interest, fees, distribution or otherwise, individually and collectively, an “Erroneous Payment”) and (y) demands in writing the return of such Erroneous Payment (or a portion thereof), such Erroneous Payment shall at all times remain the property of the Administrative Agent pending its return or repayment as contemplated below in this Section 9.08 and held in trust for the benefit of the Administrative Agent, and such Lender or Issuer shall (or, with respect to any Payment Recipient who received such funds on its behalf, shall cause such Payment Recipient to) promptly, but in no event later than two Business Days thereafter (or such later date as the Administrative Agent may, in its sole discretion, specify in writing), return to the Administrative Agent the amount of any such Erroneous Payment (or portion thereof) as to which such a demand was made, in same day funds (in the currency so received), together with interest thereon (except to the extent waived in writing by the Administrative Agent) in respect of each day from and including the date such Erroneous Payment (or portion thereof) was received by such Payment Recipient to the date such amount is repaid to the Administrative Agent in same day funds at the greater of the Federal Funds Rate and a rate determined by the Administrative Agent in accordance with banking industry rules on interbank compensation from time to time in effect. A notice of the Administrative Agent to any Payment Recipient under this clause (a) shall be conclusive, absent manifest error.

(b) Without limiting immediately preceding clause (a), each Lender, Issuer or any Person who has received funds on behalf of a Lender or Issuer (and each of their respective successors and assigns), agrees that if it receives a payment, prepayment or repayment (whether received as a payment, prepayment or repayment of principal, interest, fees, distribution or otherwise) from the Administrative Agent (or any of its Affiliates) (x) that is in a different amount than, or on a different date from, that specified in this Agreement or in a notice of payment, prepayment or repayment sent by the Administrative Agent (or any of its Affiliates) with respect to such payment, prepayment or repayment, (y) that was not preceded or accompanied by a notice of payment, prepayment or repayment sent by the Administrative Agent (or any of its Affiliates), or (z) that such Lender, Issuer or other such recipient, otherwise becomes aware was transmitted, or received, in error or by mistake (in whole or in part), then in each such case:

(i) it acknowledges and agrees that (A) in the case of immediately preceding clauses (x) or (y), an error and mistake shall be presumed to have been made (absent written confirmation from the Administrative Agent to the contrary) or (B) an error and mistake has been made (in the case of immediately preceding clause (z)), in each case, with respect to such payment, prepayment or repayment; and

(ii) such Lender or Issuer shall use commercially reasonable efforts to (and shall use commercially reasonable efforts to cause any other recipient that receives funds on its respective behalf to) promptly (and, in all events, within one Business Day of its knowledge of the occurrence of any of the circumstances described in immediately preceding clauses (x), (y) and (z)) notify the Administrative Agent of its receipt of such payment, prepayment or repayment, the details thereof (in reasonable detail) and that it is so notifying the Administrative Agent pursuant to this Section 9.08(b).

For the avoidance of doubt, the failure to deliver a notice to the Administrative Agent pursuant to this Section 9.08(b) shall not have any effect on a Payment Recipient's obligations pursuant to Section 9.08(a) or on whether or not an Erroneous Payment has been made.

(c) Each Lender or Issuer hereby authorizes the Administrative Agent to set off, net and apply any and all amounts at any time owing to such Lender or Issuer under any Loan Document, or otherwise payable or distributable by the Administrative Agent to such Lender or Issuer under any Loan Document with respect to any payment of principal, interest, fees or other amounts, against any amount that the Administrative Agent has demanded to be returned under immediately preceding clause (a).

(d) (i) In the event that an Erroneous Payment (or portion thereof) is not recovered by the Administrative Agent for any reason, after demand therefor in accordance with immediately preceding clause (a), from any Lender that has received such Erroneous Payment (or portion thereof) (and/or from any Payment Recipient who received such Erroneous Payment (or portion thereof) on its respective behalf) (such unrecovered amount, an "Erroneous Payment Return Deficiency"), upon the Administrative Agent's notice to such Lender at any time, then effective immediately (with the consideration therefor being acknowledged by the parties hereto), (A) such Lender shall be deemed to have assigned its Loans (but not its Commitments) in an amount equal to the Erroneous Payment Return Deficiency (or such lesser amount as the Administrative Agent may specify) (such assignment of the Loans (but not Commitments), the "Erroneous Payment Deficiency Assignment") (on a cashless basis and such amount calculated at par plus any accrued and unpaid interest (with the assignment fee to be waived by the Administrative Agent in such instance)), and is hereby (together with the Borrower) deemed to execute and deliver an Assignment and Assumption (or, to the extent applicable, an agreement incorporating an Assignment and Assumption by reference pursuant to an Approved Electronic Platform as to which the Administrative Agent and such parties are participants) with respect to such Erroneous Payment Deficiency Assignment, and such Lender shall deliver any Notes evidencing such Loans to the Borrower or the Administrative Agent (but the failure of such Person to deliver any such Notes shall not affect the effectiveness of the foregoing assignment), (B) the Administrative Agent as the assignee Lender shall be deemed to have acquired the Erroneous Payment Deficiency Assignment, (C) upon such deemed acquisition, the Administrative Agent as the assignee Lender shall become a Lender, as applicable, hereunder with respect to such Erroneous Payment Deficiency Assignment and the assigning Lender shall cease to be a Lender, as applicable, hereunder with respect to such Erroneous Payment Deficiency Assignment, excluding, for the avoidance of doubt, its obligations under the indemnification provisions of this Agreement and its applicable Commitments which shall survive as to such assigning Lender, (D) the Administrative Agent and the Borrower shall each be deemed to have waived any consents required under this Agreement to any such Erroneous Payment Deficiency Assignment, and (E) the Administrative Agent will reflect in the Register its ownership interest in the Loans subject to the Erroneous Payment Deficiency Assignment. For the avoidance of doubt, no Erroneous Payment Deficiency Assignment will reduce the Commitments of any Lender and such Commitments shall remain available in accordance with the terms of this Agreement.

(ii) Subject to Section 10.04 (but excluding, in all events, any assignment consent or approval requirements (whether from the Borrower or otherwise)), the Administrative Agent may, in its discretion, sell any Loans acquired pursuant to an Erroneous Payment Deficiency Assignment and upon receipt of the proceeds of such sale, the Erroneous Payment Return Deficiency owing by the applicable Lender shall be reduced by the net proceeds of the sale of such Loan (or portion thereof), and the Administrative Agent shall retain all other rights, remedies and claims against such Lender (and/or against any recipient that receives funds on its respective behalf). In addition, an Erroneous Payment Return Deficiency owing by the applicable Lender (x) shall be reduced by the proceeds of prepayments or repayments of principal and interest, or other distribution in respect of principal and interest, received by the Administrative Agent on or with respect to any such Loans acquired from such Lender pursuant to an Erroneous

Payment Deficiency Assignment (to the extent that any such Loans are then owned by the Administrative Agent) and (y) may, in the sole discretion of the Administrative Agent, be reduced by any amount specified by the Administrative Agent in writing to the applicable Lender from time to time.

(e) The parties hereto agree that (x) irrespective of whether the Administrative Agent may be equitably subrogated, in the event that an Erroneous Payment (or portion thereof) is not recovered from any Payment Recipient that has received such Erroneous Payment (or portion thereof) for any reason, the Administrative Agent shall be subrogated to all the rights and interests of such Payment Recipient (and, in the case of any Payment Recipient who has received funds on behalf of a Lender or Issuer, to the rights and interests of such Lender or Issuer, as the case may be) under the Loan Documents with respect to such amount (the "Erroneous Payment Subrogation Rights") (provided that the Loan Parties' Obligations under the Loan Documents in respect of the Erroneous Payment Subrogation Rights shall not be duplicative of such Obligations in respect of Loans that have been assigned to the Administrative Agent under an Erroneous Payment Deficiency Assignment) and (y) an Erroneous Payment shall not pay, prepay, repay, discharge or otherwise satisfy any Obligations owed by the Borrower or any Borrowing Subsidiary; provided that this Section 9.08 shall not be interpreted to increase (or accelerate the due date for), or have the effect of increasing (or accelerating the due date for), the Obligations of the Borrower relative to the amount (and/or timing for payment) of the Obligations that would have been payable had such Erroneous Payment not been made by the Administrative Agent; provided, further, that for the avoidance of doubt, immediately preceding clauses (x) and (y) shall not apply to the extent any such Erroneous Payment is, and solely with respect to the amount of such Erroneous Payment that is, comprised of funds received by the Administrative Agent from the Borrower for the purpose of making such Erroneous Payment.

(f) To the extent permitted by applicable law, no Payment Recipient shall assert any right or claim to an Erroneous Payment, and hereby waives, and is deemed to waive, any claim, counterclaim, defense or right of set-off or recoupment with respect to any demand, claim or counterclaim by the Administrative Agent for the return of any Erroneous Payment received, including, without limitation, any defense based on "discharge for value" or any similar doctrine.

(g) Each party's obligations, agreements and waivers under this Section 9.08 shall survive the resignation or replacement of the Administrative Agent, any transfer of rights or obligations by, or the replacement of, a Lender or Issuer, the termination of the Commitments and/or the repayment, satisfaction or discharge of all Obligations (or any portion thereof) under any Loan Document.

ARTICLE X

MISCELLANEOUS

SECTION 10.01. Notices. Except as provided in Section 9.03, notices and other communications provided for herein shall (unless deemed to have been delivered in accordance with Section 5.01) be in writing and shall be delivered by hand or overnight courier service, mailed by certified or registered mail or sent by telecopy or email as follows:

(a) if to Howmet or a Borrowing Subsidiary, to Howmet Aerospace Inc. at 201 Isabella Street, Pittsburgh, PA 15212-5872, Attention of Vice President & Treasurer (Telecopy No. 412-553-2758);

(b) if to the Administrative Agent, to Citibank, N.A. at One Penns Way, Building Ops II, Floor 2, New Castle, Delaware, 19720, Attention: Agency Operations, (Telecopy No: 646-274-5080; email: AgencyABTFSupport@citi.com with a copy to GLAgentOfficeOps@citi.com) and with a copy to Sumeet Singal (email: sumeet.singal@citi.com); and

(c) if to a Lender or an Issuer, to it at its address (or telecopy number) set forth in the applicable Administrative Questionnaire or in the Assignment and Assumption or, in the case of an Issuer, the applicable assignment document pursuant to which such Issuer shall have become a party hereto.

Any party may subsequently change its notice address by written notice to the other parties as herein provided. All notices and other communications given to any party hereto in accordance with the provisions of this Agreement shall be deemed to have been given on the date of receipt if delivered during normal business hours (and otherwise shall be deemed to have been given on the following date) and if delivered by hand or overnight courier service or sent by telecopy or on the date five Business Days after dispatch by certified or registered mail if mailed, in each case delivered, sent or mailed (properly addressed) to such party as provided in this Section 10.01 or in accordance with the latest unrevoked direction from such party to the Administrative Agent and each Borrower given in accordance with this Section 10.01.

Notices and other communications to the Lenders and Issuers hereunder may be delivered or furnished by electronic communications pursuant to procedures set forth in Section 9.03 or otherwise approved by the Administrative Agent; provided that the foregoing shall not apply to notices pursuant to Article II unless otherwise agreed by the Administrative Agent and the applicable Lender or Issuer; provided further that any Lender or any Issuer may, upon request, receive a hard copy delivery of any or all such notices. The Administrative Agent or Howmet may, in its discretion, agree to accept notices and other communications to it hereunder by electronic communications pursuant to procedures set forth in Section 9.03 or otherwise approved by it; provided that approval of such procedures may be limited to particular notices or communications.

Any notice hereunder shall be effective upon receipt. Any notice or other communication received on a day which is not a Business Day or after business hours in the place of receipt shall be deemed to be served on the next following Business Day in such place. Any notice given to Howmet shall be deemed to have been duly given to each other Borrower at the same time and in the same manner.

SECTION 10.02. Survival of Agreement. All covenants, agreements, representations and warranties made by any Borrower herein and in the certificates or other instruments prepared or delivered in connection with or pursuant to this Agreement shall be considered to have been relied upon by the Lenders and the Issuers and shall survive the making by the Lenders of the Loans and the Issuers' Issuance of Letters of Credit, regardless of any investigation made by the Lenders or the Issuers or on their behalf, and shall continue in full force and effect as long as any Obligation remains outstanding and unpaid and so long as the Commitments have not been terminated.

SECTION 10.03. Binding Effect. This Agreement shall become effective when it shall have been executed by Howmet and the Administrative Agent and when the Administrative Agent shall have received copies hereof which, when taken together, bear the signatures of each Lender and each Issuer, and thereafter shall be binding upon and inure to the benefit of the Borrowers, the Administrative Agent, each Lender and each Issuer and their respective successors and assigns, except that none of the Borrowers shall have the right to assign its rights hereunder or any interest herein without the prior consent of all the Lenders and each Issuer.

SECTION 10.04. Successors and Assigns; Additional Borrowing Subsidiaries and Subsidiary Guarantees. (a) The provisions of this Agreement shall be binding upon and inure to the benefit of the parties hereto and their respective successors and assigns permitted hereby, except that (i) the Borrowers may not assign or otherwise transfer any of their rights or obligations hereunder (except as provided in Section 10.04(f)) without the prior written consent of each Lender and each Issuer (and any attempted assignment or transfer by the Borrowers without such consent shall be null and void) and (ii) no Lender or Issuer may assign or otherwise transfer its rights or obligations hereunder except in accordance with this Section. Nothing in this Agreement, expressed or implied, shall be construed to confer upon any person (other than the parties hereto, their respective successors and assigns permitted hereby, Participants (to the extent provided in paragraph (c) of this Section) and, to the extent expressly contemplated hereby, the Related Parties and Indemnitees of each of the Administrative Agent, the Lenders and the Issuers) any legal or equitable right, remedy or claim under or by reason of this Agreement.

(b) (i) Subject to the conditions set forth in paragraph (b)(ii) below, any Lender may assign to one or more assignees (other than to any Borrower or any Borrower's Subsidiary or Affiliate or to any natural person (or a holding company, investment vehicle, or trust for, or owned and operated by or for the primary benefit of a natural person)) all or a portion of its rights and obligations under this Agreement (including all or a portion of its rights and obligations with respect to its Commitment, the Loans and the Letters of Credit) to (1) any other Lender or an Affiliate of such Lender or (2) with the prior written consent (such consent not to be unreasonably withheld or delayed) of:

(A) Howmet, provided that no consent of Howmet shall be required for an assignment to a Lender, an Affiliate of a Lender, an Approved Fund (as defined below) or, if an Event of Default under clause (a), (b), (g) or (h) of Article VII has occurred and is continuing, any other assignee; provided, further, that the consent of Howmet shall be deemed to have been received with respect to any such proposed assignment unless Howmet has notified the Administrative Agent in writing of its objection thereto within 10 Business Days of Howmet's receipt of written notice thereof; and

(B) the Administrative Agent and each Issuer.

(ii) Assignments shall be subject to the following conditions:

(A) except in the case of an assignment to a Lender or an Affiliate of a Lender or an assignment of the entire remaining amount of the assigning Lender's Commitment, the amount of the Commitment of the assigning Lender subject to each such assignment (determined as of the date the Assignment and Assumption with respect to such assignment is delivered to the Administrative Agent) shall not be less than \$5,000,000 or an integral multiple thereof, unless each of Howmet and the Administrative Agent otherwise consent, provided that no such consent of Howmet shall be required if an Event of Default under clause (a), (b), (g) or (h) of Article VII has occurred and is continuing);

(B) each partial assignment shall be made as an assignment of a proportionate part of all the assigning Lender's rights and obligations under this Agreement;

(C) the parties to each assignment shall execute and deliver to the Administrative Agent an Assignment and Assumption, together with a processing and recordation fee of \$3,500; provided, that the Administrative Agent may, in its sole discretion, elect to waive such fee in the case of any assignment;

(D) the assignee, if it shall not be a Lender, shall deliver to the Administrative Agent an Administrative Questionnaire; and

(E) in the case of an assignment to a CLO (as defined below), the assigning Lender shall retain the sole right to approve any amendment, modification or waiver of any provision of this Agreement; provided that the Assignment and Assumption between such Lender and such CLO may provide that such Lender will not, without the consent of such CLO, agree to any amendment, modification or waiver described in the proviso to Section 10.08(b) that affects such CLO.

For purposes of this Section 10.04(b), the terms “Approved Fund” and “CLO” have the following meanings:

“Approved Fund” shall mean (a) a CLO and (b) with respect to any Lender that is a fund which invests in bank loans and similar extensions of credit, any other fund that invests in bank loans and similar extensions of credit and is managed by the same investment advisor as such Lender or by an Affiliate of such investment advisor.

“CLO” shall mean any entity (whether a corporation, partnership, trust or otherwise) that is engaged in making, purchasing, holding or otherwise investing in bank loans and similar extensions of credit in the ordinary course of its business and is administered or managed by a Lender or an Affiliate of such Lender.

(iii) Subject to acceptance and recording thereof pursuant to paragraph (b)(iv) of this Section, from and after the effective date specified in each Assignment and Assumption the assignee thereunder shall be a party hereto with respect to the interests assumed and, to the extent of the interest assigned under such Assignment and Assumption, have the rights and obligations of a Lender and if such Lender is an Issuer, as Issuer under this Agreement, and the assigning Lender thereunder shall, to the extent of the interest assigned by such Assignment and Assumption, be released from its obligations under this Agreement (and, in the case of an Assignment and Assumption covering all of the assigning Lender’s rights and obligations under this Agreement, such Lender shall cease to be a party hereto but shall continue to be entitled to the benefits of Sections 2.12, 2.14, 2.18 and 10.05).

(iv) The Administrative Agent shall maintain at its address referred to in Section 10.01 a copy of each Assignment and Assumption delivered to and accepted by it and shall record in the Register the names and addresses of the Lenders and Issuers and the principal amount of the Loans and Reimbursement Obligations owing to each Lender from time to time and the Commitments of each Lender. Any assignment pursuant to this Section 10.04 shall not be effective until such assignment is recorded in the Register.

(v) Upon its receipt of a duly completed Assignment and Assumption executed by an assigning Lender and an assignee, the assignee’s completed Administrative Questionnaire (unless the assignee shall already be a Lender hereunder), the processing and recordation fee referred to in paragraph (b) of this Section and any written consent to such assignment required by paragraph (b) of this Section, the Administrative Agent shall promptly (i) accept such Assignment and Assumption, (ii) record the information contained therein in the Register and (iii) give notice thereof to Howmet. No assignment shall be effective for purposes of this Agreement until it has been recorded in the Register as provided in this paragraph.

(vi) In connection with any assignment of rights and obligations of any Defaulting Lender hereunder, no such assignment shall be effective unless and until, in addition to the other conditions thereto set forth above, the parties to the assignment shall make such additional payments to the Administrative Agent in an aggregate amount sufficient, upon distribution thereof as appropriate (which may be outright payment, purchases by the assignee of participations or subparticipations, or other compensating actions, including funding, with the consent of Howmet and the Administrative Agent, the applicable pro rata share of the Loans previously requested but not funded by the Defaulting Lender, to each of which the applicable assignee and assignor hereby irrevocably consent), to (x) pay and satisfy in full all payment liabilities then owed by such Defaulting Lender to the Administrative Agent, the Issuer and each other Lender hereunder (and interest accrued thereon) and (y) acquire (and fund as appropriate) its full Ratable Portion of all Loans and participations in Letters of Credit. Notwithstanding the foregoing, in the event that any assignment of rights of any Defaulting Lender hereunder becomes effective under applicable law without compliance with the provisions of this clause (vi), then the assignee of such interest will be deemed to be a Defaulting Lender for all purposes of this Agreement until such compliance occurs.

(c) (i) Any Lender may, without the consent of any Borrower, the Administrative Agent or any Issuer, sell participations to one or more banks or other entities (a "Participant") in all or a portion of such Lender's rights and obligations under this Agreement (including all or a portion of its rights and obligations with respect to its Commitment, the Loans and Letters of Credit); provided that (A) such Lender's obligations under this Agreement shall remain unchanged, (B) such Lender shall remain solely responsible to the other parties hereto for the performance of such obligations and (C) the Borrowers, the Administrative Agent, the other Lenders and the Issuers shall continue to deal solely and directly with such Lender in connection with such Lender's rights and obligations under this Agreement. Any agreement or instrument pursuant to which a Lender sells such a participation shall provide that such Lender shall retain the sole right to enforce this Agreement and to approve any amendment, modification or waiver of any provision of this Agreement; provided that such agreement or instrument may provide that such Lender will not, without the consent of the Participant, agree to any amendment, modification or waiver described in the proviso to Section 10.08(b) that affects such Participant. Subject to paragraph (c)(ii) of this Section, Howmet agrees that each Participant shall be entitled to the benefits of Sections 2.12, 2.14 and 2.18 to the same extent as if it were a Lender and had acquired its interest by assignment pursuant to paragraph (b) of this Section. To the extent permitted by law, each Participant also shall be entitled to the benefits of Section 10.06 as though it were a Lender, provided such Participant agrees to be subject to Section 2.16 as though it were a Lender.

(ii) A Participant shall not be entitled to receive any greater payment under Section 2.12, 2.14 or 2.18 than the applicable Lender would have been entitled to receive with respect to the participation sold to such Participant, unless the sale of the participation to such Participant is made with Howmet's prior written consent or unless the right to a greater payment results from a change in law after the Participant becomes a Participant with respect to such participation.

(d) Any Lender may at any time pledge or assign a security interest in all or any portion of its rights under this Agreement to secure obligations of such Lender, including any pledge or assignment to secure obligations to a Federal Reserve Bank or other central banking authority, and the other provisions of this Section 10.04 shall not apply to any such pledge or assignment of a security interest; provided that no such pledge or assignment of a security interest shall release a Lender from any of its obligations hereunder or substitute any such pledgee or assignee for such Lender as a party hereto.

(e) Any Issuer may at any time assign its rights and obligations hereunder to any other Lender by an instrument in form and substance satisfactory to Howmet, the Administrative Agent, such Issuer and such Lender, subject to the provisions of Section 2.05(c) relating to notations of transfer in the Register. If any Issuer ceases to be a Lender hereunder by virtue of any assignment made pursuant to this Section, then, as of the effective date of such cessation, such Issuer's obligations to Issue Letters of Credit pursuant to Section 2.22 shall terminate and such Issuer shall be an Issuer hereunder only with respect to outstanding Letters of Credit issued prior to such date.

(f) Unless an Event of Default has occurred and is continuing, Howmet at any time and from time to time, upon not less than 15 Business Days' notice to the Administrative Agent, each Lender and each Issuer, may designate any wholly-owned Subsidiary to be a Borrowing Subsidiary upon the completion of the following: (i) each of Howmet and such Subsidiary shall have executed and delivered to the Administrative Agent a Designation of Borrowing Subsidiary and (ii) such Subsidiary shall have complied with Section 4.04, whereupon (A) such Subsidiary shall become a party hereto and shall have the rights and obligations of a Borrowing Subsidiary hereunder and (B) the obligations of such Subsidiary shall become part of the Borrowing Subsidiaries Obligations and the guarantee of Howmet pursuant to Article VIII hereof shall apply thereto to the same extent that it applies to the other Borrowing Subsidiaries Obligations, if any (the date on which any such designation shall occur being called a "Designation Date"). Following the giving of notice pursuant to the first sentence of this paragraph, if the designation of such Borrowing Subsidiary obligates the Administrative Agent or any Lender to comply with "know your customer" or anti-money laundering laws and regulations or similar identification procedures in circumstances where the necessary information is not already available to it, Howmet shall, promptly upon the request of the Administrative Agent or any Lender, supply such documentation or other evidence as is reasonably requested by the Administrative Agent or any Lender in order for the Administrative Agent or such Lender, as applicable, to comply with "know your customer", anti-money laundering and other applicable laws and regulations, including, without limitation, to extent applicable to any Borrowing Subsidiary that constitutes a "legal entity customer" under 31 C.F.R. §1010.230, a certification regarding beneficial ownership.

(g) If Howmet shall designate as a Borrowing Subsidiary hereunder any Subsidiary not organized under the laws of the United States or any State thereof, any Lender may, with notice to the Administrative Agent and Howmet, fulfill its Commitment by causing an Affiliate of such Lender to act as the Lender in respect of such Borrowing Subsidiary (and such Lender shall, to the extent of Loans made to such Subsidiary Borrower, be deemed for all purposes hereof to have *pro tanto* assigned such Loans to such Affiliate in compliance with the provisions of this Section 10.04). Upon receiving such notice, the Administrative Agent shall record the relevant information in the Register pursuant to Section 10.04(b)(v) and Section 2.05(b).

(h) As soon as practicable after receiving notice from Howmet or the Administrative Agent of Howmet's intent to designate a wholly-owned Subsidiary as a Borrowing Subsidiary, and in any event no later than five Business Days after the delivery of such notice, with respect to a Borrowing Subsidiary that is organized under the laws of a jurisdiction other than of the United States or a political subdivision thereof, any Lender or Issuer that may not legally lend to, establish credit for the account of and/or do any business whatsoever with such Borrowing Subsidiary, directly or through an Affiliate of such Lender as provided in clause (g) above (each such Lender, a "Protesting Lender"), shall so notify Howmet and the Administrative Agent in writing. With respect to each Protesting Lender, Howmet shall, effective on or before the date that such Borrowing Subsidiary shall have the right to borrow hereunder, either (i) notify the Administrative Agent and such Protesting Lender that the Commitments of such Protesting Lender and in the case of any Protesting Lender that is an Issuer, that the commitment of such Issuer to Issue Letters of Credit hereunder, shall be terminated; provided that such Protesting Lender shall have received payment of an amount equal to the outstanding principal of its Loans and/or

Reimbursement Obligations, accrued interest thereon, accrued fees and all other amounts payable to it hereunder, from the assignee (to the extent of such outstanding principal and accrued interest and fees) or Howmet or the relevant Borrowing Subsidiary (in the case of all other amounts), or (ii) cancel its request to designate such Subsidiary as a “Borrowing Subsidiary” hereunder.

SECTION 10.05. Expenses; Indemnity. (a) The Borrowers agree upon demand to pay, or reimburse the Administrative Agent, the Syndication Agent, the Co-Documentation Agents and each of the Arrangers for all of each such person’s reasonable and documented out-of-pocket costs and expenses of every type and nature (including the reasonable fees, expenses and disbursements of the Administrative Agent’s counsel, Weil, Gotshal & Manges LLP) and for documentary taxes and other charges incurred by each such person in connection with any of the following: (i) the Administrative Agent’s negotiation or execution of any Loan Document, (ii) the preparation, negotiation, execution or interpretation of this Agreement (including the satisfaction or attempted satisfaction of any condition set forth in Article IV), any Loan Document or any proposal letter or commitment letter issued in connection therewith, or the making of the Loans hereunder, (iii) the ongoing administration of this Agreement and the Loans, including consultation with attorneys in connection therewith and with respect to the Administrative Agent’s rights and responsibilities hereunder and under the other Loan Documents, (iv) the protection, collection or enforcement of any Obligation or the enforcement of any Loan Document, (v) the commencement, defense or intervention in any court proceeding relating in any way to the Obligations, this Agreement or any other Loan Document, (vi) the response to, and preparation for, any subpoena or request for document production with which the Administrative Agent is served or deposition or other proceeding in which the Administrative Agent is called to testify, in each case, relating in any way to the Obligations, this Agreement or any other Loan Document or (vii) any amendment, consent, waiver, assignment, restatement, or supplement to any Loan Document or the preparation, negotiation and execution of the same.

(b) The Borrowers further agree to pay or reimburse the Administrative Agent and each of the Lenders and Issuers upon demand for all out-of-pocket costs and expenses, including reasonable attorneys’ fees (which shall be limited to one primary counsel and one local counsel per each applicable jurisdiction), incurred by the Administrative Agent or such Lenders or Issuers in connection with any of the following: (i) in enforcing any Loan Document or Obligation or exercising or enforcing any other right or remedy available by reason of an Event of Default, (ii) in connection with any refinancing or restructuring of the credit arrangements provided hereunder in the nature of a “work-out” or in any insolvency or bankruptcy proceeding with respect to Howmet or any other Borrower, (iii) in commencing, defending or intervening in any litigation or in filing a petition, complaint, answer, motion or other pleadings in any legal proceeding relating to the Obligations, any of the Borrowers’ respective Subsidiaries and related to or arising out of the transactions contemplated hereby or by any other Loan Document or (iv) in taking any other action in or with respect to any suit or proceeding (bankruptcy or otherwise) described in clause (i), (ii) or (iii) above.

(c) The Borrowers agree to hold harmless the Administrative Agent, each Lender, each Issuer, the Syndication Agent, the Co-Documentation Agents, each Arranger and each of their respective affiliates and each of their respective officers, directors, employees, agents, advisors, attorneys and representatives (each, an “Indemnitee”) from and against any and all claims, damages, losses, liabilities and expenses (including, without limitation, reasonable fees and disbursements of counsel (which shall be limited to one primary counsel and one local counsel per each applicable jurisdiction for the Administrative Agent, the Syndication Agent, the Co-Documentation Agents, any Lender or any Issuer, unless, in the reasonable opinion of the Administrative Agent, representation of all such Indemnitees would be inappropriate due to an actual or potential conflict of interest, in which case there shall be permitted one additional counsel for such affected Indemnitees)), joint or several, that may be incurred by or asserted or awarded against any Indemnitee (including in connection with or relating to any investigation, litigation or proceeding or the preparation of any defense in connection therewith), in each

case arising out of or in connection with or by reason of this Agreement, the other Loan Documents, or any actual or proposed use of the proceeds of the Facility, except to the extent such claim, damage, loss, liability or expense is found in a final, non-appealable judgment by a court of competent jurisdiction to have resulted from the gross negligence or willful misconduct of such Indemnitee or any of its officers, directors, employees or agents. In the case of an investigation, litigation or other proceeding to which the indemnity in this Section applies, such indemnity shall be effective, whether or not such investigation, litigation or proceeding is brought by Howmet, any other Borrower or any of their respective directors, security holders or creditors, an Indemnitee or any other person, or an Indemnitee is otherwise a party thereto and whether or not the transactions contemplated by this Agreement are consummated. No Indemnitee shall have any liability (whether in contract, tort or otherwise) to Howmet, any other Borrower or any of their respective security holders or creditors for or in connection with the transactions contemplated by this Agreement, except to the extent such liability is determined in a final, non-appealable judgment by a court of competent jurisdiction to have resulted from such Indemnitee's gross negligence or willful misconduct. In no event, however, shall any Indemnitee be liable on any theory of liability for any special, indirect, consequential or punitive damages (including, without limitation, any loss of profits, business or anticipated savings). Each Borrower hereby waives, releases and agrees (each for itself and on behalf of its Subsidiaries) not to sue upon any such claim for any special, indirect, consequential or punitive damages, whether or not accrued and whether or not known or suspected to exist in its favor.

(d) The provisions of this Section 10.05 and any other indemnification or other protection provided to any Indemnitee pursuant to this Agreement shall (i) remain operative and in full force and effect regardless of the expiration of the term of this Agreement, the consummation of the transactions contemplated hereby, the repayment in full of the Obligations, the invalidity or unenforceability of any term or provision of this Agreement, or any investigation made by or on behalf of the Administrative Agent or Lender, and (ii) inure to the benefit of any person that was at the time such claim arose an Indemnitee under this Agreement or any other Loan Document. The Administrative Agent, each Lender and each Issuer agrees to use commercially reasonable efforts to promptly notify Howmet of any claims for indemnification or other protection under this Section 10.05; provided, however, that any failure by such person to deliver any such notice shall not relieve Howmet or any other Borrower from its obligations under this Section 10.05. All amounts due under this Section 10.05 shall be payable on written demand therefor, but shall be subject to the requirements of reasonableness and documentation as set forth herein.

SECTION 10.06. Right of Setoff. If an Event of Default shall have occurred and be continuing, each Lender and each Issuer is hereby authorized at any time and from time to time, to the fullest extent permitted by law, to set off and apply any and all deposits (general or special, time or demand, provisional or final) at any time held and other indebtedness at any time owing by such Lender or such Issuer or its Affiliates to or for the credit or the account of any Borrower against any of and all the Obligations of such Borrower (or, in the case of Howmet, any of and all the Obligations of any Borrower) now or hereafter existing under this Agreement held by such Lender or such Issuer, irrespective of whether or not such Lender or such Issuer shall have made any demand under this Agreement or otherwise and although such obligations may be unmatured. The rights of each Lender and each Issuer under this Section are in addition to other rights and remedies (including other rights of setoff) which such Lender or such Issuer may have; provided, however, that in the event that any Defaulting Lender exercises any such right of setoff (i) all amounts so set off will be paid over immediately to the Administrative Agent for further application in accordance with the provisions of Section 2.23, and, pending such payment, will be segregated by such Defaulting Lender from its other funds and deemed held in trust for the benefit of the Administrative Agent, the Issuer and the Lenders and (ii) the Defaulting Lender will provide promptly to the Administrative Agent a statement describing in reasonable detail the Obligations owing to such Defaulting Lender as to which it exercised such rights of setoff. Each Lender agrees promptly to notify Howmet after any such set-off and application made by such Lender or its

Affiliates; provided, however, that the failure to give such notice shall not affect the validity of such set-off and application. The rights of each Lender under this Section 10.06 are in addition to the other rights and remedies (including other rights of set-off) that such Lender may have.

SECTION 10.07. Applicable Law. THIS AGREEMENT SHALL BE CONSTRUED IN ACCORDANCE WITH AND GOVERNED BY THE LAWS OF THE STATE OF NEW YORK WITHOUT REGARD TO ANY CONFLICT OF LAWS PRINCIPLES THEREOF THAT WOULD CALL FOR THE APPLICATION OF THE LAWS OF ANY OTHER JURISDICTION.

SECTION 10.08. Waivers; Amendment. (a) No failure or delay of the Administrative Agent, any Lender or any Issuer in exercising any power or right hereunder shall operate as a waiver thereof, nor shall any single or partial exercise of any such right or power, or any abandonment or discontinuance of steps to enforce such a right or power, preclude any other or further exercise thereof or the exercise of any other right or power. The rights and remedies of the Administrative Agent, the Lenders and the Issuers hereunder are cumulative and are not exclusive of any rights or remedies which they would otherwise have. No waiver of any provision of this Agreement or consent to any departure by any Borrower therefrom shall in any event be effective unless the same shall be permitted by paragraph (b) below, and then such waiver or consent shall be effective only in the specific instance and for the purpose for which given. No notice or demand on any Borrower in any case shall entitle such Borrower to any further notice or shall entitle such Borrower or any other Borrower to notice or demand in similar or other circumstances.

(b) Neither this Agreement nor any provision hereof may be waived, amended or modified except pursuant to an agreement or agreements in writing entered into by the Borrowers and the Required Lenders; provided, however, that no such agreement shall (i) decrease the principal amount of, or extend the maturity of any principal payment date or date for the payment of any interest on any Loan or date fixed for payment of any Facility Fee, or waive or excuse any such payment or any part thereof, or decrease the rate of interest on any Loan, without the prior written consent of each Lender affected thereby, (ii) change or extend the Commitment or decrease the Facility Fee of any Lender without the prior written consent of such Lender, (iii) release any Borrower from its obligations to repay the principal amount of any Loan or Reimbursement Obligation owing to such Lender (other than by the payment or prepayment thereof) without the prior written consent of such Lender, (iv) amend or modify the provisions of Sections 2.15, 2.16, the provisions of Article VIII, the provisions of this Section or the definition of "Required Lenders", without the prior written consent of each Lender, (v) amend, modify or otherwise affect the rights or duties of the Administrative Agent hereunder without the prior written consent of the Administrative Agent or (vi) amend, modify or otherwise affect the rights or duties of an Issuer under Section 2.22 without the prior written consent of such Issuer. Each Lender, each Issuer and each assignee thereof shall be bound by any waiver, consent, amendment or modification authorized by this Section. Anything herein to the contrary notwithstanding, during such period as a Lender is a Defaulting Lender, to the fullest extent permitted by applicable law, such Lender will not be entitled to vote in respect of amendments and waivers hereunder and the Commitment and the outstanding Loans or other extensions of credit of such Lender hereunder will not be taken into account in determining whether the Required Lenders or all of the Lenders, as required, have approved any such amendment or waiver (and the definition of "Required Lenders" will automatically be deemed modified accordingly for the duration of such period); provided, that any such amendment or waiver that would increase or extend the term of the Commitment of such Defaulting Lender, extend the date fixed for the payment of principal or interest owing to such Defaulting Lender hereunder, reduce the principal amount of any obligation owing to such Defaulting Lender, reduce the amount of or the rate or amount of interest on any amount owing to such Defaulting Lender or of any fee payable to such Defaulting Lender hereunder, or alter the terms of this proviso, will require the consent of such Defaulting Lender.

SECTION 10.09. Interest Rate Limitation. Notwithstanding anything herein to the contrary, if at any time the applicable interest rate, together with all fees and charges which are treated as interest under applicable law (collectively the “Charges”), as provided for herein or in any other document executed in connection herewith, or otherwise contracted for, charged, received, taken or reserved by any Lender, shall exceed the maximum lawful rate (the “Maximum Rate”) which may be contracted for, charged, taken, received or reserved by such Lender in accordance with applicable law, the rate of interest payable to such Lender, together with all Charges payable to such Lender, shall be limited to the Maximum Rate.

SECTION 10.10. Entire Agreement. This Agreement and any fee arrangements related hereto constitute the entire contract between the parties relative to the subject matter hereof. Any previous agreement among the parties with respect to the subject matter hereof is superseded by this Agreement and the fee arrangements related hereto.

SECTION 10.11. Waiver of Jury Trial. Each party hereto hereby waives, to the fullest extent permitted by applicable law, any right it may have to a trial by jury in respect of any litigation directly or indirectly arising out of, under or in connection with this Agreement. Each party hereto (a) certifies that no representative, agent or attorney of any other party has represented, expressly or otherwise, that such other party would not, in the event of litigation, seek to enforce the foregoing waiver and (b) acknowledges that it and the other parties hereto have been induced to enter into this Agreement, as applicable, by, among other things, the mutual waivers and certifications in this Section 10.11.

SECTION 10.12. Severability. In the event any one or more of the provisions contained in this Agreement should be held invalid, illegal or unenforceable in any respect, the validity, legality and enforceability of the remaining provisions contained herein and therein shall not in any way be affected or impaired thereby. The parties shall endeavor in good-faith negotiations to replace the invalid, illegal or unenforceable provisions with valid provisions the economic effect of which comes as close as possible to that of the invalid, illegal or unenforceable provisions.

SECTION 10.13. Counterparts. This Agreement may be executed in two or more counterparts, each of which shall constitute an original but all of which when taken together shall constitute but one contract, and shall become effective as provided in Section 10.03. The words “delivery,” “execution,” “execute,” “signed,” “signature,” and words of like import in or related to any document to be signed in connection with this Agreement or any other Loan Document and the transactions contemplated hereby or thereby (including without limitation any Interest Election Request or any amendment, consent, waiver, assignment, restatement, or supplement to any Loan Document) shall be deemed to include electronic signatures, the electronic matching of assignment terms and contract formations on electronic platforms approved by the Administrative Agent, or the keeping of records in electronic form, each of which shall be of the same legal effect, validity or enforceability as a manually executed signature, physical delivery thereof or the use of a paper-based recordkeeping system, as the case may be, to the extent and as provided for in any applicable Law, including the Federal Electronic Signatures in Global and National Commerce Act, the New York State Electronic Signatures and Records Act, or any other similar state laws based on the Uniform Electronic Transactions Act.

SECTION 10.14. Headings. Article and Section headings and the Table of Contents used herein are for convenience of reference only, are not part of this Agreement and are not to affect the construction of, or to be taken into consideration in interpreting, this Agreement.

SECTION 10.15. Jurisdiction, Consent to Service of Process. (a) Each party hereto hereby irrevocably and unconditionally submits, for itself and its property, to the exclusive jurisdiction of any New York State court or Federal court of the United States of America sitting in New York City in the Borough of Manhattan, and any appellate court from any thereof, in any action or proceeding arising out of or relating to this Agreement, or for recognition or enforcement of any judgment, and each of the parties hereto hereby irrevocably and unconditionally agrees that all claims in respect of any such action or proceeding will be heard and determined in such New York State court or, to the extent permitted by law, in such Federal court. Each of the parties hereto agrees that a final judgment in any such action or proceeding shall be conclusive and may be enforced in other jurisdictions by suit on the judgment or in any other manner provided by law. Nothing in this Agreement shall affect any right that any Lender may otherwise have to bring any action or proceeding relating to this Agreement against any Borrower or its properties in the courts of any jurisdiction.

(b) Each party hereto hereby irrevocably and unconditionally waives, to the fullest extent it may legally and effectively do so, any objection which it may now or hereafter have to the laying of venue of any suit, action or proceeding arising out of or relating to this Agreement in any New York State or Federal court. Each of the parties hereto hereby irrevocably waives, to the fullest extent permitted by law, the defense of an inconvenient forum to the maintenance of such action or proceeding in any such court.

(c) Each party to this Agreement irrevocably consents to service of process in the manner provided for notices in Section 10.01. Nothing in this Agreement will affect the right of any party to this Agreement to serve process in any other manner permitted by law.

(d) To the extent that any party hereto has, or hereafter may be entitled to claim, any immunity (whether sovereign or otherwise) from suit, jurisdiction of any court or from any legal process (whether through service of notice, attachment prior to judgment, attachment in aid of execution or otherwise) with respect to itself, such party hereby waives such immunity in respect of its obligations hereunder and any other Loan Document to the fullest extent permitted by applicable law and, without limiting the generality of the foregoing, agrees that the waivers set forth in this Section 10.15(d) shall be effective to the fullest extent now or hereafter permitted under the Foreign Sovereign Immunities Act of 1976 (as amended, and together with any successor legislation) and are, and are intended to be, irrevocable for purposes thereof.

SECTION 10.16. Conversion of Currencies. (a) If, for the purpose of obtaining judgment in any court, it is necessary to convert a sum due hereunder in one currency into another currency, the parties hereto agree, to the fullest extent that they may legally and effectively do so, that the rate of exchange used shall be that at which in accordance with normal banking procedures the Administrative Agent could purchase the first currency with such other currency in The City of New York, on the Business Day immediately preceding the day on which final judgment is given.

(b) The obligation of each Borrower in respect of any such sum due from it to the Administrative Agent, any Lender or any Issuer hereunder or under the other Loan Documents shall, notwithstanding any judgment in a currency (the "Judgment Currency") other than that in which such sum is denominated in accordance with the applicable provisions of this Agreement (the "Agreement Currency"), be discharged only to the extent that on the Business Day following receipt by the

Administrative Agent or such Lender or Issuer, as the case may be, of any sum adjudged to be so due in the Judgment Currency, the Administrative Agent or such Lender or such Issuer, as the case may be, may in accordance with normal banking procedures purchase the Agreement Currency with the Judgment Currency. If the amount of the Agreement Currency so purchased is less than the sum originally due to the Administrative Agent or any Lender or Issuer from any Borrower in the Agreement Currency, such Borrower agrees, as a separate obligation and notwithstanding any such judgment, to indemnify the Administrative Agent or such Lender or such Issuer, as the case may be, against such loss. If the amount of the Agreement Currency so purchased is greater than the sum originally due to the Administrative Agent or any Lender or Issuer in such currency the Administrative Agent or such Lender or Issuer, as the case may be, agrees to return the amount of any excess to such Borrower (or to any other person who may be entitled thereto under applicable law).

SECTION 10.17. National Security Laws. (a) Each Lender and each Issuer hereby notifies each Borrower that pursuant to the requirements of the USA Patriot Act (Title III of Pub. L. 107-56 (signed into law October 26, 2001)) (the "Act"), it is required to obtain, verify and record information that identifies such Borrower, which information includes the name and address of such Borrower and other information that will allow such Lender to identify such Borrower in accordance with the Act.

(b) Notwithstanding any other provision of this Agreement, no Lender or Issuer will assign its rights and obligations under this Agreement, or sell participations in its rights and/or obligations under this Agreement, to any person who is (i) listed on the Specially Designated Nationals and Blocked Persons List maintained by the U.S. Department of Treasury Office of Foreign Assets Control ("OFAC") and/or on any other similar list maintained by OFAC pursuant to any authorizing statute, executive order or regulation or (ii) either (A) included within the term "designated national" as defined in the Cuban Assets Control Regulations, 31 C.F.R. Part 515 or (B) designated under Sections 1(a), 1(b), 1(c) or 1(d) of Executive Order No. 13224, 66 Fed. Reg. 49079 (published September 25, 2001) or similarly designated under any related enabling legislation or any other similar executive orders.

SECTION 10.18. Confidentiality. Each Lender, each Issuer, the Administrative Agent, the Syndication Agent, the Co-Documentation Agents and each Arranger agree to use all reasonable efforts to keep information obtained by it pursuant hereto and the other Loan Documents (other than such information that is made public by Howmet or any of its Affiliates) confidential in accordance with such person's customary practices and agrees that it shall not disclose any such information other than (a) to such person's respective Affiliates and their respective employees, representatives, service providers and agents that are or are expected to be involved in the evaluation of such information in connection with the Transactions contemplated by this Agreement and are advised of the confidential nature of such information, (b) to the extent such information presently is or hereafter becomes available to such person on a non-confidential basis from a source other than Howmet, the other Borrowers or any advisor, agent, employee or other representative thereof in each case that identified itself as such, (c) to the extent disclosure is required by law, regulation or judicial order or requested or required by bank regulators or auditors, (d) to actual or prospective assignees, participants and Approved Funds, grantees described in Section 10.04, any direct or indirect contractual counterparties to any swap or derivative transaction relating to any Borrower and its Obligations, and to their respective legal or financial advisors, in each case and to the extent such assignees, participants, Approved Funds, grantees or counterparties are instructed to comply with, and to cause their advisors to comply with, the provisions of this Section 10.18 or other provisions at least as restrictive as the provisions of this Section 10.18, (e) to any rating agency when required by it, provided, however, that, prior to any such disclosure, such rating agency shall undertake in writing to preserve the confidentiality of any confidential information relating to Howmet or the other Borrowers received by it from either the Administrative Agent, the Syndication Agent or the Co-Documentation Agents, any of the Arrangers, any Lender or any Issuer, (f) disclosures in connection with the exercise of any remedies hereunder or under any other Loan Document and (g) disclosures

required or requested by any governmental agency or representative thereof or by the National Association of Insurance Commissioners or pursuant to legal or judicial process. Notwithstanding any other provision in this Agreement, the Administrative Agent hereby agrees that the Borrowers (and each of their respective officers, directors, employees, accountants, attorneys and other advisors) may disclose to any and all persons, without limitation of any kind, the U.S. tax treatment and U.S. tax structure of the Facility and the transactions contemplated hereby and all materials of any kind (including opinions and other tax analyses) that are provided to it relating to such U.S. tax treatment and U.S. tax structure.

SECTION 10.19. Waiver of Notice Period Under Existing Credit Agreement. The requirements under the Existing Credit Agreement to provide prior written notice with respect to the termination of the "Total Commitment", as such term is defined in the Existing Credit Agreement, is hereby waived.

SECTION 10.20. Acknowledgement and Consent to Bail-In of Affected Financial Institutions. Notwithstanding anything to the contrary in any Loan Document or in any other agreement, arrangement or understanding among any such parties, each party hereto acknowledges that any liability of any Affected Financial Institution arising under any Loan Document, to the extent such liability is unsecured, may be subject to the Write-Down and Conversion Powers of the applicable Resolution Authority and agrees and consents to, and acknowledges and agrees to be bound by:

- (a) the application of any Write-Down and Conversion Powers by the applicable Resolution Authority to any such liabilities arising hereunder which may be payable to it by any party hereto that is an Affected Financial Institution; and
- (b) the effects of any Bail-in Action on any such liability, including, if applicable:
 - (i) a reduction in full or in part or cancellation of any such liability;
 - (ii) a conversion of all, or a portion of, such liability into shares or other instruments of ownership in such Affected Financial Institution, its parent undertaking, or a bridge institution that may be issued to it or otherwise conferred on it, and that such shares or other instruments of ownership will be accepted by it in lieu of any rights with respect to any such liability under this Agreement or any other Loan Document; or
 - (iii) the variation of the terms of such liability in connection with the exercise of the Write-Down and Conversion Powers of the applicable Resolution Authority.

SECTION 10.21. No Fiduciary Duty. The Administrative Agents, the Syndication Agent, each Lender, each Issuer and their respective Affiliates (collectively, solely for purposes of this paragraph, the "Lenders"), may have economic interests that conflict with those of any Borrower, its stockholders and/or its Affiliates. Each Borrower agrees that nothing in the Loan Documents or otherwise will be deemed to create an advisory, fiduciary or agency relationship or fiduciary or other implied duty between any Lender, on the one hand, and any Borrower, its stockholders or its Affiliates, on the other. Each Borrower acknowledges and agrees that (i) the transactions contemplated by the Loan Documents (including the exercise of rights and remedies hereunder and thereunder) are arm's-length commercial transactions between the Lenders, on the one hand, and the Borrowers, on the other, and (ii) in connection therewith and with the process leading thereto, (x) no Lender has assumed an advisory or fiduciary responsibility in favor of any Borrower, its stockholders or its Affiliates with respect to the transactions contemplated hereby (or the exercise of rights or remedies with respect thereto) or the process leading thereto (irrespective of whether any Lender has advised, is currently advising or will advise any Borrower, its stockholders or its Affiliates on other matters) or any other obligation to any

Borrower except the obligations expressly set forth in the Loan Documents and (y) each Lender is acting solely as principal and not as the agent or fiduciary of any Borrower, its management, stockholders, creditors or any other person. Each Borrower acknowledges and agrees that it has consulted its own legal and financial advisors to the extent it deemed appropriate and that it is responsible for making its own independent judgment with respect to such transactions and the process leading thereto. Each Borrower agrees that it will not claim that any Lender has rendered advisory services of any nature or respect, or owes a fiduciary or similar duty to such Borrower, in connection with such transaction or the process leading thereto.

SECTION 10.22. Amendment and Restatement. (a) On the Closing Date, the Existing Credit Agreement shall be amended and restated in its entirety by this Agreement and (i) all references to the Existing Credit Agreement in any Loan Document other than this Agreement (including in any amendment, waiver or consent) shall be deemed to refer to the Existing Credit Agreement as amended and restated hereby, (ii) all references to any section (or subsection) of the Existing Credit Agreement in any Loan Document (but not herein) shall be amended to be, *mutatis mutandis*, references to the corresponding provisions of this Agreement and (iii) except as the context otherwise provides, all references to this Agreement herein (including for purposes of indemnification and reimbursement of fees) shall be deemed to be reference to the Existing Credit Agreement as amended and restated hereby. This Agreement is not intended to constitute, and does not constitute, a novation of the obligations and liabilities under the Existing Credit Agreement (including the Obligations) or to evidence payment of all or any portion of such obligations and liabilities.

(b) On and after the Closing Date, (i) the Existing Credit Agreement shall be of no further force and effect except as amended and restated hereby and except to evidence (A) the incurrence by the Borrower or any Borrowing Subsidiary of the Obligations under and as defined therein (whether or not such Obligations are contingent as of the Closing Date), (B) the representations and warranties made by the Borrower or any Borrowing Subsidiary prior to the Closing Date and (C) any action or omission performed or required to be performed pursuant to such Existing Credit Agreement prior to the Closing Date (including any failure, prior to the Closing Date, to comply with the covenants contained in such Existing Credit Agreement) and (ii) the terms and conditions of this Agreement, shall apply to all Obligations incurred under the Existing Credit Agreement, the Notes issued thereunder and any Letters of Credit (as defined therein) issued thereunder.

(c) Except as expressly provided in any Loan Document, this Agreement (i) shall not cure any breach of the Existing Credit Agreement or any "Default" or "Event of Default" thereunder existing prior to the date hereof and (ii) is limited as written and is not a consent to any other modification of any term or condition of any Loan Document, each of which shall remain in full force and effect.

(d) Each of the Borrowers, any Borrowing Subsidiary and Howmet in its capacity as a guarantor under Article VIII, hereby acknowledges and agrees that on and after the Closing Date, after giving effect to this Amendment, all of its respective obligations and liabilities under the Loan Documents to which it is a party are reaffirmed, and remain in full force and effect.

[Signature pages intentionally omitted]

**HOWMET AEROSPACE INC.
NON-EMPLOYEE DIRECTOR COMPENSATION POLICY**

Effective as of January 1, 2023

1. **General.** This Non-Employee Director Compensation Policy (the "Policy"), sets forth the cash and equity-based compensation that has been approved by the Board of Directors (the "Board") of Howmet Aerospace Inc., a Delaware corporation, (the "Company") as payable to eligible non-employee members of the Board ("Non-Employee Directors"), effective as of January 1, 2023. The cash and equity-based compensation described in this Policy shall be paid or be made, as applicable, automatically and without further action of the Board, to each Non-Employee Director who may be eligible to receive such compensation. This Policy shall remain in effect until it is revised or rescinded by further action of the Board. The terms and conditions of this Policy shall supersede any prior cash or equity compensation arrangements between the Company and its Non-Employee Directors.

2. **Cash Compensation.**

(a) **Annual Retainers.** Each Non-Employee Director shall be eligible to receive an annual cash retainer of \$120,000 for service on the Board. In addition, subject to paragraph 2(b) below, a Non-Employee Director shall receive the following additional annual retainers, as applicable:

Non-Employee Director Position	Additional Annual Cash Retainer Fee
Lead Director	\$35,000
Audit Committee Chair Fee	\$25,000
Compensation and Benefits Committee Chair Fee	\$20,000
Other Committee Chair Fee	\$15,000

(b) **Payment of Chair Fees.** At any one time, each non-Employee Director may receive only one additional annual retainer fee in connection with service as the Chair of a committee (whether in the position of Lead Director, Audit Committee Chair, Compensation and Benefits Committee Chair or Other Committee Chair), regardless of how many committee Chair positions held by such director. For the avoidance of doubt, a non-Employee Director may simultaneously serve as the Chair of more than one committee, but will receive for such service only one additional annual retainer fee, equal to the highest of the additional annual retainer fees associated with his or her Chair positions.

(c) **Payment of Retainers.** The annual retainers described in Section 2(a) shall be earned on a quarterly basis based on a calendar quarter and shall be paid by the Company in arrears not later than the third business day following the end of each calendar quarter (if not deferred by the Non-Employee Director in accordance with subsection (e) hereof). In the event a Non-Employee Director does not serve as a Non-Employee Director, or in the applicable positions described in Section 2(a), for an entire calendar quarter, the retainer paid to such Non-Employee Director shall be prorated for the

portion of such calendar quarter actually served as a Non-Employee Director, or in such positions, as applicable.

- (d) **Exceptional Meeting Fees.** A fee of \$1,200 shall be paid to a Non-Employee Director for each Board or committee meeting attended by such Non-Employee Director in excess of five (5) special Board or committee meetings during the applicable calendar year and applies only to any non-regularly scheduled meeting in excess of a two-hour duration. Such exceptional meeting fees shall be paid by the Company in arrears not later than the third business day following the end of the calendar quarter in which any such exceptional meeting occurs (if not deferred by the Non-Employee Director in accordance with subsection (e) hereof).
 - (e) **Deferral of Retainers.** Non-Employee Directors may elect to defer payment of all or a portion of the annual retainers described in Section 2(a) and the exceptional meeting fees described in Section 2(d) into specified investment funds and/or into vested restricted share units for shares of the Company's common stock, which deferral will be made pursuant to the terms of the Company's Amended and Restated Deferred Fee Plan for Directors or its successor plan (the "Deferred Fee Plan"). Unless otherwise determined by the Board, any restricted share units will be granted under the 2013 Howmet Aerospace Stock Incentive Plan or its successor plan (the "Equity Plan"), on the date on which such retainer(s) would otherwise have been paid in cash. The extent to which a Non-Employee Director may defer annual retainer payments into vested restricted share units will therefore be subject to any limit on awards granted to a Non-Employee Director set forth in the Equity Plan.
3. **Equity Compensation.** Non-Employee Directors shall be granted the equity awards described below. The awards described below in Sections 3(a) and 3(b) shall be granted under and shall be subject to the terms and provisions of the Equity Plan and shall be granted subject to an award agreement in substantially the same form approved by the Board prior to or as of the grant date, setting forth the terms of the award (the "Award Terms"), consistent with the Equity Plan. For purposes of this Section 3, the number of shares subject to any restricted share unit award will be determined by dividing the grant date dollar value specified under subsection (a) or (b) hereof by the Fair Market Value (as defined in the Equity Plan) of a share of the Company's common stock on the date of grant.
- (a) **Annual Equity Award.** A person who is a Non-Employee Director immediately following each annual meeting of the Company's stockholders and who will continue to serve as a Non-Employee Director following such annual meeting shall be automatically granted on the second market trading day following the date of each such annual meeting a restricted share unit award with a grant date value equal to \$160,000 (the "Annual Equity Award"). The Annual Equity Award shall vest on the earlier of the first anniversary date of the grant date or the date of the Company's next subsequent annual meeting of stockholders following the grant date.

- (b) **Pro-Rated Annual Equity Award.** On the fifth market trading day following a person's initial appointment as a Non-Employee Director, and provided such person has not otherwise received an Annual Equity Award for the relevant year under Section 3(a), the Non-Employee Director shall be automatically granted a restricted share unit award with a grant date value equal to \$160,000, in each case multiplied by a fraction, the numerator of which is 365 less the number of days that have elapsed since the date of the Company's last annual meeting of stockholders and the Non-Employee Director's date of initial appointment, and the denominator of which is 365 (the "**Pro-Rated Award**"). The Pro-Rated Award shall vest on the date of the Company's next subsequent annual meeting of stockholders following the date of the Non-Employee Director's appointment to the Board.
- (c) **Special Vesting of Equity Awards.** Notwithstanding Sections 3(a) or (b) above and as shall be further set forth in the Award Terms: (i) unvested equity awards shall vest in full upon the death of a Non-Employee Director or upon a Change in Control where a Replacement Award is not provided or the Non-Employee Director's service is terminated (where Change in Control and Replacement Award are as defined in the Equity Plan); and (ii) unvested equity awards shall vest on a pro-rata basis in the event of a Non-Employee Director's termination of service for any other reason.
- (d) **Deferral of Equity Award.** Payment of the Annual Equity Award or any Pro-Rated Award will be deferred until the Non-Employee Director's separation from service, in accordance with the terms of the Deferred Fee Plan, unless otherwise required by applicable laws.
4. **Stock Ownership Guideline.** Within a period of six years from the date of a person's initial appointment as a Non-Employee Director, each Non-Employee Director is required to attain ownership of at least \$750,000 in the Company's common stock and must maintain such ownership until retirement from the Board.
5. **Director Compensation Limit.** As further set forth in the Equity Plan, the sum of the grant date value of all equity awards granted and all cash compensation paid by the Company to a Non-Employee Director as compensation for services as a Non-Employee Director shall not exceed \$750,000 during any calendar year. For avoidance of doubt, compensation shall count towards this limit for the calendar year in which it is granted or earned, and not later when distributed, in the event it is deferred.
6. **Policy Subject to Amendment, Modification and Termination.** This Policy may be amended, modified or terminated by the Board in the future at its sole discretion, provided that no such action that would materially and adversely impact the rights with respect to annual retainers payable in the calendar quarter during which a Non-Employee Director is then performing services shall be effective without the consent of the affected Non-Employee Director.

SUBSIDIARIES OF THE REGISTRANT
(As of December 31, 2022)

Name	State or Country of Organization
Howmet Aerospace Inc.	Delaware
Howmet Domestic LLC	Delaware
Howmet Securities LLC	Delaware
Howmet International Inc.	Delaware
Howmet Holdings Corporation	Delaware
Howmet Castings & Services, Inc.	Delaware
Howmet Corporation	Delaware
Howmet International Holding Company LLC	Delaware
Howmet Luxembourg S.à r.l.	Luxembourg
Howmet Holdings Limited	United Kingdom
Howmet-Köfém Kft	Hungary
Howmet Global Treasury Services S.a.r.l.	Luxembourg
FR Acquisitions Corporation Europe Limited	United Kingdom
Howmet Europe Commercial SAS	France
Cordant Technologies Holding Company	Delaware
Howmet Global Fastening Systems Inc.	Delaware
FR Acquisition Corporation (US), Inc.	Delaware
JFB Firth Rixson Inc.	Delaware

The names of particular subsidiaries have been omitted because, considered in the aggregate as a single subsidiary, they would not constitute, as of the end of the year covered by this report, a “significant subsidiary” as that term is defined in Regulation S-X under the Securities Exchange Act of 1934.

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We hereby consent to the incorporation by reference in the Registration Statements on Form S-3 (No. 333-237705) and Form S-8 (Nos. 333-266545, 333-229914, 333-209772, 333-182899, 333-170801, 333-168428, 333-153369, 333-146330, 333-128445, 333-106411, 333-32516, 333-155668, 333-232219, 333-212246, 333-189882, 333-229727, 333-159123 and 333-203275) of Howmet Aerospace Inc. of our report dated February 14, 2023 relating to the financial statements and the effectiveness of internal control over financial reporting, which appears in this Form 10-K.

/s/ PricewaterhouseCoopers LLP
Pittsburgh, Pennsylvania
February 14, 2023

POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS that each of the undersigned Directors of Howmet Aerospace Inc. (the "Company") hereby constitutes and appoints W. PAUL MYRON, KENNETH J. GIACOBBE, LOLA F. LIN, AND BARBARA L. SHULTZ, or any of them, his or her true and lawful attorneys-in-fact and agents, with full power of substitution, to do any and all acts and things and to execute any and all instruments that said attorneys-in-fact and agents, or any of them, may deem necessary or advisable or may be required:

(1) To enable the Company to comply with the Securities Exchange Act of 1934, as amended (the "1934 Act"), and any rules, regulations or requirements of the Securities and Exchange Commission (the "Commission") in respect thereof, in connection with the filing under the 1934 Act of the Company's Annual Report on Form 10-K for the year ended December 31, 2022 (the "2022 Annual Report"), including specifically, but without limiting the generality of the foregoing, power and authority to sign the name of each of the undersigned in the capacity of Director of the Company to the 2022 Annual Report to be filed with the Commission and to any instruments or documents filed as part of or in connection with the 2022 Annual Report, including any amendments or supplements thereto;

(2) To enable the Company to comply with the Securities Act of 1933, as amended (the "1933 Act"), and any rules, regulations or requirements of the Commission in respect thereof, in connection with the registration under the 1933 Act during 2023 of the offer and sale or delivery of shares of common stock of the Company to be issued under the 2013 Howmet Aerospace Stock Incentive Plan, as Amended and Restated, as such plan may be amended and/or restated from time to time (including any amendments thereto or restatements thereof, the "2013 Plan"), including specifically, but without limiting the generality of the foregoing, power and authority to sign the name of each of the undersigned in the capacity of Director of the Company to any registration statement on Form S-8, or on such other form as may be appropriate, to be filed with the Commission in respect of said shares and the 2013 Plan, or any of them, to any and all pre-effective amendments, post-effective amendments and supplements to any such registration statement, and to any instruments or documents filed as part of or in connection with any such registration statement or any such amendments or supplements thereto; and

(3) To enable the Company to comply with the 1933 Act, and any rules, regulations or requirements of the Commission in respect thereof, in connection with the registration under the 1933 Act during 2023 of the offer and sale or delivery of shares of common stock of the Company to be issued under the Company's employee retirement savings plans (together with interests in such plans), including, without limitation, the Howmet Aerospace Hourly Retirement Savings Plan, the Howmet Aerospace Salaried Retirement Savings Plan, and employee retirement or other savings plans sponsored by the Company or its subsidiaries or entities acquired by the Company from time to time (the "Plans"), including specifically, but without limiting the generality of the foregoing, power and authority to sign the name of each of the undersigned in the capacity of Director of the Company to any registration statement on Form S-8, or on such other form as may be appropriate, to be filed with the Commission in respect of said shares and the Plans (or interests in such Plans), or any of them, to any and all pre-effective amendments, post-effective amendments and supplements to any such registration statement, and to any instruments or documents filed as part of or in connection with any such registration statement or any such amendments or supplements thereto; and

(4) To enable the Company to comply with the 1933 Act, and any rules, regulations or requirements of the Commission in respect thereof, in connection with the registration under the 1933 Act on an unallocated basis of the Company's securities, including debt securities, preferred stock, common stock and hybrid securities (including convertible or exchangeable securities); warrants to purchase debt or equity securities of the Company; stock purchase contracts and stock purchase units; and trust preferred securities of a trust or similar vehicle and related guarantees thereof by the Company, including specifically, but without limiting the generality of the foregoing, power and authority (i) to sign the name of each of the undersigned in the capacity of Director of the Company to one or more registration statements on Form S-3 or such other form as such attorneys-in-fact, or any of them, may deem necessary or desirable (including any registration statement filed pursuant to Rule 462 under the 1933 Act), and to any and all amendments and post-effective amendments and supplements to any such registration statements, and to any and all instruments or documents filed as part of or in connection with any such registration statements or amendments or supplements thereto, and (ii) to file the same with all exhibits thereto with the Commission; and

granting unto each of said attorneys-in-fact and agents full power and authority to do and perform each and every act and thing requisite and necessary to be done, as fully to all intents and purposes as the undersigned might or could do in person, and each of the undersigned hereby ratifies and confirms all that said attorneys-in-fact and agents, or any of them, shall do or cause to be done by virtue hereof.

This power of attorney will be governed by and construed in accordance with the laws of the State of Delaware. The execution of this power of attorney is not intended to, and does not, revoke any prior powers of attorney. This power of attorney may be signed in any number of counterparts, each of which shall constitute an original and all of which, taken together, shall constitute one power of attorney.

IN WITNESS WHEREOF, each of the undersigned has subscribed these presents this 8th day of February 2023.

/s/ James F. Albaugh
James F. Albaugh

/s/ Amy E. Alving
Amy E. Alving

/s/ Sharon R. Barner
Sharon R. Barner

/s/ Joseph S. Cantie
Joseph S. Cantie

/s/ Robert F. Leduc
Robert F. Leduc

/s/ David J. Miller
David J. Miller

/s/ Jody G. Miller
Jody G. Miller

/s/ Nicole W. Piasecki
Nicole W. Piasecki

/s/ John C. Plant
John C. Plant

/s/ Ulrich R. Schmidt
Ulrich R. Schmidt

Certifications

I, John C. Plant, certify that:

1. I have reviewed this annual report on Form 10-K of Howmet Aerospace Inc.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 14, 2023

/s/ John C. Plant

John C. Plant

Executive Chairman and Chief Executive Officer

I, Ken Giacobbe, certify that:

1. I have reviewed this annual report on Form 10-K of Howmet Aerospace Inc.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 14, 2023

/s/ Ken Giacobbe

Ken Giacobbe

Executive Vice President and Chief Financial Officer

Certification
Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002

Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 (subsections (a) and (b) of Section 1350, Chapter 63 of Title 18, United States Code), each of the undersigned officers of Howmet Aerospace Inc., a Delaware corporation (the "Company"), does hereby certify that:

The Annual Report on Form 10-K for the period ended December 31, 2022 (the "Form 10-K") of the Company fully complies with the requirements of section 13(a) or 15(d) of the Securities Exchange Act of 1934 and information contained in the Form 10-K fairly presents, in all material respects, the financial condition and results of operations of the Company.

Dated:	February 14, 2023	<u>/s/ John C. Plant</u>
		John C. Plant
		Executive Chairman and Chief Executive Officer

Dated:	February 14, 2023	<u>/s/ Ken Giacobbe</u>
		Ken Giacobbe
		Executive Vice President and Chief Financial Officer

A signed original of this written statement required by Section 906, or other document authenticating, acknowledging, or otherwise adopting the signature that appears in typed form within the electronic version of this written statement required by Section 906, has been provided to the Company and will be retained by the Company and furnished to the Securities and Exchange Commission or its staff upon request.

The foregoing certification is being furnished to the Securities and Exchange Commission as an exhibit to the Form 10-K and shall not be considered filed as part of the Form 10-K.