



**Armstrong**<sup>®</sup>  
World Industries

Experience, Above All<sup>™</sup>



# 2022 Annual Report





## Dear Fellow Shareholders,

Our company delivered another year of solid performance in 2022 while managing through a shifting macroeconomic environment that produced a myriad of challenges. These included labor and supply chain issues, rapid inflation, rising interest rates and increased economic uncertainty.

I'm proud of how our teams adjusted to these challenging dynamics. We maintained focus on delivering value to our customers, partners, employees and shareholders as we continued to advance our growth strategy.

### Highlights from 2022 include:

- Revenue growth of 11% from 2021 results driven by 8% growth in our Mineral Fiber segment and 20% growth in our Architectural Specialties segment
- Mineral Fiber Average Unit Value<sup>1</sup> performance that more than offset inflation and the impact of lower Mineral Fiber sales volumes
- Improved profitability within our Architectural Specialties segment as we drove better pricing and operational efficiency
- Significant value returned to shareholders with more than \$200 million of share repurchases and cash dividends
- Continued our sustainability journey with our second sustainability report and received approval of our 2030 greenhouse gas emissions reduction targets by the Science Based Targets Initiative

Our 2022 results reflect the strength of our market position, our ability to adapt to changing economic environments, and our commitment to our corporate purpose of making a positive difference in the places where people live, work, learn, heal and play.

### Moving Forward

As we turned the page on 2022, we have taken stock of where we've been and where we're going. When I joined the company in 2011, Armstrong was a larger, less focused company with a global footprint that was exposed to significant market volatility. Over the last 12 years, we executed a separation from the flooring business, streamlined our asset base to focus on the Americas ceilings and specialty walls market, and acquired nine Architectural Specialties businesses to build the broadest portfolio of ceiling products in the industry and fuel significant, profitable top-line growth for the company.

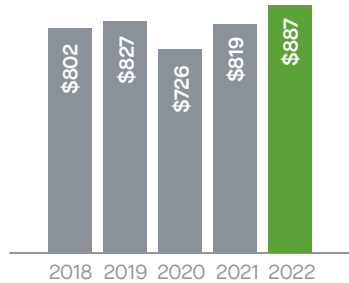
Importantly, our Americas focus on this attractive ceiling and walls segment of the commercial construction industry has increased our resilience and uniquely positions us to invest to deliver profitable growth through all economic cycles. Our strategic growth investments include expanding our Architectural Specialties segment through acquisitions and organic growth, digital tools that further strengthen our business by deepening our customer relationships, and our Healthy Spaces initiative to support the overall well-being of building occupants. Our investments are designed to drive growth by either spurring renovation, accessing new demand from underserved parts of the market, or selling more products in more spaces.

<sup>1</sup> Average Unit Value includes like-for-like price and mix benefits.

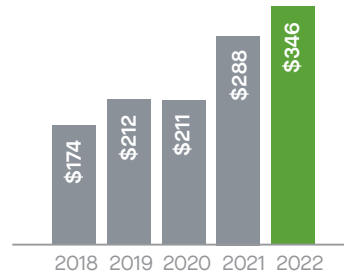
# Financial Score Card

Dollars in millions except per share data

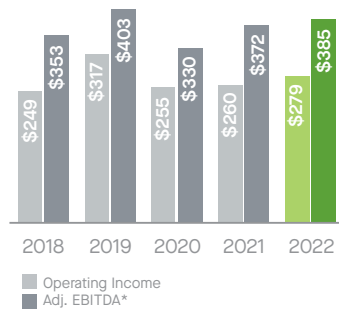
Mineral Fiber Net Sales



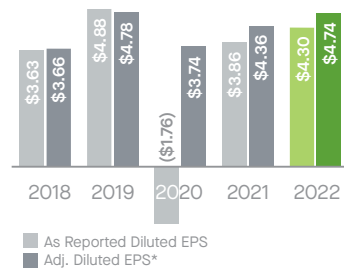
Architectural Specialties Net Sales



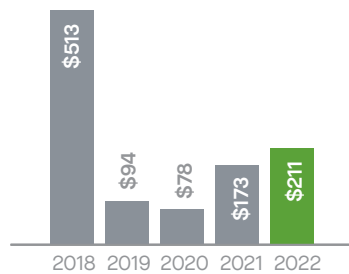
Operating Income & Adjusted EBITDA\*



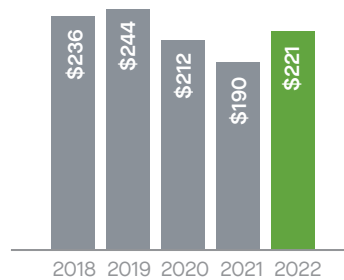
As Reported & Adjusted Diluted EPS from Continuing Operations\*



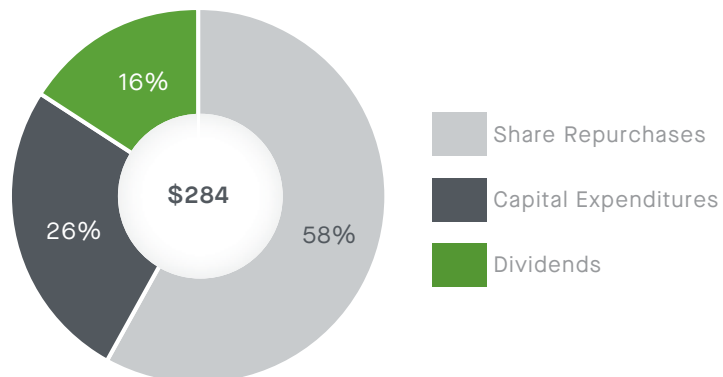
Cash Flow from Operating and Investing Activities\*\*



Adjusted Free Cash Flow\*



2022 Capital Deployment



\* Non-GAAP measure. Reconciliations to nearest GAAP measures provided at the end of this report.

\*\* 2018 includes \$272M of net proceeds related to the sale of international operations.

## Our Growth Initiatives

Our expansion in Architectural Specialties has been a powerful growth driver for Armstrong. By acquiring niche companies with unique, highly specifiable products and capabilities, we have broadened our reach with architects and designers, accessed more opportunities in statement projects, and, in the process, sold more of our core Mineral Fiber products. Revenue for this segment has more than tripled since 2016 from \$101 million to \$346 million in 2022. We believe there are more growth opportunities in this exciting category as we continue to leverage recently acquired businesses on the Armstrong platform.

We are also driving growth with our digital initiatives with both Kanopi™ by Armstrong, our digital, direct-to-customer marketplace, and ProjectWorks®, our automated design service. Kanopi, in particular, delivered quarter-on-quarter sales growth throughout 2022. This platform is designed to stimulate new sales opportunities from latent demand in the sizable installed base of mineral fiber ceilings, particularly from small customers with limited knowledge of ceiling attributes, design and installation. Our results are validating that Kanopi is providing an easy, effective platform to create new demand for Armstrong solutions.

Demand for ProjectWorks by designers, architects and contractors is also increasing. We continue to improve and accelerate the speed with which complex designs can be turned into work plans through the automation of design rules applied to ceiling projects. We have broadened its capability by incorporating more of our product portfolio into ProjectWorks, including many of our Architectural Specialties products. This service is an important example of how we differentiate Armstrong in the marketplace and enhance customer experiences.

We continue to make progress on our Healthy Spaces initiative by expanding the role ceilings play in achieving healthier, more sustainable spaces. We see this progress with increased 2022 sales of our Healthy Spaces mineral fiber products such as AirAssure® and Health Zone®. We continue to be excited about the possibilities in this area as we develop solutions that can impact the four key elements of Indoor Environmental Quality (IEQ) – air, sound, light and temperature. This includes new products like our StrataClean IQ™, an in-ceiling MERV 13 filtration system, and new partnerships such as we initiated with Awair, a leader in IEQ sensor technology.

## Returning Value to Shareholders

We have been able to make these important growth investments even while facing the unprecedented challenges of COVID-19 and its aftermath because of our strong market position, business model and execution. These strengths also support our ability to return value directly to shareholders. In fact, since 2016, we delivered more than \$1 billion in shareholder returns through a combination of dividends and share repurchases.

In closing, the results we have achieved and the momentum we're building with our growth initiatives are a tribute to the extraordinary efforts of our employees. Their dedication, agility and passion help us preserve and build upon our industry-leading position and will help sustain our success for years to come. I look forward to updating you on our future progress.



Vic Grizzle

President and Chief Executive Officer

## Experience, Above All™

We've worked recently to better understand how Armstrong World Industries as a brand resonates with architects and designers and customers, as well as our employees and the communities where we operate. What has come through loud and clear is that Armstrong provides our many stakeholders a great experience. Whether from the perspective of a customer looking for quality and service, an architect or designer seeking to bring their design intent to life, a general contractor working to cost-effectively and efficiently install complex ceiling and wall solutions, or the human experience as people enjoy the acoustical and aesthetic benefits of our products in the spaces they occupy, we work each and every day to ensure these are excellent, best-in-class experiences.



Middle: Optima® Tegular Ceiling Panels with Suprafine® XL® 9/16" Exposed Tee System

Bottom: FeltWorks® Blades – HookOn Ebbs & Flows

**UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION  
Washington, D.C. 20549  
FORM 10-K**

(Mark One)

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

For the transition period from \_\_\_\_\_ to \_\_\_\_\_

Commission File Number 1-2116

**ARMSTRONG WORLD INDUSTRIES, INC.**

(Exact name of registrant as specified in its charter)

<u>Pennsylvania</u> (State or other jurisdiction of incorporation or organization)	<u>23-0366390</u> (I.R.S. Employer Identification No.)
<u>2500 Columbia Avenue, Lancaster, Pennsylvania</u> (Address of principal executive offices)	<u>17603</u> (Zip Code)

Registrant's telephone number, including area code (717) 397-0611

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

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock, \$0.01 par value per share	AWI	New York Stock Exchange

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 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 time 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, a smaller reporting company, or an emerging growth 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 <input checked="" type="checkbox"/>	Accelerated filer <input type="checkbox"/>
Non-accelerated filer <input type="checkbox"/>	Smaller reporting company <input type="checkbox"/>
Emerging growth company <input type="checkbox"/>	

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.

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).

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

The aggregate market value of the Common Stock of Armstrong World Industries, Inc. held by non-affiliates based on the closing price (\$74.96 per share) on the New York Stock Exchange (trading symbol AWI) as of June 30, 2022 was approximately \$3.4 billion. As of February 15, 2023, the number of shares outstanding of the registrant's Common Stock was 45,438,268.

**Documents Incorporated by Reference**

Certain sections of Armstrong World Industries, Inc.'s definitive Proxy Statement for use in connection with its 2023 annual meeting of shareholders, to be filed no later than May 1, 2023 (120 days after the last day of our 2022 fiscal year), are incorporated by reference into Part III of this Form 10-K Report where indicated.

Auditor Name: KPMG LLP

Auditor Location: Philadelphia, PA

Auditor Firm ID: 185

## TABLE OF CONTENTS

	<u>PAGE</u>
Cautionary Note Regarding Forward-Looking Statements .....	3
 <u>PART I</u>	
Item 1. Business .....	5
Item 1A. Risk Factors .....	10
Item 1B. Unresolved Staff Comments .....	18
Item 2. Properties .....	18
Item 3. Legal Proceedings .....	18
Item 4. Mine Safety Disclosures .....	19
 <u>PART II</u>	
Item 5. Market for the Registrant’s Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities .....	20
Item 6. [Reserved] .....	20
Item 7. Management’s Discussion and Analysis of Financial Condition and Results of Operations .....	21
Item 7A. Quantitative and Qualitative Disclosures About Market Risk .....	31
Item 8. Financial Statements and Supplementary Data .....	32
Item 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosure .....	77
Item 9A. Controls and Procedures .....	77
Item 9B. Other Information .....	77
Item 9C. Disclosure Regarding Foreign Jurisdictions that Prevent Inspections .....	77
 <u>PART III</u>	
Item 10. Directors, Executive Officers and Corporate Governance .....	78
Item 11. Executive Compensation .....	79
Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters .....	79
Item 13. Certain Relationships and Related Transactions, and Director Independence .....	79
Item 14. Principal Accountant Fees and Services .....	79
 <u>PART IV</u>	
Item 15. Exhibits and Financial Statement Schedules .....	80
Item 16. Form 10-K Summary .....	82
Signatures .....	83

When we refer to “AWI,” the “Company,” “we,” “our” and “us”, we are referring to Armstrong World Industries, Inc. and its subsidiaries.

## CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

Certain statements in this Annual Report on Form 10-K and the documents incorporated by reference may constitute forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. Those forward-looking statements are subject to various risks and uncertainties and include all statements that are not historical statements of fact and those regarding our intent, belief or expectations, including, but not limited to, our expectations concerning our markets and their effect on our operating results; the impacts of COVID-19 on our business; our expectations regarding the payment of dividends; and our ability to increase revenues, earnings and earnings before interest, taxes, depreciation and amortization (as discussed below). Words such as “anticipate,” “expect,” “intend,” “plan,” “target,” “project,” “predict,” “believe,” “may,” “will,” “would,” “could,” “should,” “seek,” “estimate” and similar expressions are intended to identify such forward-looking statements. These statements are based on management’s current expectations and beliefs and are subject to a number of factors that could lead to actual results materially different from those described in the forward-looking statements. Although we believe that the assumptions underlying the forward-looking statements are reasonable, we can give no assurance that our expectations will be attained. Factors that could have a material adverse effect on our financial condition, liquidity, results of operations or future prospects or which could cause actual results to differ materially from our expectations include, but are not limited to:

### Risks Related to Our Operations

- changes in key customer relationships;
- availability and costs of manufacturing inputs or sourced products;
- financial contribution of Worthington Armstrong Venture (“WAVE”), our joint venture with Worthington Industries, Inc;
- labor;
- costs savings and productivity initiatives;
- progress towards environmental, social and governance (“ESG”) and sustainability objectives and related compliance;

### Risks Related to Our Strategy

- implementation of digitalization initiatives and product innovation;
- identification, completion and successful integration of strategic transactions;

### Risks Related to Financial Matters

- unanticipated negative tax consequences;
- our indebtedness;
- our liquidity;
- covenants in our debt agreements;
- defined benefit plan obligations;

### Risks Related to Legal and Regulatory Matters

- environmental liability exposure;
- claims and litigation;
- effectiveness of intellectual property rights protection;
- international operations;

### Risks Related to General Economic and Other Factors

- economic conditions;
- construction activity;
- market competition;
- customer consolidation;
- information technology disruptions and cybersecurity breaches;
- dependence on third-party vendors and suppliers;
- geographic concentration;
- ability to make dividend payments and stock repurchases;
- public health epidemics or pandemics (like COVID-19); and

- other risks detailed from time to time in our filings with the Securities and Exchange Commission (the “SEC”), press releases and other communications, including those set forth under “Risk Factors” included elsewhere in this Annual Report on Form 10-K.

Such forward-looking statements speak only as of the date they are made. We expressly disclaim any obligation to release publicly any updates or revisions to any forward-looking statements to reflect any change in our expectations with regard thereto or change in events, conditions or circumstances on which any statement is based.



## PART I

### ITEM 1. BUSINESS

Armstrong World Industries, Inc. (“AWI” or the “Company”) is a Pennsylvania corporation incorporated in 1891. When we refer to “we,” “our” and “us” in this report, we are referring to AWI and its subsidiaries.

AWI is a leader in the design, innovation and manufacture of ceiling and wall solutions in the Americas. Our products primarily include mineral fiber, fiberglass wool, metal, wood, wood fiber, glass-reinforced-gypsum and felt. We also manufacture ceiling suspension system (grid) products through a joint venture with Worthington Industries, Inc. (“Worthington”) called Worthington Armstrong Venture (“WAVE”).

#### Reportable Segments

Our operating segments are as follows: Mineral Fiber, Architectural Specialties and Unallocated Corporate.

*Mineral Fiber* – produces suspended mineral fiber and soft fiber ceiling systems. Our mineral fiber products offer various performance attributes such as acoustical control, rated fire protection, aesthetic appeal, and health and sustainability features. Ceiling products are sold to resale distributors, ceiling systems contractors and wholesalers and retailers (including large home centers). The Mineral Fiber segment also includes the results of WAVE, which manufactures and sells suspension system (grid) products and ceiling component products that are invoiced by both AWI and WAVE. Segment results relating to WAVE consist primarily of equity earnings and reflect our 50% equity interest in the joint venture. Ceiling component products consist of ceiling perimeters and trim, in addition to grid products that support drywall ceiling systems. For some customers, WAVE sells its suspension systems products to AWI for resale to customers. Mineral Fiber segment results reflect those sales transactions. The Mineral Fiber segment also includes all assets and liabilities not specifically allocated to our Architectural Specialties or Unallocated Corporate segment, including all property and related depreciation associated with our Lancaster, PA headquarters. Operating results for the Mineral Fiber segment include a significant majority of allocated Corporate administrative expenses that represent a reasonable allocation of general services to support its operations.

*Architectural Specialties* – produces, designs and sources ceilings and walls for use in commercial settings. Products are available in numerous materials, such as metal, felt and wood, in addition to various colors, shapes and designs. Products offer various performance attributes such as acoustical control, rated fire protection and aesthetic appeal. We sell standard, premium and customized products, a portion of which are derived from sourced products. Architectural Specialties products are sold primarily to resale distributors and direct customers, primarily ceiling systems contractors. The majority of this segment's revenues are project driven, which can lead to more volatile sales patterns due to project scheduling uncertainty. Operating results for the Architectural Specialties segment include a portion of allocated Corporate administrative expenses that represent a reasonable allocation of general services to support its operations.

*Unallocated Corporate* – includes certain assets, liabilities, income and expenses that have not been allocated to our other business segments and consists of: cash and cash equivalents, the net funded status of our U.S. Retirement Income Plan (“RIP”), the estimated fair value of interest rate swap contracts, outstanding borrowings under our senior secured credit facility and income tax balances. Our Unallocated Corporate segment also includes all expenses related to our German defined benefit pension plan that was formerly reported in our Europe, Middle East and Africa (including Russia) (“EMEA”) and Pacific Rim segments and was not included in the sale of certain subsidiaries comprising our businesses and operations in EMEA and the Pacific Rim, including the corresponding businesses and operations conducted by WAVE (collectively, the “Sale”), to Knauf International GmbH (“Knauf”) in 2019.

#### Overview

Our business has been built on providing high-quality, innovative products through a highly focused service model as well as by maintaining strong brand awareness and trust. We are committed to delivering profitable topline growth and sustainable shareholder value by strengthening our core Mineral Fiber segment and expanding our Architectural Specialties segment into new, adjacent business categories and sectors. Through this strategy, we have delivered consistent growth in mineral fiber sales dollars per unit sold through product innovation, including our Healthy Spaces products, Total Acoustics® solutions and Sustain® family of products, and we have built a broad portfolio of architectural specialties products for ceilings and walls in our markets. Our primary focus is on growth initiatives that further leverage innovation and digitalization (including the movement toward healthier and sustainable indoor environments in order to accelerate renovation), in addition to expansion of our Architectural Specialties segment through acquisitions, and overall strong cash flow generation.

## Acquisitions

In November 2022, we acquired the business and assets of GC Products, Inc. (“GC Products”), based in Lincoln, CA. GC Products is a designer and manufacturer of glass-reinforced-gypsum, glass-reinforced-cement, molded ceiling and specialty wall products with one manufacturing facility.

In December 2020, we acquired all the issued and outstanding equity of Arktura LLC (“Arktura”) and certain subsidiaries with operations in the United States and Argentina. Arktura is a designer and fabricator of metal and felt ceilings, walls, partitions and facades with one manufacturing facility based in Los Angeles, California.

In August 2020, we acquired the business and assets of Moz Designs, Inc. (“Moz”), based in Oakland, California. Moz is a designer and fabricator of custom architectural metal ceilings, walls, dividers and column covers for interior and exterior applications with one manufacturing facility.

In July 2020, we acquired all the issued and outstanding capital stock of TURF Design, Inc. (“Turf”), with one manufacturing facility in Elgin, Illinois and a design center in Chicago, Illinois. Turf is a designer and manufacturer of acoustic felt ceilings and wall products.

The operations, assets and liabilities of these acquisitions are included in our Architectural Specialties segment.

## Markets

We primarily operate in the United States, Canada and Latin America. We believe we are well positioned in the industry sectors and categories in which we operate, often holding a leadership position. Our products compete against mineral fiber and fiberglass products from other manufacturers, as well as drywall and a wide range of specialty ceiling products. We compete directly with other domestic and international suppliers of these products. The major markets in which we compete are:

*Commercial Construction.* Our revenue opportunities come from new construction as well as renovation of existing buildings. Most of our revenue comes from the following sectors of commercial construction – office, education, transportation, healthcare and retail. We monitor U.S. construction starts and project activity. Our revenue from new construction can lag behind construction starts by as much as 24 months. We also monitor office vacancy rates, the Architecture Billings Index, state and local government spending, gross domestic product (“GDP”) and general employment levels, which can indicate movement in renovation and new construction opportunities. We believe that these statistics, taking into account the time-lag effect, provide a reasonable indication of our future revenue opportunity from commercial renovation and new construction. Additionally, we believe that customer preferences for product type, style, color, performance attributes (such as acoustics, sustainability and health attributes), availability, affordability and ease of installation also affect our revenue.

In our Mineral Fiber segment, we estimate that a majority of our commercial construction market sales are used for existing building renovation purposes by end-users of our products. We differentiate renovation opportunities between major renovation projects, which tend to be larger in scope, versus repair projects that generally involve the replacement of old products with new. In our Architectural Specialties segment, we estimate that a majority of our commercial market sales are used for new building construction by end-users of our products. The end-use of our products is based on management estimates as such information is not easily determinable.

*Residential Construction.* While a smaller portion of our business, we also sell mineral fiber products for use in single and multi-family housing. We estimate that existing home renovation work represents the majority of the residential construction market opportunity. Key U.S. statistics that indicate market opportunity include existing home sales (a key indicator for renovation opportunity), housing starts, housing completions, home prices, interest rates and consumer confidence.

## Customers

We use our reputation, capabilities, service, innovation and brand recognition to develop long-standing relationships with our customers. We principally sell commercial products to building materials distributors, who re-sell our products to contractors, subcontractors’ alliances, large architect and design firms, and major facility owners. We have important relationships with national home centers such as Lowe’s Companies, Inc. and The Home Depot, Inc., with wholesalers who re-sell our products to dealers who service builders, and direct customers, which include sales to contractors, architects and designers who specify products.

In 2022, approximately 70% of our consolidated net sales were to distributors. Sales to large home centers accounted for nearly 10% of our consolidated net sales. Our remaining sales were primarily to direct customers and retailers.

Gross sales to distributors Foundation Building Materials, Inc. and GMS, Inc. totaled \$547.8 million and individually exceeded 10% of our consolidated gross sales in 2022. Sales to these customers contributed to both our Mineral Fiber and Architectural Specialties segment net sales.

### **Working Capital**

We produce goods for inventory and sell on credit to our customers. Generally, our distributors carry inventory as needed to meet local or rapid delivery requirements. We sell our products to select, pre-approved customers using customary trade terms that allow for payment in the future. These practices are typical within the industry.

### **Competition**

The markets in which our products are sold are highly competitive. Principal attributes of competition include product performance, product styling, service and price. Competition comes from both domestic and international manufacturers. Additionally, some of our products compete with alternative products or finishing solutions, namely, drywall and exposed structure (also known as open plenum). Excess industry capacity exists for certain products, which tends to increase price competition. The following companies are our primary competitors:

CertainTeed Corporation (a subsidiary of Saint-Gobain), Chicago Metallic Corporation (owned by Rockwool International A/S), Georgia-Pacific Corporation, Rockfon A/S (owned by Rockwool International A/S), USG Corporation (owned by Gebr. Knauf KG), Ceilings Plus (owned by USG Corporation), Hunter Douglas, Rulon International, and 9Wood.

### **Raw Materials**

We purchase raw materials from numerous suppliers worldwide in the ordinary course of business. The principal raw materials are fiberglass, perlite, recycled paper and starch. Other raw materials include clays, felt, pigment, wood and wood fiber. We manufacture most of our mineral wool needs at one of our manufacturing facilities. Finally, we use aluminum and steel in the production of metal ceilings by us and by WAVE, our joint venture that manufactures grid products.

We also purchase significant amounts of packaging materials and consume substantial amounts of energy, such as electricity and natural gas, and water.

In general, adequate supplies of raw materials are available to all of our operations. However, availability can change for a number of reasons, including environmental conditions, laws and regulations, shifts in demand by other industries competing for the same materials, transportation disruptions and/or business decisions made by, or events that affect, our suppliers. There is no assurance that these raw materials will remain in adequate supply to us.

Prices for certain high usage raw materials can fluctuate dramatically. Cost increases for these materials can have a significant adverse impact on our manufacturing costs. Given the competitiveness of our markets, we may not be able to recover the increased manufacturing costs through increasing selling prices to our customers.

### **Sourced Products**

Some of the products we sell are sourced from third parties. Our primary sourced products include specialty ceiling products. We purchase some of our sourced products from suppliers that are located outside of the U.S., primarily from Europe and the Pacific Rim. Sales of sourced products represented approximately 10% of our total consolidated revenue in 2022.

In general, we believe we have adequate supplies of sourced products. However, we cannot guarantee that the supply will remain adequate.


### **Seasonality**

Generally, our sales tend to be stronger in the second and third quarters of our fiscal year due to more favorable weather conditions, customer business cycles and the timing of renovation and new construction.

## **Patent and Intellectual Property Rights**

Patent protection is important to our business. Our competitive position has been enhanced by patents on products and processes developed or perfected within AWI or obtained through acquisitions and licenses. In addition, we benefit from our trade secrets for certain products and processes.

Patent protection extends for varying periods according to the date of patent filing or grant and the legal term of a patent in the various countries where patent protection is obtained. The actual protection afforded by a patent, which can vary from country to country, depends upon the type of patent, the scope of its coverage and the availability of legal remedies. Although we consider that, in the aggregate, our patents, licenses and trade secrets constitute a valuable asset of material importance to our business, we do not believe we are materially dependent upon any single patent or trade secret, or any group of related patents or trade secrets.

Certain of our trademarks, including without limitation, , Armstrong®, 24/7 Defend™, ACOUSTIBuilt®, AirAssure®, Airtite®, Arktura®, Calla®, Cirrus®, Cortega®, DESIGNFlex®, Dune™, Feltworks®, Humiguard®, Infusions®, InvisAcoustics™, Kanopi™, Lyra®, MetalWorks™, Moz™, Optima®, Plasterform™, Soundscapes®, Sustain®, Tectum®, Total Acoustics®, Turf®, Ultima®, and WoodWorks®, are important to our business because of their significant brand name recognition. Registrations are generally for fixed, but renewable, terms.

In connection with the separation and distribution of our former flooring business into a separate publicly-traded company, Armstrong Flooring, Inc. (“AFI”), in 2016, we entered into several agreements with AFI that, together with a plan of division, provided for the separation and allocation of assets between AWI and AFI. These agreements include a Trademark License Agreement and a Transition Trademark License Agreement. Pursuant to the Trademark License Agreement, AWI provided AFI with a perpetual, royalty-free license to utilize the “Armstrong” trade name and logo. Pursuant to the Transition Trademark License Agreement, AFI provided us with a royalty-free license to utilize the “Inspiring Great Spaces” tagline, logo and related color scheme, which expired December 31, 2022. Further, in 2022, as part of the AFI bankruptcy and with AWI consent, all rights, obligations and protections that existed as part of the arrangement with AFI were transferred to AHF Products in North America, Zhejiang GIMIG Tech Co., Ltd. in China, and to Braeside Mills Investments Pty Ltd in Australia/New Zealand. None of these transactions had or are expected to have any material impact on the integrity of the Armstrong trademark.

In connection with the closing of the Sale of our businesses and operations in EMEA and Pacific Rim to Knauf, we entered into a royalty-free intellectual property License Agreement with Knauf for its benefit (and, under sublicense, to the buyers of certain businesses divested by Knauf) under which they license certain patents, trademarks and know-how from us for use in certain licensed territories.

We review the carrying value of indefinite-lived trademarks at least annually for potential impairment. See the “Critical Accounting Estimates” section of Management’s Discussion and Analysis of Financial Condition and Results of Operations in Item 7 of this Form 10-K for further information.

## **Sustainability and Environmental Matters**

As a leading building products manufacturer, we are committed to operating sustainably across all areas of our business. This commitment is reflected in our ongoing initiatives to design and develop sustainable ceiling and wall products and solutions for every indoor space. Our sustainability focus reflects our mission to make a difference in the lives of people where they live, work, learn, heal and play. Our approach to sustainability is designed to support our strategic priorities, align with stakeholder interests, and be visible and measurable.

Our sustainability program is organized around three program “pillars”: People, Planet and Product.

Under the People pillar, we are broadly focused on creating a safe working environment for our employees, increasing our engagement in the communities where we operate, evaluating our benefits and compensation structure for all levels of the organization, promoting and maintaining a diverse, talented and growing workforce, and encouraging and protecting human rights.

Our Planet pillar broadly focuses on reducing our greenhouse gas footprint, reducing or reclaiming water in our operations, and reducing waste in our operations. These efforts include our ceilings recycling program, which diverts reclaimed ceiling tiles from landfills, and reducing our environmental operating footprint. Additionally, we are committed to complying with all environmental laws and regulations that are applicable to our operations.

Under the Product pillar, we are broadly focused on ensuring our products are free of chemicals of concern, reducing our products’ water and greenhouse gas footprint, improving the circularity of our products so they can be recycled, reused or repurposed, and

continuing to invest in solutions that meet customer demand for building products that align with their sustainability goals. We expect that there will be increased demand over time for products, systems and services that meet evolving regulatory and customer sustainability standards and preferences and decreased demand for products that produce significant greenhouse gas emissions. We also believe that our ability to continue to provide these products, systems and services to our customers, including through our Sustain® portfolio, will be necessary to maintain our competitive position in the marketplace.

The adoption of environmentally responsible building codes and standards such as the Leadership in Energy and Environmental Design (“LEED”) rating system established by the U.S. Green Building Council, has the potential to increase demand for products, systems and services that contribute to building sustainable spaces. Many of our products meet the requirements for the award of LEED credits, and we are continuing to develop new products, systems and services to address market demand for products that enable construction of buildings that require fewer natural resources to build, operate and maintain. Our competitors also have developed and introduced to the market products with an increased focus on sustainability.

In 2022, we published our second Sustainability Report, which reaffirms and measures our progress towards achieving our 2030 sustainability goals. We expect to update our progress regularly. The report is available in the "Sustainability" section of our website, which is listed below. Information in the 2022 Sustainability Report or the Company's website is not incorporated herein by reference.

### **Human Capital**

*Workforce Demographics.* As of December 31, 2022 and 2021, we had approximately 3,000 and 2,800 full time and part time employees, respectively. During 2022, our total voluntary and involuntary turnover rates were approximately 12% and 2%, respectively, for non-production employees and 20% and 5%, respectively, for production employees.

As of December 31, 2022, approximately 55% of our approximately 1,400 production employees in the U.S. were represented by labor unions. Collective bargaining agreements covering approximately 200 employees at one U.S. plant will expire during 2023. We believe that our relations with our employees are constructive and positive.

*Employee Health and Safety.* Safety is a core value at AWI and our culture is committed to making safety a personal core value for every employee. Our overall goal is to eliminate workplace injuries. We promote and foster an environment of empowerment and sharing throughout the company at all levels and in all locations. We engage our employees on safety with a focus on risk identification and elimination and through tracking various leading indicators. We track Occupational Safety and Health Administration (“OSHA”) recordable injuries and lost time rates by location monthly. We establish safety targets annually, which are tracked and reported to leadership monthly and reviewed with our Board of Directors.

We offer competitive health and wellness benefits to eligible employees and periodically conduct analyses of plan utilization to further tailor our employee benefits to meet their ongoing needs. In response to COVID-19, we continue to follow guidelines from governmental and health authorities.

*Diversity and Inclusion.* We continue to take steps to champion diversity and inclusion within our organization, as we believe it is a key to our continued success. This commitment is reflected in the goals of the People Pillar of our Sustainability program, which is being led by our Vice President of Talent Sustainability. We routinely measure gender and racial/ethnic representation and are focusing on increasing diversity within the company through new hires and development and advancement of existing talent. In addition, we are committed to engaging in events and outreach that support enhanced diversity and inclusion. Our strategy to grow our diversity over time includes (1) providing annual training to employees on diversity and inclusion topics, (2) demonstrating year-over-year improvement in the diversity of our organization measured by representation of female, minorities and veterans at every level of the organization, and (3) providing employees an opportunity to share their views on topics that matter to them. To support this strategy, we take an active approach to attracting, retaining, and engaging diverse talent through internships, employee resource groups, professional development programs and employee feedback. As of December 31, 2022 and 2021, our executive leadership team, defined as the chief executive officer and direct reports to the chief executive officer, included 43% gender diversity and 14% racial/ethnic diversity.

### **Product Innovation**

Product innovation activities are important and necessary in helping us improve our products’ competitiveness. Principal product innovation functions include the development and improvement of products and manufacturing processes.

## **Legal and Regulatory Proceedings**

Regulatory activities of particular importance to our operations include proceedings under the Comprehensive Environmental Response, Compensation and Liability Act (“CERCLA”), and state Superfund and similar type environmental laws governing existing or potential environmental contamination at two domestically owned locations allegedly resulting from past industrial activity. We are one of several potentially responsible parties in these matters and have agreed to jointly fund the required investigation, while preserving our defenses to the liability. We may also have rights of contribution or reimbursement from other parties or coverage under applicable insurance policies.

Most of our facilities are affected by various federal, state and local environmental requirements relating to the discharge of materials or the protection of the environment. We make expenditures necessary for compliance with applicable environmental requirements at each of our operating facilities. We have not experienced a material adverse effect upon our capital expenditures or competitive position as a result of environmental control legislation and regulations.

From time to time, we are involved in various other lawsuits, claims, investigations and other legal matters that arise in the ordinary course of business, including matters involving our products, intellectual property, relationships with suppliers, relationships with distributors, relationships with competitors, employees and other matters. In connection with those matters, we may have rights of contribution or reimbursement from other parties or coverage under applicable insurance policies. When applicable and appropriate, we will pursue coverage and recoveries under those policies, but are unable to predict the outcome of those demands. While complete assurance cannot be given to the outcome of any proceedings relating to these matters, we do not believe that any current claims, individually or in the aggregate, will have a material adverse effect on our financial condition, liquidity or results of operations.

Liabilities of \$0.5 million and \$0.7 million as of December 31, 2022 and 2021, respectively, were recorded for environmental liabilities that we consider probable and for which a reasonable estimate of the probable liability could be made. See Note 27 to the Consolidated Financial Statements and Risk Factors in Item 1A of this Form 10-K, for information regarding the possible effects that compliance with environmental laws and regulations may have on our businesses and operating results.

## **Website**

We maintain a website at <http://www.armstrongceilings.com>. Information contained on our website is not incorporated into this document. Annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, all amendments to those reports and other information about us are available free of charge through this website as soon as reasonably practicable after the reports are electronically filed with the SEC. We also file annual, quarterly and current reports, proxy statements and other information with the SEC. The SEC maintains a website that contains reports, proxy and information statements, and other information regarding issuers, including us, that file electronically with the SEC at <http://sec.gov>. Reference in this Form 10-K to our website and the SEC’s website is an inactive text reference only.

## **ITEM 1A. RISK FACTORS**

### **Risks Related to Our Operations**

***Sales fluctuations and changes in our relationships with key customers could have an adverse effect on our financial condition, liquidity or results of operations.***

The loss, reduction, or fluctuation of sales to key customers, including independent distributors or national home center customers, or any adverse change in our business relationship with them, whether as a result of changing customer demands and expectations, reduced demand, supply chain constraints, competition, industry consolidation or otherwise, could have a material adverse effect on our financial condition, liquidity or results of operations.

***If the availability of our manufacturing inputs or sourced products decreases, or the cost of those inputs or sourced products increases, and we are unable to pass along increased costs resulting from supply chain or inflationary pressures, our financial condition, liquidity or results of operations could be adversely affected.***

The availability and cost of raw materials, packaging materials, energy and sourced products are critical to our operations and our results of operations. For example, we use substantial quantities of natural gas and some petroleum-based raw materials in our manufacturing operations. We source some materials from a limited number of suppliers, which, among other things, increases the risk of unavailability. Limited availability could require us to reformulate products or limit our production. Supply chain disruptions could decrease access to manufacturing inputs or sourced products or significantly increase the cost to purchase these items. The cost of some inputs has been volatile in recent years and availability has been limited at times due to a number of factors, most notably the

impact of the COVID-19 pandemic and subsequent recovery, in addition to the impact of global events, including the conflict in Ukraine. A decrease in availability or increases in costs of manufacturing inputs or sourced products, and any inability to pass along such costs through price increases, could have a material adverse effect on our financial condition, liquidity or results of operations.

***The performance of our WAVE joint venture is important to our financial results. Changes in the demand for, or quality of, WAVE products, or in the operational or financial performance of the WAVE joint venture, could have an adverse effect on our financial condition, liquidity or results of operations. Similarly, if there is a change with respect to our joint venture partner that adversely impacts its relationship with us, WAVE's performance could be adversely impacted.***

Our equity investment in our WAVE joint venture remains important to our financial results. WAVE's markets are highly competitive and changes in the demand for, or quality of, WAVE products, or in the operational or financial performance of the WAVE joint venture, could have a material adverse effect on its financial condition, liquidity or results of operations. Similarly, the availability and cost of raw materials, packaging materials, energy and sourced products, and the ability to pass along increased costs, are critical to WAVE's operations and its results of operations.

We believe the relationship with our partner, Worthington, is an important element in the success of this joint venture. In September 2022, Worthington announced a plan to separate into two independent, publicly-traded companies (the "Worthington Separation"). One company is expected to be comprised of Worthington's Steel Processing operating segment, and the other company, which will include Worthington's investment in WAVE, is expected to be comprised of Worthington's Consumer Products, Building Products and Sustainable Energy Solutions operating segments. The Worthington Separation transaction is expected to be completed by early 2024, but is subject to certain conditions, including, among other things, general market conditions, finalization of the capital structure of the two companies, completion of steps necessary to qualify the separation as a tax-free transaction, receipt of regulatory approvals and final approval from the Worthington's board of directors. If the Worthington Separation or any other change in ownership, change of control, change in management or management philosophy, change in business strategy or another change with respect to our partner adversely impacts our relationship, WAVE's performance could be adversely impacted. In addition, our partner may develop economic or business interests or goals that are different from or inconsistent with our interests or goals, which may impact our ability to influence or align WAVE's strategy and operations with our interests or goals.

***Increased labor costs, labor disputes, work stoppages or union organizing activity, as well as increased labor shortages, or an inability to attract and retain talented employees could delay or impede production and could have an adverse effect on our financial condition, liquidity or results of operations.***

We rely on our employees to manufacture and sell our products. Labor disputes, which may result in work stoppages or union organizing activities, can directly impact production levels. As the majority of our manufacturing employees are represented by unions and covered by collective bargaining or similar agreements, we often incur costs attributable to periodic renegotiation of those agreements, which may be difficult to project. Collective bargaining agreements covering approximately 200 employees at one U.S. plant will expire during 2023. We are also subject to the risk that strikes or other conflicts with organized personnel may arise or that we may become the subject of union organizing activity at our facilities that do not currently have union representation. Prolonged negotiations, conflicts or related activities could also lead to costly work stoppages and loss of productivity. Our overall labor costs, which includes costs of the activities described above and employee benefit plans, directly impact our business and financial results.

Our success is also dependent upon our ability to attract and retain a qualified and diverse workforce. In many cases, we rely upon our employees' high degree of technical knowledge and industry experience. There can be no assurance that we will continue to attract and retain talented employees, particularly during times of increased labor costs or labor shortages. An inability to attract and retain a sufficient number of employees could adversely impact our business, financial condition or results of operations.

***We continuously pursue productivity initiatives and periodically engage in cost-saving initiatives. Our inability to execute these initiatives may result in lower-than-expected savings in our operating cost structure or may not improve our operating results.***

We aggressively seek ways to make our operations more efficient and effective. We may reduce, move, modify or expand our plants and operations, as well as our sourcing and supply chain arrangements, and invest in technology, as needed, to control costs and improve productivity. Such actions involve substantial planning, often require capital investments and may result in charges for fixed asset impairments or obsolescence and substantial severance costs. Our ability to achieve cost savings and other benefits within expected time frames is subject to many estimates and assumptions. These estimates and assumptions are subject to significant economic, competitive and other uncertainties, some of which are beyond our control. If these estimates and assumptions are incorrect, if we experience delays resulting from equipment failures or other interruptions in production, or if other unforeseen events occur, our financial condition, liquidity or results of operations could be materially and adversely affected.

***Our pursuit of environmental, social and governance ("ESG") and sustainability objectives, including those related to climate change, may not achieve the anticipated benefits we expect or may not align with new regulations or expectations of stakeholders, including investors, which could have an adverse effect on our business, financial condition or results of operations.***

In recent years, governmental and societal attention on ESG topics has increased. These ESG topics include greenhouse gas emissions and climate-related risks, renewable energy, water stewardship, waste management, diversity, equity and inclusion, responsible sourcing and supply chain, human rights, and social responsibility. Evolving government and societal expectations around these issues and our efforts to manage and report on them, as well as accomplish our ESG goals present numerous operational, regulatory, reputational, financial, legal, and other risks, any of which could have a material adverse impact.

In November 2022, we published our second Sustainability Report, which includes certain 2030 ESG and sustainability goals and our progress towards meeting those goals. We may not achieve the anticipated benefits we expect from these or other ESG and sustainability goals, which may damage our reputation, or these efforts may not align with new regulations or expectations of stakeholders. Efforts to achieve these goals may result in higher or unforeseen costs. In addition, we may encounter challenges measuring our progress towards the achievement of our ESG goals.

In recent years, there has been an increased focus by governmental organizations on ESG and sustainability issues, which may result in new legislation and regulations that could negatively affect our business. New legislation and regulations in the United States and in the foreign countries in which we operate could impose restrictions, caps, taxes, or other controls on emissions of greenhouse gases, which could adversely affect our operations and financial results.

Further, domestic and foreign legislative or regulatory actions and changing customer policies relating to climate change, such as new environmentally responsible building codes and standards, could adversely impact our business by increasing our energy costs and/or reducing fuel efficiency which could result in the creation of substantial additional capital expenditures and operating costs in the form of taxes, emissions allowances, or required equipment upgrades or require that we modify our products or processes in a manner that increases our costs and/or reduces our profitability. Any of the foregoing factors could impair our operating efficiency and productivity and result in higher operating costs.

### **Risks Related to Our Strategy**

***We may not experience the anticipated benefits from our strategic initiatives, including investments in digitalization, Healthy Spaces and innovation.***

We continue to evaluate and may pursue strategic initiatives involving the development or utilization of new or innovative products, solutions and tools, including those related to Healthy Spaces, as well as the expansion of our digital capabilities. These initiatives are designed to grow revenue, improve profitability and increase shareholder value. Our results of operations and financial position could be materially and adversely affected if we are unable to successfully identify, execute and integrate these initiatives or if we are unable to complete these initiatives in a timely and efficient manner to realize competitive advantages and opportunities.

***We may pursue strategic transactions, including mergers, acquisitions, joint ventures, strategic alliances or other investments, which could create risks and present unforeseen integration obstacles or costs, any of which could have an adverse effect on our financial condition, liquidity or results of operations.***

We regularly evaluate potential mergers, acquisitions, joint ventures, strategic alliances or other investments that we believe could complement, enhance or expand our current businesses or product lines or that might otherwise offer us growth opportunities, particularly in our Architectural Specialties segment for which we have completed four acquisitions since July 2020. Any such strategic transaction involves a number of risks, including potential disruption of our ongoing business and distraction of management, difficulty with integrating or separating personnel and business operations and infrastructure, and increasing or decreasing the scope, geographic diversity and complexity of our operations. Strategic transactions could involve payment by us of a substantial amount of cash, assumption of liabilities and indemnification obligations, regulatory requirements, incurrence of a substantial amount of debt or issuance of a substantial amount of equity. Certain strategic opportunities may not result in the consummation of a transaction or may fail to realize the intended benefits and synergies. If we fail to identify, consummate and integrate our strategic transactions in a timely and cost-effective manner, our financial condition, liquidity or results of operations could be materially and adversely affected.

### **Risks Related to Financial Matters**

***Negative tax consequences can have an unanticipated effect on our financial results.***

We are subject to the tax laws of the many jurisdictions in which we operate. The tax laws are complex, and the manner in which they apply to our operations and results is sometimes open to interpretation. Our income tax expense (benefit) and reported net income



(loss) may fluctuate significantly, and may be materially different than forecasted or experienced in the past. Our financial condition, liquidity or results of operations could be adversely affected by changes in effective tax rates, changes in our overall profitability, changes in tax legislation, the results of examinations of previously filed tax returns, and ongoing assessments of our tax exposures.

Our financial condition, liquidity or results of operations could also be adversely affected by changes in the valuation of deferred tax assets and liabilities. We have substantial deferred tax assets related to capital loss carryforwards and state net operating losses (“NOLs”), which are available to reduce our U.S. income tax liability and to offset future state taxable income. However, our ability to utilize the current carrying value of these deferred tax assets may be impacted as a result of certain future events, such as changes in tax legislation and insufficient future taxable income prior to expiration of the capital loss carryforwards and NOLs.

***Our indebtedness may adversely affect our ability to operate and invest in our business, execute on our strategic initiatives, and return cash to shareholders.***

Our level of indebtedness and degree of leverage could:

- limit our flexibility in planning for, or reacting to, changes in our business and the industry in which we operate;
- make us more vulnerable to adverse changes in general economic, industry and competitive conditions and adverse changes in government regulation;
- place us at a competitive disadvantage compared to our competitors that are less leveraged and, therefore, more able to take advantage of opportunities that our leverage prevents us from pursuing;
- limit our ability to refinance existing indebtedness or borrow additional amounts for working capital, capital expenditures, acquisitions, debt service requirements, execution of our business strategy or other purposes;
- restrict our ability to pay dividends on or repurchase our capital stock;
- make it more difficult for us to satisfy our obligations with respect to our indebtedness; and
- adversely affect our credit ratings, if any.

We may also incur additional indebtedness, which could exacerbate the risks described above. We cannot guarantee future access to capital markets, which may limit our ability to obtain new debt financing or refinance existing debt obligations. In addition, to the extent that our indebtedness bears interest at floating rates, our sensitivity to interest rate fluctuations will increase. In the past year, the U.S. Federal Reserve increased its benchmark federal funds rate 425 basis points due to inflationary pressures driven primarily by the COVID-19 pandemic and ongoing recovery. This has resulted in an increase in market interest rates, including the interest rates associated with our indebtedness. Interest rates may continue to increase in the future depending on actions by the U.S. Federal Reserve and overall inflation.

Any of the above-listed factors could have a material adverse effect on our financial condition, liquidity or results of operations.

***We require a significant amount of liquidity to fund our operations and our indebtedness exposes us to materially negative unforeseen events.***

Our liquidity needs vary throughout the year. If our business experiences materially negative unforeseen events, we may be unable to generate sufficient cash flow from operations to fund our needs or maintain sufficient liquidity to operate and remain in compliance with our debt covenants, which could result in reduced or delayed planned capital expenditures and other investments and have a material adverse effect on our financial condition or results of operations.

***The agreements that govern our indebtedness contain a number of covenants that impose significant operating and financial restrictions, including restrictions on our ability to engage in activities that may be in our best long-term interests.***

The agreements that govern our indebtedness include covenants that may restrict our ability to:

- incur additional debt;
- pay dividends on or make other distributions in respect of our capital stock or redeem, repurchase or retire our capital stock or make certain other restricted payments;
- make certain acquisitions;
- sell certain assets;
- consolidate, merge, sell or otherwise dispose of all or substantially all of our assets; and

- create liens on certain assets to secure debt.

Under the terms of our senior secured credit facility, we are required to maintain specified leverage and interest coverage ratios. Our ability to meet these ratios could be affected by events beyond our control, and we cannot assure that we will meet them. A breach of any of the restrictive covenants or ratios would result in a default under the senior secured credit facility. If any such default occurs, the lenders under the senior secured credit facility may be able to elect to declare all outstanding borrowings under our facility, together with accrued interest and other fees, to be immediately due and payable, or enforce their security interest. The lenders may also have the right in these circumstances to terminate commitments to provide further borrowings.

***Significant changes in factors and assumptions used to measure our defined benefit plan obligations, actual investment returns on pension assets and other factors could negatively impact our operating results and cash flows.***

We maintain pension and postretirement plans in the U.S. The recognition of costs and liabilities associated with these plans for financial reporting purposes is affected by assumptions made by management and used by actuaries engaged by us to calculate the benefit obligations and the expenses recognized for these plans.

The inputs used in developing the required estimates are calculated using multiple assumptions and represent management's best estimate of the future. The assumptions that have the most significant impact on reported results are the discount rate, the estimated long-term return on plan assets for the funded plans, retirement rates, and mortality rates and, for postretirement plans, the estimated inflation in health care costs. These assumptions are generally updated annually.

In the aggregate, our U.S. pension plans were overfunded by \$54.6 million as of December 31, 2022. Our unfunded U.S. postretirement plan liabilities were \$61.9 million as of December 31, 2022. If our cash flows and capital resources are insufficient to fund our pension and postretirement plans obligations, we could be forced to reduce or delay investments and capital expenditures, seek additional capital, or restructure or refinance our indebtedness.

**Risks Related to Legal and Regulatory Matters**

***We may be subject to liability under, and may make substantial future expenditures to comply with, environmental laws and regulations, which could have an adverse effect on our financial condition, liquidity or results of operations.***

We are actively involved in environmental investigation and remediation activities relating to two domestically owned locations allegedly resulting from past industrial activity, for which our ultimate liability may exceed the currently estimated and accrued amounts. See Note 27 to the Consolidated Financial Statements for further information related to our current environmental matters and the potential liabilities associated therewith. It is also possible that we could become subject to additional environmental matters and corresponding liabilities in the future.

The building materials industry has been subject to claims relating to raw materials such as silicates, polychlorinated biphenyl ("PCB"), polyvinyl chloride ("PVC"), formaldehyde, fire-retardants and claims relating to other issues such as mold and toxic fumes, as well as claims for incidents of catastrophic loss, such as building fires. We have not received any significant claims involving our raw materials or our product performance; however, product liability insurance coverage may not be available at commercially acceptable premium levels or at all, or such coverage may not be adequate in all circumstances to cover claims that may arise in the future.

In addition, our operations are subject to various environmental, health, and safety laws and regulations. These laws and regulations not only govern our current operations and products, but may also impose potential liability on us for our past operations and past operations at sites on which we operate. Our costs to comply with these laws and regulations may increase as these requirements become more stringent in the future.

***Potential regulatory actions, product and service claims, environmental claims and other litigation could be costly and have an adverse effect on our financial condition, liquidity or results of operations. Insurance coverage may not be available or adequate in all circumstances.***

In the ordinary course of business, we are subject to various claims and litigation. Any such claims, whether with or without merit, could be time-consuming and expensive to defend and could divert management's attention and resources. While we strive to ensure that our products and services comply with applicable government regulatory standards and internal requirements, and that our products and services perform effectively and safely, customers from time to time could claim that our products and services do not meet warranty or contractual requirements, and users could claim to be harmed by use or misuse of our products and services. These claims could give rise to breach of contract, warranty or recall claims, or claims for negligence, product liability, strict liability, personal injury or property damage. They could also result in negative publicity.

In addition, claims and investigations may arise related to patent infringement, distributor relationships, commercial contracts, antitrust or competition law requirements, employment matters, employee benefits issues, and other compliance and regulatory matters, including anti-corruption and anti-bribery matters. While we have processes and policies designed to mitigate these risks and to investigate and address such claims as they arise, we cannot predict or, in some cases, control the costs to defend or resolve such claims.

We currently maintain insurance against some, but not all, of these potential claims. In the future, we may not be able to maintain insurance at commercially acceptable premium levels. In addition, the levels of insurance we maintain may not be adequate to fully cover any and all losses or liabilities. If any significant judgment or claim is not fully insured or indemnified against, it could have a material adverse effect on our financial condition, liquidity or results of operations.

***Our intellectual property rights may not provide meaningful commercial protection for our products or brands, which could adversely impact our financial condition, liquidity or results of operations.***

We rely on our proprietary intellectual property, including numerous patents and registered trademarks, as well as our licensed intellectual property to market, promote and sell our products. We monitor and protect against activities that might infringe, dilute, or otherwise harm our patents, trademarks and other intellectual property and rely on the patent, trademark and other laws of the U.S. and other countries. However, we may be unable to prevent third parties from using our intellectual property without our authorization. In addition, the laws of some non-U.S. jurisdictions, particularly those of certain emerging markets, provide less protection for our proprietary rights than the laws of the U.S. and present greater risks of counterfeiting and other infringement. To the extent we cannot protect our intellectual property, unauthorized use and misuse of our intellectual property could harm our competitive position and have a material adverse effect on our financial condition, liquidity or results of operations.

***We are subject to risks associated with our international operations in Canada and Latin America. Legislative, political, regulatory and economic volatility, as well as vulnerability to infrastructure and labor disruptions, could have an adverse effect on our financial condition, liquidity or results of operations.***

A portion of our sales are generated through international trade. These sales are subject to currency exchange fluctuations, trade regulations, import duties, logistics costs, delays and other related risks. Our international operations are also subject to various tax rates, credit risks in emerging markets, political risks, uncertain legal systems, and loss of sales to local competitors following currency devaluations in countries where we import products for sale. In addition, a part of our growth strategy depends on our ability to expand our operations in Canada and Latin America, including emerging markets that have greater political and economic volatility and greater vulnerability to infrastructure and labor disruptions than established markets.

In addition, in countries outside of the United States, particularly in those with developing economies, it may be common for others to engage in business practices prohibited by laws and regulations applicable to us, such as the Foreign Corrupt Practices Act or similar local anti-corruption or anti-bribery laws. These laws generally prohibit companies and their employees, contractors or agents from making improper payments to government officials for the purpose of obtaining or retaining business. Failure to comply with these laws, as well as U.S. and foreign export and trading laws, could subject us to civil and criminal penalties. As we continue to expand our business, we may have difficulty anticipating and effectively managing these and other risks that our operations may face, which may adversely affect our business outside the United States and our financial condition, liquidity or results of operations.

### **Risks Related to General Economic and Other Factors**

***Unstable market and economic conditions could have an adverse impact on our financial condition, liquidity or results of operations.***

Our business is influenced by market and economic conditions, including inflation, deflation, interest rates, availability and cost of capital, consumer spending rates, energy availability and the effects of government stimulus. Volatility in financial markets and the continued softness or further deterioration of national and global economic conditions could have a material adverse effect on our financial condition, liquidity or results of operations, including as follows:

- the financial stability of our customers or suppliers may be compromised, which could result in additional bad debts for us or non-performance by suppliers;
- consumers of our products may postpone spending in response to tighter credit, negative financial news and/or stagnation or further declines in income or asset values, which could have a material adverse impact on the demand for our products;
- the value of investments underlying our defined benefit pension plan may decline, which could result in negative plan investment performance and additional charges which may involve significant cash contributions to the plan in order to meet obligations or regulatory requirements; and

- our asset impairment assessments and underlying valuation assumptions may change, which could result from changes to estimates of future sales and cash flows that may lead to substantial impairment charges.

Continued or sustained deterioration of economic conditions would likely exacerbate and prolong these adverse effects.

***Our business is dependent on construction activity in North America. Downturns or delays in construction activity could have an adverse effect on our financial condition, liquidity or results of operations.***

Our business has greater sales opportunities when construction activity, including both new building construction and renovation of existing buildings, is strong and, conversely, has fewer opportunities when such activity declines. The cyclical nature of construction activity, including construction activity funded by the public sector, tends to be influenced by prevailing economic conditions, including the rate of growth in gross domestic product, prevailing interest rates, government spending patterns, business, investor and consumer confidence, inflation, availability of labor, adequately functioning supply chains and other factors beyond our control. Our revenue opportunities come from new construction as well as renovation of existing buildings. Most of our revenue comes from the following sectors of commercial construction – office, education, transportation, healthcare and retail. Commercial construction activity for these sectors can be influenced by the changing needs for spaces, including potential declines in demand for office space as a result of sustained remote or hybrid work models. Prolonged downturns or delays in construction activity could have a material adverse effect on our financial condition, liquidity or results of operations.

***Our markets are highly competitive. Competition could reduce demand for our products or negatively affect our sales mix or price realization. Failure to compete effectively by meeting consumer preferences, developing and marketing innovative solutions, maintaining strong customer service and distribution relationships, and expanding our solutions capabilities and reach could adversely affect our results.***

Our customers consider product performance attributes, product styling, customer service and price when deciding whether to purchase our products. Shifting consumer preference in our highly competitive markets, from acoustical solutions to other ceiling and wall products, for example, whether for performance attributes, such as acoustics and sustainability, and health attributes, or styling preferences or our inability to develop and offer new competitive performance features could have an adverse effect on our sales. Similarly, our ability to identify, protect and market new and innovative solutions is critical to our long-term growth strategy, namely to sell into more spaces and sell more solutions in every space. If our competitors offer discounts on certain products or provide new or alternative offerings that the marketplace perceives as more cost-effective, it could adversely affect our price realization. Any broad-based change to our price realization could materially impact our financial condition, liquidity or results of operations.

***Customer consolidation, and competitive, economic and other pressures facing our customers, and our potential failure to attract new customers in our markets, may negatively impact our operating margins and profitability.***

A number of our customers, including distributors and contractors, have consolidated in recent years and consolidation could continue. Further consolidation could impact margin growth and profitability as larger customers may realize certain operational and other benefits of scale. The economic and competitive landscape for our customers is constantly changing, and our customers' responses to those changes could impact our business. The demand for our products can also be impacted by the buying patterns of certain customers and how they manage their inventory levels. These factors could have a material adverse impact on our business, financial condition or results of operations.

***Our operating and information systems may experience a failure, a compromise of security, or a violation of data privacy laws or regulations, which could interrupt or damage our operations.***

In the conduct of our business, we collect, use, transmit and store data on information systems, which are vulnerable to disruption and an increasing threat of continually evolving cybersecurity risks. These information systems may be disrupted or fail as a result of events that are wholly or partially beyond our control, including events such as power loss, software or hardware defects, or hacking, computer viruses, malware, ransomware or other cyber-attacks. All of these risks are also applicable where we rely on outside vendors to provide services, which may operate in a cloud environment. We are dependent on third-party vendors to operate secure and reliable systems which may include data transfers over the internet. Any events which deny us use of vital operating or information systems may seriously disrupt our normal business operations.

We also compete through our use of information technology. We strive to provide customers with timely, accurate, easy-to-access information about product availability, orders and delivery status using state-of-the-art systems. While we have processes for short-term failures and disaster recovery capability, a prolonged disruption of system or other failures in the reliability of our systems may have a material adverse effect on our operating results.

We could also experience a disruption of service or a compromise of our information security due to technical system flaws, clerical, data input or record-keeping errors, migration to new systems, or tampering or manipulation of our systems by employees or unauthorized third parties. Information security risks also exist with respect to the use of portable electronic devices, such as laptops

and smartphones, which are particularly vulnerable to loss and theft. Any security breach or compromise of our information systems could significantly damage our reputation, cause the disclosure of confidential customer, employee, supplier or company information, including our intellectual property, and result in significant losses, litigation, fines and costs. The security measures we have implemented to protect against unauthorized access to our information systems and data may not be sufficient to prevent breaches. The regulatory environment related to information security, data collection and privacy is evolving, with new and constantly changing requirements applicable to our business, and compliance with those requirements could result in additional costs.

Additionally, our key partners, distributors or suppliers could experience a compromise of their information security due to technical system flaws, clerical, data input or record-keeping errors, or tampering or manipulation of their respective systems by employees or third parties, which may have an impact on our commercial sales, vendor, partner or other relationships.

***Our business is dependent upon third-party vendors and suppliers whose failure to perform adequately could have an adverse effect on our financial condition, liquidity or results of operations.***

We source a significant portion of raw materials and sourced products from third parties. Our ability to select and retain reliable vendors and suppliers who provide timely deliveries of quality raw materials and sourced products will impact our success in meeting customer demand for timely delivery of quality products.

The ability of third-party suppliers to timely deliver raw materials and sourced products may be affected by events beyond their control, such as inability of shippers to timely deliver merchandise due to work stoppages or slowdowns, demand volatility or port congestion, unavailability of shipping containers or other equipment, or significant weather and health conditions affecting manufacturers and/or shippers. Any adverse change in our relationships with our third-party suppliers, the financial condition of third-party suppliers, the ability of third-party suppliers to manufacture and deliver outsourced raw materials or sourced products on a timely basis could have a material adverse effect on our business, financial condition or results of operations.

In addition, the financial condition of our vendors and suppliers may be adversely affected by general economic conditions, such as credit difficulties and the uncertain macroeconomic environment. Any inability of our vendors and suppliers to timely deliver quality raw materials and sourced products or any unanticipated change in supply, quality or pricing of products could have a material adverse effect on our business, financial condition or results of operations.

***The geographic concentration of our business could subject us to risks, including those associated with climate change, that may be greater than our competitors and could have an adverse effect on our financial condition, liquidity or results of operations.***

We primarily operate in the United States, Canada and Latin America. Our concentrated operations in the Americas could subject us to a greater degree of risk relative to our global, diversified competitors. We are particularly vulnerable to adverse events (including acts of terrorism, natural disasters, weather conditions, labor market disruptions and government actions) and economic conditions in the United States, Canada and Latin America. Adverse events or conditions in these geographic areas could have a material adverse effect on our financial condition, liquidity or results of operations.

Climate change and related extreme weather events in these geographic areas could result in:

- impacts to our operations if one of our facilities is affected by such an event;
- impacts to our customers through changes in construction activity in the markets in which we operate;
- impacts to our vendors and suppliers through decreased availability or increased costs of manufacturing inputs or sourced products;
- impacts to the broader supply chain through inability to ship and receive goods.

We may not be able to forecast the likelihood or severity of any of these impacts. Any of these could have a material adverse effect on our business, financial condition, or results of operations.

***We cannot provide any guarantees of future cash dividend payments or future repurchases of our common stock pursuant to a share repurchase program.***

Since December 2018, our Board of Directors has declared a quarterly dividend on our common stock. The payment of any future cash dividends to our shareholders is not guaranteed and will depend on decisions that will be made by our Board of Directors based upon our financial condition, results of operations, cash flows, business requirements and a determination that the declaration of cash dividends is in the best interest of our shareholders and is in compliance with all laws and agreements applicable to the payment of dividends.

Since July 2016, our Board of Directors has approved share repurchases up to a total of \$1,200.0 million. Repurchases under the program may be made through open market, block and privately negotiated transactions, including Rule 10b5-1 plans, at times and in amounts as management deems appropriate, subject to market and business conditions, regulatory requirements and other factors. The program does not obligate the company to repurchase any particular amount of common stock and may be suspended or discontinued at any time without notice. Furthermore, there can be no assurance that we will be able to repurchase our common stock and we may discontinue plans to repurchase common stock at any time.

***Public health epidemics or pandemics, such as the COVID-19 pandemic, could have an adverse effect on our financial condition, liquidity or results of operations.***

The COVID-19 pandemic has created significant volatility, uncertainty and economic disruption and there is no guarantee that markets will fully recover from the impacts caused by the pandemic. The extent to which COVID-19, or other public health pandemics, impacts our employees, operations, customers, suppliers and financial results will depend on numerous evolving factors that we may not be able to accurately predict, including: the duration and scope of the pandemic (and whether there is a resurgence or multiple resurgences in the future, including the impact of new variants); government actions taken in response to the pandemic, including required shutdowns; the availability, acceptance, distribution and continued effectiveness of vaccines; the impact on construction activity; supply chain disruptions; rising inflation; labor shortages; sustained remote or hybrid work models; our ability to manufacture and sell our products; and the ability of our customers to pay for our products. Any of these events could have a material adverse effect on our financial condition, liquidity or results of operations.

**ITEM 1B. UNRESOLVED STAFF COMMENTS**

None.

**ITEM 2. PROPERTIES**

We own a 100-acre, multi-building campus in Lancaster, Pennsylvania comprising the site of our corporate headquarters and most of our non-manufacturing operations.

As of December 31, 2022, we operated 17 manufacturing plants, including 15 plants located within the U.S. and two plants in Canada. This includes our St. Helens, Oregon mineral fiber manufacturing plant, which was closed in the second quarter of 2018. The facility was classified as an asset held for sale as of December 31, 2022.

WAVE operates seven additional plants in the U.S. to produce suspension system (grid) products, which we use and sell in our ceiling systems.

Nine of our plants are leased and the remaining eight are owned.

<u>Operating Segment</u>	<u>Number of Plants</u>	<u>Location of Principal Facilities</u>
Mineral Fiber	6	U.S. (Florida, Georgia, Ohio, Oregon, Pennsylvania and West Virginia)
Architectural Specialties	11	U.S. (California (3), Illinois (2), Missouri and Ohio (3)), Canada (Quebec and Ontario)

Sales and administrative offices are leased and/or owned, and leased facilities are utilized to supplement our owned warehousing facilities.

Production capacity and the extent of utilization of our facilities are difficult to quantify with certainty. In any one facility, utilization of our capacity varies periodically depending upon demand for the product that is being manufactured. We believe our facilities are adequate and suitable to support the business. Additional incremental investments in plant facilities are made as appropriate to balance capacity with anticipated demand, improve quality and service, and reduce costs.

**ITEM 3. LEGAL PROCEEDINGS**

See the “Specific Material Events” section of the “Environmental Matters” section of Note 27 to the Consolidated Financial Statements, which is incorporated herein by reference, for a description of our significant legal proceedings. We are party to various other lawsuits, claims, investigations and other legal matters that arise in the ordinary course of business, including matters involving our products, intellectual property, relationships with suppliers, relationships with distributors, other customers or end users,

relationships with competitors, employees and other matters. We do not believe that any such current claims, individually or in the aggregate, will have a material adverse effect on our financial condition, liquidity or results of operations. However, regardless of outcome, litigation and related matters can have an adverse impact on us due to defense and settlement costs, diversion of management resources, negative publicity, reputational harm and other factors.

**ITEM 4. MINE SAFETY DISCLOSURES**

Not applicable.

## PART II

### **ITEM 5. MARKET FOR THE REGISTRANT’S COMMON EQUITY, RELATED STOCKHOLDER MATTERS AND ISSUER PURCHASES OF EQUITY SECURITIES**

AWI’s common shares trade on the New York Stock Exchange under the ticker symbol “AWI.” As of February 15, 2023, there were 225 holders of record of AWI’s common stock.

Dividends are payable when declared by our Board of Directors and in accordance with restrictions set forth in our debt agreements. In general, our debt agreements allow us to make “restricted payments,” which include dividends and stock repurchases, subject to certain limitations and other restrictions and provided that we are in compliance with the financial and other covenants of our debt agreements and meet certain liquidity requirements after giving effect to the restricted payment. We declared dividends on a quarterly basis, totaling \$0.947 per share in 2022. On February 14, 2023, our Board of Directors declared a dividend of \$0.254 per common share outstanding. The dividend will be paid on March 16, 2023, to shareholders of record as of the close of business on March 2, 2023. For further discussion of the debt agreements, see the Financial Condition and Liquidity section of Management’s Discussion and Analysis of Financial Condition and Results of Operations in Item 7 and Risk Factors in Item 1A in this Form 10-K.

#### Issuer Purchases of Equity Securities

<u>Period</u>	<u>Total Number of Shares Purchased <sup>(1)</sup></u>	<u>Average Price Paid per Share</u>	<u>Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs</u>	<u>Maximum Approximate Value of Shares that may yet be Purchased under the Plans or Programs</u>
October 1 – 31, 2022	175,683	\$ 80.75	175,683	\$ 354,602,234
November 1 – 30, 2022	77,322	\$ 75.22	77,292	\$ 348,788,133
December 1 – 31, 2022	1,824	\$ 72.30	-	\$ 348,788,133
Total	<u>254,829</u>		<u>252,975</u>	

- (1) Includes shares reacquired through the withholding of shares to pay employee tax obligations upon the exercise of options or vesting of restricted shares previously granted under our long-term incentive plans. For more information regarding securities authorized for issuance under our equity compensation plans, see Note 22 to the Consolidated Financial Statements included in this Form 10-K.

On July 29, 2016, our Board of Directors approved our share repurchase program pursuant to which we are authorized to repurchase up to \$1,200.0 million of our outstanding shares of common stock through December 31, 2023 (the “Program”).

Repurchases under the Program may be made through open market, block and privately negotiated transactions, including Rule 10b5-1 plans, at such times and in such amounts as management deems appropriate, subject to market and business conditions, regulatory requirements and other factors. The Program does not obligate AWI to repurchase any particular amount of common stock and may be suspended or discontinued at any time without notice.

During 2022, we repurchased 1.9 million shares under the Program for a total cost of \$165.0 million, excluding commissions, or an average price of \$87.31 per share. Since inception, through December 31, 2022, we have repurchased 12.4 million shares under the Program for a total cost of \$851.2 million, excluding commissions, or an average price of \$68.66 per share.

### **ITEM 6. [RESERVED]**



## **ITEM 7. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS**

Armstrong World Industries, Inc. ("AWI") is a Pennsylvania corporation incorporated in 1891.

This discussion should be read in conjunction with the financial statements, the accompanying notes, the cautionary note regarding forward-looking statements and risk factors included in this Form 10-K.

### **Overview**

AWI is a leader in the design, innovation and manufacture of ceiling and wall solutions in the Americas. Our products primarily include mineral fiber, fiberglass wool, metal, wood, wood fiber, glass-reinforced-gypsum and felt. We also manufacture ceiling suspension system (grid) products through a joint venture with Worthington Industries, Inc. ("Worthington") called Worthington Armstrong Venture ("WAVE").

### **COVID-19**

The impact of the COVID-19 pandemic on our future consolidated results of operations remains uncertain. During 2020, we noted delays in construction driven by temporary closures of non-essential businesses, with the most significant impacts in certain major metropolitan areas impacted by COVID-19. Beginning in 2021, market conditions began to improve as the impact of the pandemic lessened. Throughout 2022, our results of operations continued to be impacted by delays in construction starts and extended project timelines, in addition to higher inflation, all of which were related, in part, to the pandemic and subsequent recovery. We continue to monitor and manage the impact of COVID-19 and its potential impacts to our business.

In an effort to operate safely and responsibly, we continue to follow guidelines from governmental health authorities across all our facilities. As of December 31, 2022, all of our manufacturing facilities were operational, excluding our St. Helens, Oregon facility which was idled in the second quarter of 2018.

We did not record any asset impairments, inventory charges or material bad debt reserves related to COVID-19 during 2022, 2021 or 2020, although future events may require such charges. We will continue to evaluate the nature and extent of the COVID-19 pandemic's impact on our financial condition, results of operations and cash flows.

### **Acquisitions**

In November 2022, we acquired the business and assets of GC Products, Inc. ("GC Products"), based in Lincoln, CA. GC Products is a designer and manufacturer of glass-reinforced-gypsum, glass-reinforced-cement, molded ceiling and specialty wall products with one manufacturing facility.

In December 2020, we acquired all issued and outstanding equity of Arktura LLC ("Arktura") and certain subsidiaries with operations in the United States and Argentina. Arktura is a designer and fabricator of metal and felt ceilings, walls, partitions and facades with one manufacturing facility based in Los Angeles, California.

In August 2020, we acquired the business and assets of Moz Designs, Inc. ("Moz"), based in Oakland, California. Moz is a designer and fabricator of custom architectural metal ceilings, walls, dividers and column covers for interior and exterior applications with one manufacturing facility.

In July 2020, we acquired all issued and outstanding capital stock of TURF Design, Inc. ("Turf"), with one manufacturing facility in Elgin, Illinois and a design center in Chicago, Illinois. Turf is a designer and manufacturer of acoustic felt ceilings and wall products.

The operations, assets and liabilities of these acquisitions are included in our Architectural Specialties segment.

### **Manufacturing Plants**

As of December 31, 2022, we operated 17 manufacturing plants, including 15 plants located within the U.S. and two plants in Canada. This includes our St. Helens, Oregon mineral fiber manufacturing plant, which was closed in the second quarter of 2018. The facility was classified as an asset held for sale as of December 31, 2022.

WAVE operates seven additional plants in the U.S. to produce suspension system (grid) products, which we use and sell in our ceiling systems.

## **Reportable Segments**

Our operating segments are as follows: Mineral Fiber, Architectural Specialties and Unallocated Corporate.

*Mineral Fiber* – produces suspended mineral fiber and soft fiber ceiling systems. Our mineral fiber products offer various performance attributes such as acoustical control, rated fire protection, aesthetic appeal, and health and sustainability features. Ceiling products are sold to resale distributors, ceiling systems contractors and wholesalers and retailers (including large home centers). The Mineral Fiber segment also includes the results of WAVE, which manufactures and sells suspension system (grid) products and ceiling component products that are invoiced by both AWI and WAVE. Segment results relating to WAVE consist primarily of equity earnings and reflect our 50% equity interest in the joint venture. Ceiling component products consist of ceiling perimeters and trim, in addition to grid products that support drywall ceiling systems. For some customers, WAVE sells its suspension systems products to AWI for resale to customers. Mineral Fiber segment results reflect those sales transactions. The Mineral Fiber segment also includes all assets and liabilities not specifically allocated to our Architectural Specialties or Unallocated Corporate segment, including all property and related depreciation associated with our Lancaster, PA headquarters. Operating results for the Mineral Fiber segment include a significant majority of allocated Corporate administrative expenses that represent a reasonable allocation of general services to support its operations.

*Architectural Specialties* – produces, designs and sources ceilings and walls for use in commercial settings. Products are available in numerous materials, such as metal, felt and wood, in addition to various colors, shapes and designs. Products offer various performance attributes such as acoustical control, rated fire protection and aesthetic appeal. We sell standard, premium and customized products, a portion of which are derived from sourced products. Architectural Specialties products are sold primarily to resale distributors and direct customers, primarily ceiling systems contractors. The majority of this segment's revenues are project driven, which can lead to more volatile sales patterns due to project scheduling uncertainty. Operating results for the Architectural Specialties segment include a portion of allocated Corporate administrative expenses that represent a reasonable allocation of general services to support its operations.

*Unallocated Corporate* – includes certain assets, liabilities, income and expenses that have not been allocated to our other business segments and consists of: cash and cash equivalents, the net funded status of our U.S. Retirement Income Plan (“RIP”), the estimated fair value of interest rate swap contracts, outstanding borrowings under our senior secured credit facility and income tax balances. Our Unallocated Corporate segment also includes all expenses related to our German defined benefit pension plan that was formerly reported in our Europe, Middle East and Africa (including Russia) (“EMEA”) and Pacific Rim segments and was not included in the sale of certain subsidiaries comprising our businesses and operations in EMEA and the Pacific Rim, including the corresponding businesses and operations conducted by WAVE (collectively, the “Sale”) to Knauf International GmbH (“Knauf”) in 2019.

## **Factors Affecting Revenues**

For information on our segments’ 2022 net sales by geography, see Note 3 to the Consolidated Financial Statements included in this Form 10-K. For information on our segments’ 2022 net sales disaggregated by major customer groups, see Note 4 to the Consolidated Financial Statements included in this Form 10-K.

*Markets.* We compete in the building product construction markets of the Americas. We closely monitor publicly available macroeconomic trends that provide insight into commercial construction market activity, including, but not limited to, GDP, office vacancy rates, the Architecture Billings Index, new commercial construction starts, state and local government spending, corporate profits and retail sales. The company continues to monitor the impacts of global events, including the conflict in Ukraine, which due to our Americas-only geography, had minimal direct impact on our results of operations in 2022.

We noted several factors and trends within our markets that directly affected our business performance during 2022 compared to 2021, most importantly the elongated economic recovery from the COVID-19 pandemic combined with on-going challenges to global supply chains and labor availability, as well as to the impact of higher inflation. During the second half of 2022, we experienced market demand weakening and further project delays. These impacts were most pronounced for our Mineral Fiber segment, while our results benefited from improved performance within our Architectural Specialties segment, primarily driven by our 2020 acquisitions. During 2022, increased sales volumes contributed \$33 million to revenue compared to 2021.

*Average Unit Value.* We periodically modify sales prices of our products due to changes in costs for raw materials and energy, market conditions and the competitive environment. Typically, realized price increases are less than announced price increases because of project pricing, competitive adjustments and changing market conditions. We also offer a wide assortment of products that are differentiated by style, design and performance attributes. Pricing and margins for products within the assortment vary. In addition, changes in the relative quantity of products purchased at different price points can impact year-to-year comparisons of net sales and operating income. Within our Mineral Fiber segment, we focus on improving sales dollars per unit sold, or average unit value (“AUV”), as a measure that accounts for the varying assortment of products and like-for-like pricing impacting our revenues. We

estimate that favorable AUV increased our total consolidated net sales for 2022 by approximately \$94 million compared to 2021. Our Architectural Specialties segment revenues are primarily earned based on individual contracts that include a mix of products, both manufactured by us and sourced from third parties, which varies by project. As such, we do not track AUV performance for this segment, but rather attribute most changes in sales to volume.

During each quarter of 2022, we implemented price increases on Mineral Fiber ceiling, grid products and certain Architectural Specialties products. In the fourth quarter of 2022, we also announced price increases on Mineral Fiber ceiling, grid products and certain Architectural Specialties products that became effective in the first quarter of 2023. We may implement future pricing actions based on numerous factors, namely the rate and pace of inflation impact on our business.

*Seasonality.* Historically, our sales have been stronger in the second and the third quarters of our fiscal year due to more favorable weather conditions, customer business cycles and the timing of renovation and new construction.

### **Factors Affecting Operating Costs**

*Operating Expenses.* Our operating expenses are comprised of direct production costs (principally raw materials, labor and energy), manufacturing overhead costs, freight, costs to purchase sourced products and selling, general, and administrative (“SG&A”) expenses.

Our largest raw material expenditures are primarily for fiberglass, perlite, recycled paper and starch. Other raw materials include aluminum, clays, felt, pigment, steel, wood and wood fiber. We manufacture most of our mineral wool needs at one of our manufacturing facilities. Natural gas and packaging materials are also significant input costs. Fluctuations in the prices of these inputs are generally beyond our control and have a direct impact on our financial results. Global supply chain and labor disruptions have contributed to raw material, energy and transportation cost inflation. In 2022, higher costs for raw materials and energy negatively impacted operating income by \$34 million compared to 2021. In addition, higher costs to transport goods to customers in 2022 resulted in a \$6 million negative impact to operating income compared to 2021.

### **2020 Acquisition-Related Expenses and Losses (Gains)**

In connection with our 2020 acquisitions of Turf, Moz and Arktura, we recorded certain acquisition-related expenses and losses (gains) to operating income in 2022, 2021 and 2020, summarized as follows (dollar amounts in millions):

	2022	2021	2020	<b>Affected Line Item in the Consolidated Statements of Operations and Comprehensive Income</b>
Deferred revenue	\$ -	\$ 0.7	\$ 0.7	Net sales
Loss (gain) related to change in fair value of contingent consideration	11.0	(4.1)	0.1	Loss (gain) related to change in fair value of contingent consideration
Deferred cash and restricted stock expenses	7.9	12.8	0.5	SG&A expenses
Inventory	-	0.3	0.1	Cost of goods sold
Net negative impact to operating income	<u>\$ 18.9</u>	<u>\$ 9.7</u>	<u>\$ 1.4</u>	

The deferred revenue and inventory amounts above reflect the post-acquisition expenses associated with recording these liabilities and assets at fair value as part of purchase accounting. The change in fair value of contingent consideration is related to our Moz and Turf acquisitions and was remeasured quarterly during each acquisition's respective earn-out period. See Note 19 to the Consolidated Financial Statements for further information. Expenses related to the deferred cash and restricted stock awards for Arktura's former owners and employees are recorded over their respective service periods, as such payments are subject to the awardees' continued employment with AWI. Depreciation of fixed assets acquired and amortization of intangible assets acquired have been excluded from the table above. See Note 5 to the Consolidated Financial Statements for further information.

### **RESULTS OF OPERATIONS**

This section of this Form 10-K generally discusses 2022 and 2021 items and year-to-year comparisons between 2022 and 2021. Discussions of year-to-year comparisons between 2021 and 2020 that are not included in this Form 10-K can be found in Management's Discussion and Analysis of Financial Condition and Results of Operations in Item 7 of our Annual Report on Form 10-K for the year ended December 31, 2021.

Please refer to Notes 3 and 6 to the Consolidated Financial Statements for a reconciliation of segment operating income to consolidated earnings from continuing operations before income taxes and additional financial information related to discontinued operations.

**2022 COMPARED TO 2021**  
**CONSOLIDATED RESULTS FROM CONTINUING OPERATIONS**

(dollar amounts in millions)

	<u>2022</u>	<u>2021</u>	<u>Change is Favorable</u>
Total consolidated net sales	\$ 1,233.1	\$ 1,106.6	11.4%
Operating income	\$ 278.7	\$ 260.0	7.2%

Consolidated net sales increased 11.4% with favorable AUV contributing \$94 million and higher volumes contributing \$33 million. Mineral Fiber net sales increased \$69 million year-over-year and Architectural Specialties net sales increased \$58 million. The increase in Mineral Fiber segment net sales was driven by improved AUV which was partially offset by lower volumes. Favorable AUV was driven by increased like-for-like pricing, partially offset by negative customer channel mix. Lower volumes resulted primarily from a reduction of inventory levels at certain customers in the first half of 2022, in addition to weakening market demand in the second half of the year. Architectural Specialties segment net sales increased due to broad based growth across our product categories.

Cost of goods sold was 63.6% of net sales in 2022, compared to 63.3% in 2021. The increase in cost of goods sold as a percent of net sales was driven by higher raw material, energy and freight inflation, partially offset by favorable AUV performance and improved manufacturing productivity.

SG&A expenses in 2022 were \$237.0 million, or 19.2% of net sales, compared to \$237.4 million, or 21.5% of net sales, in 2021. SG&A expense in 2022 included a \$19 million decrease in intangible asset amortization and acquisition-related expenses related to the Architectural Specialties segment, which was offset by a \$18 million increase in selling expenses primarily related to investments in capabilities and incentive compensation in support of increased Architectural Specialties sales and partially related to growth initiative investments.

In 2022 and 2021, we recorded \$11.0 million of remeasurement losses for changes in the fair value of contingent consideration related to the acquisition of Turf. In 2021, we recorded \$4.1 million of remeasurement gains for changes in the fair value of contingent consideration related to the acquisitions of Turf and Moz. See Note 19 to the Consolidated Financial Statements for further information.

Equity earnings from our WAVE joint venture were \$77.6 million in 2022, compared to \$87.7 million in 2021. The decrease in WAVE earnings resulted primarily from lower volumes and higher steel cost, partially offset by favorable AUV. WAVE volumes throughout 2022 were negatively impacted by a reduction of inventory levels at certain customers in addition to weakening market conditions in the second half of the year. See Note 11 to the Consolidated Financial Statements for further information.

Interest expense was \$27.1 million in 2022, compared to \$22.9 million in 2021. The increase in interest expense was primarily due to higher interest rates on floating rate debt.

Other non-operating income, net, was \$6.0 million in 2022, compared to \$5.6 million in 2021. Other non-operating income, net, is primarily comprised of the non-service cost components of pension and postretirement net period benefit costs. See Note 18 and Note 25 to the Consolidated Financial Statements for further information.

Income tax expense was \$57.7 million in 2022, compared to \$57.4 million in 2021. The effective tax rate for 2022 was 22.4% compared to a rate of 23.7% for 2021. The effective tax rate for 2022 decreased in comparison to 2021 due to an increase in benefits recognized from statute closures, in addition to a 2022 reduction in our valuation allowance for capital loss carryforwards.

Total Other Comprehensive Income (“OCI”) was \$9.5 million in 2022, compared to Total Other Comprehensive Loss (“OCL”) of \$0.3 million in 2021. The change in OCI was primarily driven by derivative gains. Derivative gain represents the adjustments to fair value of our derivative assets and liabilities and the recognition of gains and losses previously deferred in OCI. Also impacting the change in OCI were pension and postretirement adjustments and foreign currency translation adjustments. Pension and postretirement adjustments represent the amortization of actuarial gains and losses related to our defined benefit pension and postretirement plans. Foreign currency translation adjustments represent the change in the U.S. dollar value of assets and liabilities denominated in foreign currencies. Amounts in 2022 were driven primarily by changes in the Canadian dollar.

## **REPORTABLE SEGMENT RESULTS**

### **Mineral Fiber**

(dollar amounts in millions)

	<u>2022</u>	<u>2021</u>	<u>Change is Favorable/ (Unfavorable)</u>
Total segment net sales	\$ 887.4	\$ 818.5	8.4%
Operating income	\$ 260.9	\$ 261.2	(0.1)%

Net sales increased due to \$95 million of favorable AUV, partially offset by a negative impact of \$26 million from lower volumes. The improvement in AUV was driven by like-for-like pricing benefits, partially offset by negative customer channel mix. Volumes were negatively impacted by a reduction of inventory levels at certain customers in the first half of 2022 in addition to weakening market conditions in the second half of the year.

Operating income was unchanged from the prior year due to a \$76 million benefit from favorable AUV, offset by a \$40 million increase in manufacturing costs, primarily driven by increased raw material, energy and freight costs partially offset by improved manufacturing productivity, an \$18 million decrease from lower sales volumes, a \$10 million decrease in equity earnings and an \$8 million increase in selling expenses, primarily due to investments in growth initiatives.

### **Architectural Specialties**

(dollar amounts in millions)

	<u>2022</u>	<u>2021</u>	<u>Change is Favorable</u>
Total segment net sales	\$ 345.7	\$ 288.1	20.0%
Operating income	\$ 21.7	\$ 4.2	416.7%

Net sales increased \$58 million, driven by broad based growth across our product categories.

Operating income increased due to a \$30 million margin benefit from increased sales and a \$14 million reduction in intangible asset amortization, partially offset by a \$10 million increase in selling expenses, primarily related to investments in capabilities and incentive compensation, and a \$6 million increase in manufacturing costs. Segment operating income also included a \$9 million increase in acquisition-related expenses and losses, primarily due to the change in the fair value of contingent consideration.

### **Unallocated Corporate**

Unallocated Corporate operating loss was \$4 million in 2022 compared to \$5 million in 2021.

## **FINANCIAL CONDITION AND LIQUIDITY**

### **Cash Flow**

Operating activities for 2022 provided \$182.4 million of cash, compared to \$187.2 million in 2021. The decrease was primarily due to negative timing-related working capital changes in accounts payable and accrued expenses, inventory and income tax payments, partially offset by a positive timing-related change in accounts receivable. These changes were partially offset by higher cash earnings.

Net cash provided by investing activities was \$28.2 million for 2022, compared to \$13.9 million used in 2021. The favorable change in cash was primarily due to an increase in dividends from our WAVE joint venture, the absence of purchase price adjustments paid to Knauf, and lower purchases of property, plant and equipment.

Net cash used for financing activities was \$201.9 million in 2022, compared to \$212.1 million in 2021. The favorable change in cash was primarily due to an increase in net borrowings under our revolving credit facility, partially offset by an increase in repurchases of outstanding common stock, payments of acquisition-related contingent consideration in 2022, and financing costs paid in connection with the amendment and restatement of our credit facility in December of 2022.

### **Liquidity**

Our liquidity needs for operations vary throughout the year. We retain lines of credit to facilitate our seasonal cash flow needs, since cash flow is historically lower during the first and fourth quarters of our fiscal year.

On December 7, 2022, we amended and restated our \$1,000.0 million variable rate senior secured credit facility. The \$950.0 million amended senior secured credit facility is comprised of a \$500.0 million revolving credit facility (with a \$150.0 million sublimit for

letters of credit) and a \$450.0 million Term Loan A. The terms of the amended senior secured credit facility resulted in a higher interest rate spread for both the revolving credit facility and Term Loan A (1.50% over the London Interbank Offered Rate (“LIBOR”) to initially 1.625% over the Secured Overnight Financing Rate (“SOFR”), plus a 10-basis point SOFR adjustment). The interest rate can fluctuate based upon our election of the floating rate, with applicable margin subject to adjustment based on our consolidated net leverage ratio. We also extended the maturity of both the revolving credit facility and Term Loan A from September 2024 to December 2027. In connection with the refinancing, we paid \$3.1 million of bank, legal and other fees, of which \$3.0 million were capitalized. These fees are reflected as a component of long-term debt and amortized into interest expense over the lives of the underlying debt. Additionally, during the fourth quarter of 2022, we wrote off \$0.6 million of unamortized debt financing costs, included as a component of interest expense, related to our previous credit facility. We also have a \$25.0 million bi-lateral letter of credit facility separate from the senior secured credit facility.

As of December 31, 2022, total borrowings outstanding under our senior secured credit facility were \$205.0 million under the revolving credit facility and \$450.0 million under Term Loan A.

The amended senior secured credit facility includes two financial covenants that require the ratio of consolidated earnings before interest, taxes, depreciation and amortization (“EBITDA”) to consolidated cash interest expense minus cash consolidated interest income to be greater than or equal to 3.0 to 1.0 and requires the ratio of consolidated funded indebtedness, minus AWI and domestic subsidiary unrestricted cash and cash equivalents up to \$100 million, to EBITDA to be less than or equal to 3.75 to 1.0 (subject to certain exceptions for certain acquisitions). As of December 31, 2022, we were in compliance with all covenants of the senior secured credit facility.

The Term Loan A is currently priced on a variable interest rate basis. The following table summarizes our interest rate swaps (dollar amounts in millions):

Trade Date	Notional Amount	Coverage Period	Risk Coverage
November 28, 2018	\$ 200.0	November 2018 to November 2023	USD-LIBOR
September 19, 2022	\$ 25.0	September 2022 to December 2023	USD-LIBOR
March 10, 2020	\$ 50.0	March 2021 to March 2024	USD-LIBOR
March 11, 2020	\$ 50.0	March 2021 to March 2024	USD-LIBOR
November 28, 2018	\$ 100.0	March 2021 to March 2025	USD-LIBOR

Under the terms of our interest rate swaps above, we pay a fixed rate monthly and receive 1-month LIBOR, inclusive of a 0% floor.

These swaps are designated as cash flow hedges against changes in LIBOR for a portion of our variable rate debt.

In July 2017, the Financial Conduct Authority (the authority that regulates LIBOR) announced it intends to replace LIBOR rates with the SOFR effective in mid-2023. The Alternative Reference Rates Committee (“ARRC”) has proposed that the SOFR rate represents best practice as the alternative to USD-LIBOR for use in derivatives and other financial contracts that are currently indexed to USD-LIBOR. ARRC has proposed a paced market transition plan to SOFR from USD-LIBOR and organizations are currently working on industry wide and company specific transition plans as it relates to derivatives and cash markets exposed to USD-LIBOR. In the second quarter of 2020, we adopted Accounting Standards Update 2020-04, “Facilitation of the Effects of Reference Rate Reform on Financial Reporting,” which provides optional expedients and exceptions for applying U.S. GAAP to contracts, hedging relationships and other transactions affected by the discontinuation of LIBOR. We have elected practical expedients available under Accounting Standards Update 2020-04 to allow for different reference rates in our senior secured credit facility and interest rate hedges.

We utilize lines of credit and other commercial commitments to ensure that adequate funds are available to meet operating requirements. Letters of credit are currently arranged through our revolving credit facility and our bi-lateral facility. Letters of credit may be issued to third party suppliers, insurance and financial institutions and typically can only be drawn upon in the event of AWI’s failure to pay its obligations to the beneficiary. The following table presents details related to our letters of credit facilities (dollar amounts in millions):

Financing Arrangements	December 31, 2022		
	Limit	Used	Available
Bi-lateral facility	\$ 25.0	\$ 8.1	\$ 16.9
Revolving credit facility	150.0	-	150.0
Total	\$ 175.0	\$ 8.1	\$ 166.9

The table below reflects future payments of long-term debt, excluding \$3.9 million of unamortized debt financing costs, and the related interest payments, which are projected based on market-based interest rate swap curves (dollar amounts in millions):

	2023	2024	2025	2026	2027	Thereafter	Total
Long-term debt	\$ -	\$ 22.5	\$ 22.5	\$ 22.5	\$ 587.5	\$ -	\$ 655.0
Scheduled interest payments	33.5	33.0	28.5	27.2	24.7	-	146.9

As of December 31, 2022, we had \$106.0 million of cash and cash equivalents, \$89.3 million in the U.S. and \$16.7 million in various foreign jurisdictions, primarily Canada. As of December 31, 2022, we also had \$295.0 million available under our revolving credit facility. We believe cash on hand and cash generated from operations, together with borrowing capacity under our credit facility, will be adequate to address our near-term liquidity needs based on current expectations of our business operations, capital expenditures and scheduled payment of debt obligations. In 2023, we expect to spend approximately \$75 million to \$85 million on capital expenditures and approximately \$45 million on dividends.

On July 29, 2016, our Board of Directors approved our share repurchase program pursuant to which we are authorized to repurchase up to \$1,200.0 million of our outstanding shares of common stock through December 31, 2023 (the “Program”). We had \$348.8 million remaining under the Board’s repurchase authorization as of December 31, 2022.

Repurchases under the Program may be made through open market, block and privately negotiated transactions, including Rule 10b5-1 plans, at such times and in such amounts as management deems appropriate, subject to market and business conditions, regulatory requirements and other factors. The Program does not obligate AWI to repurchase any particular amount of common stock and may be suspended or discontinued at any time without notice.

### **CRITICAL ACCOUNTING ESTIMATES**

In preparing our consolidated financial statements in accordance with U.S. generally accepted accounting principles (“GAAP”), we are required to make certain estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements, and the reported amounts of revenues and expenses during the reporting period. We evaluate our estimates and assumptions on an on-going basis, using relevant internal and external information. We believe that our estimates and assumptions are reasonable. However, actual results may differ from what was estimated and could have a significant impact on the financial statements.

We have identified the following as our critical accounting estimates. We have discussed these critical accounting estimates with our Audit Committee.

**U.S. Pension Credit and Postretirement Benefit Costs** – We maintain significant pension and postretirement plans in the U.S. Our defined benefit pension and postretirement benefit costs are developed from actuarial valuations. These valuations are calculated using a number of assumptions, which represent management’s best estimate of the future. The assumptions that have the most significant impact on reported results are the discount rate, the estimated long-term return on plan assets and the estimated inflation in health care costs. These assumptions are generally updated annually.

Management utilizes the Aon Hewitt AA only above median yield curve, which is a hypothetical AA yield curve comprised of a series of annualized individual discount rates, as the primary basis for determining discount rates. As of December 31, 2022 and 2021, we assumed discount rates of 5.21% and 2.98%, respectively, for our U.S. defined benefit pension plans. As of December 31, 2022 and 2021, we assumed discount rates of 5.12% and 2.72%, respectively, for our U.S. postretirement plan. The effects of the change in discount rate will be amortized into earnings as described below. Absent any other changes, a one-quarter percentage point increase or decrease in the discount rates for the U.S. pension and postretirement plans would impact 2023 non-operating income by \$0.4 million.

We manage two U.S. defined benefit pension plans, our RIP, which is a qualified funded plan, and a nonqualified unfunded plan. For the RIP, the expected long-term return on plan assets represents a long-term view of the future estimated investment return on plan assets. This estimate is determined based on the target allocation of plan assets among asset classes and input from investment professionals on the expected performance of the asset classes over 10 to 30 years. Historical asset returns are monitored and considered when we develop our expected long-term return on plan assets. An incremental component is added for the expected return from active management based on historical information obtained from the plan’s investment consultants. These forecasted gross returns are reduced by estimated management fees and expenses. Over the 10-year period ended December 31, 2022, the historical annualized return was approximately 2.97% compared to an average expected return of 5.80%. The actual loss on plan assets incurred

for 2022 was 20.71%, net of fees. The difference between the actual and expected rate of return on plan assets will be amortized into earnings as described below.

The expected long-term return on plan assets used in determining our 2022 U.S. pension cost was 3.75%. We have assumed a return on plan assets for 2023 of 6.50%. The 2023 expected return on assets was calculated in a manner consistent with 2022. Absent any other changes, a one-quarter percentage point increase or decrease in this assumption would impact 2023 non-operating income by \$1.0 million.

Contributions to the unfunded pension plan were \$2.8 million in 2022 and were made on a monthly basis to fund benefit payments. We estimate the 2023 contributions will be approximately \$2.8 million. See Note 18 to the Consolidated Financial Statements for more information.

The estimated inflation in health care costs represents a 5-10 year view of the expected inflation in our postretirement health care costs. We separately estimate expected health care cost increases for pre-65 retirees and post-65 retirees due to the influence of Medicare coverage at age 65, as illustrated below:

	Assumptions		Actual	
	Post-65	Pre-65	Post-65	Pre-65
2021	7.6%	6.7%	12.8%	(48.1)%
2022	7.1%	6.6%	7.4%	22.7%
2023	7.8%	7.3%		

The difference between the actual and expected health care costs is amortized into earnings as described below. As of December 31, 2022, health care cost increases are estimated to decrease ratably until 2030, after which they are estimated to be constant at 4.50%. See Note 18 to the Consolidated Financial Statements for more information.

Actual results that differ from our various pension and postretirement plan estimates are captured as actuarial gains/losses. When certain thresholds are met, the gains and losses are amortized into future earnings over the remaining life expectancy of participants. Changes in assumptions could have significant effects on earnings in future years.

Total net actuarial losses related to our U.S. pension benefit plans as of December 31, 2022 increased by \$19.8 million in 2022 primarily due to a less favorable than expected return on assets, partially offset by changes in actuarial assumptions (most significantly a 223-basis point increase in the discount rate). The \$19.8 million actuarial loss impacting our U.S. pension plans is reflected as a component of other comprehensive income in our Consolidated Statements of Operations and Comprehensive Income along with actuarial gains and losses from our foreign pension plan and our U.S. postretirement benefit plan.

**Income Taxes** – Our effective tax rate is primarily determined based on our pre-tax income, statutory income tax rates in the jurisdictions in which we operate, and the tax impacts of items treated differently for tax purposes than for financial reporting purposes. Some of these differences are permanent, such as expenses that are not deductible in our tax returns, and some differences are temporary, reversing over time, such as depreciation expense. These temporary differences create deferred income tax assets and liabilities. Deferred income tax assets are also recorded for state net operating losses (“NOL”) and capital loss carryforwards.

As of December 31, 2022, we have recorded valuation allowances totaling \$48.7 million for various federal and state deferred tax assets. While we have considered future taxable income in assessing the need for the valuation allowances based on our best available projections, if these estimates and assumptions change in the future or if actual results differ from our projections, we may be required to adjust our valuation allowances accordingly. Such adjustments could be material to our Consolidated Financial Statements.

As further described in Note 16 to the Consolidated Financial Statements, our Consolidated Balance Sheet as of December 31, 2022 includes deferred income tax liabilities of \$169.4 million, net of \$112.6 million of deferred tax assets. We have established \$48.7 million of valuation allowances consisting of \$31.3 million for state deferred tax assets, primarily operating loss carryforwards, and \$17.4 million for federal and state deferred tax assets related to capital loss carryforwards. Inherent in determining our effective tax rate are judgments regarding business plans and expectations about future operations. These judgments include the amount and geographic mix of future taxable income, limitations on usage of NOL carryforwards, the impact of ongoing or potential tax audits, and other future tax consequences.

As of December 31, 2022 and 2021, we had \$675.5 million and \$700.9 million, respectively, of gross state NOL carryforwards expiring between 2023 and 2042. We estimate we will need to generate future U.S. taxable income of approximately \$360.1 million for state income tax purposes during the respective realization periods (ranging from 2023 to 2042) to be able to fully realize the net state NOL deferred income tax assets.



Our ability to utilize deferred tax assets may be impacted by certain future events, such as changes in tax legislation and insufficient future taxable income prior to expiration of certain deferred tax assets.

Impairments of Tangible Assets, Intangible Assets and Goodwill – Our indefinite-lived assets include goodwill and other intangibles, primarily trademarks and brand names. Those trademarks and brand names are integral to our corporate identity and expected to contribute indefinitely to our corporate cash flows. Accordingly, they have been assigned an indefinite life. We conduct our annual impairment tests for these indefinite-lived intangible assets and goodwill during the fourth quarter. These assets undergo more frequent tests if an indication of possible impairment exists. We conduct impairment tests for tangible assets and definite-lived intangible assets when indicators of impairment exist for the asset group, such as operating losses and/or negative cash flows.

The principal assumptions used in our impairment tests for definite-lived intangible assets is operating profit adjusted for depreciation and amortization and, if required to estimate the fair value, the discount rate. The principal assumptions used in our impairment tests for indefinite-lived intangible assets include revenue growth rates, discount rate and royalty rate. The principal assumptions utilized in our impairment tests for goodwill include after-tax cash flows growth rates and discount rate. Revenue growth rates, after-tax cash flows growth rates and operating profit assumptions are derived from those used in our operating plan and strategic planning processes. The discount rate assumption is calculated based upon an estimated weighted average cost of capital which reflects the overall level of inherent risk and the rate of return a market participant would expect to achieve. The royalty rate assumption represents the estimated contribution of the intangible assets to the overall profits of the related businesses. Methodologies used for valuing our intangible assets did not change from prior periods.

In 2022, indefinite-lived intangibles and goodwill were tested for impairment based on the identified asset (for indefinite-lived intangibles) or on our identified reporting units (for goodwill). There were no impairment charges recorded in 2022, 2021 or 2020 related to intangible assets. We did not test tangible assets within our continuing operations for impairment in 2022, 2021 or 2020 as no indicators of impairment existed.

The revenue and cash flow estimates used in applying our impairment tests are based on management's analysis of information available at the time of the impairment test and represent a market participant view. Actual cash flows lower than the estimate could lead to significant future impairments. If subsequent testing indicates that fair values have declined, the carrying values would be reduced and our future statements of operations would be affected.

We cannot predict the occurrence of certain events that might lead to material impairment charges in the future. Such events may include, but are not limited to, the impact of economic environments, particularly related to the commercial and residential construction industries, material adverse changes in relationships with significant customers, or strategic decisions made in response to economic and competitive conditions. See Notes 3 and 13 to the Consolidated Financial Statements for further information.

Environmental Liabilities – We are actively involved in the investigation, closure and/or remediation of existing or potential environmental contamination under the Comprehensive Environmental Response, Compensation and Liability Act ("CERCLA"), and state Superfund and similar environmental laws at two domestically owned locations allegedly resulting from past industrial activity. In a few cases, we are one of several potentially responsible parties and have agreed to jointly fund the required investigation, while preserving our defenses to the liability. We may also have rights of contribution or reimbursement from other parties or coverage under applicable insurance policies.

We provide for environmental remediation costs and penalties when the responsibility to remediate is probable and the amount of associated costs is reasonably determinable. Accruals are estimates based on the judgment of management related to ongoing proceedings. Estimates of our future liability at the environmental sites are based on evaluations of currently available facts regarding each individual site. In determining the probability of contribution, we consider the solvency of other parties, the site activities of other parties, whether liability is being disputed, the terms of any existing agreements and experience with similar matters, and the effect of our October 2006 Chapter 11 reorganization upon the validity of the claim.

We evaluate the measurement of recorded liabilities each reporting period based on current facts and circumstances specific to each matter. The ultimate losses incurred upon final resolution may materially differ from the estimated liability recorded. Changes in estimates are recorded in earnings in the period in which such changes occur.

We are unable to predict the extent to which any recoveries from other parties or coverage under insurance policies might cover our final share of costs for these sites. Our final share of investigation and remediation costs may exceed any such recoveries, and such amounts net of insurance recoveries may be material. However, we do not expect the total future costs to have a material adverse effect on our liquidity or financial condition as the cash payments may be made over many years.

Business Combinations and Contingent Consideration – Acquired businesses are accounted for using the acquisition method of accounting, which requires that the purchase price be allocated to the assets acquired and liabilities assumed at their respective fair

values. Any excess of the purchase price over the estimated fair values of the assets acquired and liabilities assumed is recorded as goodwill. The estimated fair value of contingent consideration is recorded as a liability on the balance sheet at the date of acquisition. The purchase price allocation requires us to make significant estimates and assumptions, especially at the acquisition date, with respect to intangible assets and contingent consideration. Although we believe the assumptions and estimates we have made are reasonable, they are based in part on historical experience and information obtained from the management of the acquired companies. We engage independent, third-party valuation specialists to assist in determining the fair values of acquired intangible assets and contingent consideration.

Both the Moz and Turf acquisitions in 2020 included the potential for contingent earn-out payments based on the financial performance of the acquired companies. We estimated the fair value of these contingent consideration liabilities upon acquisition and are required to measure the liability at fair value each reporting period until the contingency is resolved, with changes in the fair value after the acquisition date affecting earnings in the period of the estimated fair value change. See Notes 5 and 19 to the Consolidated Financial Statements for further information.

The principal assumptions used in valuing certain intangible assets and contingent consideration include future expected cash flows from sales and acquired developed technologies, the acquired company's trade names and customer relationships as well as assumptions about the period of time the acquired trade names and customer relationships will continue to be used in the combined company's portfolio, the probability of meeting the future revenue and EBITDA growth targets and discount rates used to determine the present value of estimated future cash flows.

These estimates are inherently uncertain and unpredictable, and if different estimates were used, the total consideration including the estimated fair value of the contingent consideration, could be allocated to the acquired assets and liabilities differently from the allocation that we have made. In addition, unanticipated events and circumstances may occur, which may affect the accuracy or validity of such estimates, and if such events occur we may be required to record a charge against the value assigned to an acquired asset or an increase in the amounts recorded for assumed liabilities.

#### **ACCOUNTING PRONOUNCEMENTS EFFECTIVE IN FUTURE PERIODS**

There were no new accounting pronouncements issued or effective during the fiscal year which have had or are expected to have a material impact on the Consolidated Financial Statements.

## **ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK**

### **Market Risk**

Our primary exposure to market risk is from changes in interest rates that could impact our results of operations, cash flows and financial condition. We use interest rate derivatives to manage our exposures to interest rates. We utilize derivative financial instruments as risk management tools and not for speculative trading purposes. In addition, derivative financial instruments are entered into with a diversified group of major financial institutions in order to manage our exposure to potential nonperformance on such instruments.

In December 2022, we amended and restated our senior secured credit facility. The senior secured credit facility is initially priced on a variable interest rate of 1.625% over SOFR, plus a 10-basis point SOFR adjustment. The interest rate can fluctuate based upon our election of the floating rate, with applicable margin subject to adjustment based on our consolidated net leverage ratio. We have elected practical expedients available under U.S. GAAP to allow for different reference rates in our senior secured credit facility and interest rate hedges.

### **Counterparty Risk**

We only enter into derivative transactions with established financial institution counterparties having an investment-grade credit rating. We monitor counterparty credit ratings on a regular basis. All of our derivative transactions with counterparties are governed by master International Swap and Derivatives Association agreements (“ISDAs”) with netting arrangements. These agreements can limit our exposure in situations where we have gain and loss positions outstanding with a single counterparty. We do not post nor do we receive cash collateral with any counterparty for our derivative transactions. These ISDAs do not have any credit contingent features; however, a default under our bank credit facility would trigger a default under these agreements. Exposure to individual counterparties is controlled and we consider the risk of counterparty default to be negligible.

### **Interest Rate Sensitivity**

We are subject to interest rate variability on our Term Loan A and revolving credit facility. A hypothetical increase of one-quarter percentage point in SOFR interest rates from December 31, 2022 levels would increase 2023 interest expense by approximately \$0.7 million. We have active interest rate swaps outstanding, which effectively fix the interest rates for a portion of our debt. These interest rate swaps are included in this calculation.

As of December 31, 2022, we had interest rate swaps outstanding with notional amounts of \$425.0 million. We utilize interest rate swaps to minimize the fluctuations in earnings caused by interest rate volatility. Under the terms of these swaps, we receive 1-month LIBOR and pay a fixed rate over the hedged period. The following table summarizes our interest rate swaps as of December 31, 2022 (dollar amounts in millions):

<u>Trade Date</u>	<u>Notional Amount</u>	<u>Coverage Period</u>	<u>Risk Coverage</u>
November 28, 2018	\$ 200.0	November 2018 to November 2023	USD-LIBOR
September 19, 2022	\$ 25.0	September 2022 to December 2023	USD-LIBOR
March 10, 2020	\$ 50.0	March 2021 to March 2024	USD-LIBOR
March 11, 2020	\$ 50.0	March 2021 to March 2024	USD-LIBOR
November 28, 2018	\$ 100.0	March 2021 to March 2025	USD-LIBOR

These swaps are designated as cash flow hedges against changes in LIBOR for a portion of our variable rate debt. The net asset measured at fair value was \$11.4 million as of December 31, 2022.

The table below provides information about our long-term debt obligations as of December 31, 2022, including payment requirements and related weighted-average interest rates by scheduled maturity dates. Weighted average variable rates are based on implied forward rates in the yield curve and are exclusive of our interest rate swaps.

<u>Scheduled maturity date (dollar amounts in millions)</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>	<u>2027</u>	<u>After 2027</u>	<u>Total</u>
Variable rate principal payments	\$ -	\$ 22.5	\$ 22.5	\$ 22.5	\$ 587.5	\$ -	\$ 655.0
Average interest rate	4.73%	3.50%	2.75%	2.70%	2.75%	-	2.77%

Variable rate principal payments reflected in the preceding table exclude \$3.9 million of unamortized debt financing costs as of December 31, 2022.

**ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA**

**SUPPLEMENTARY DATA**

Quarterly Financial Information for the Quarter Ended December 31, 2022 (Unaudited)

The following consolidated financial statements are filed as part of this Annual Report on Form 10-K:

Reports of Independent Registered Public Accounting Firm.

Consolidated Statements of Operations and Comprehensive Income for the Years Ended December 31, 2022, 2021 and 2020.

Consolidated Balance Sheets as of December 31, 2022 and 2021.

Consolidated Statements of Shareholders' Equity for the Years Ended December 31, 2022, 2021 and 2020.

Consolidated Statements of Cash Flows for the Years Ended December 31, 2022, 2021 and 2020.

Notes to Consolidated Financial Statements.

Schedule II for the Years Ended December 31, 2022, 2021 and 2020.

Armstrong World Industries, Inc., and Subsidiaries  
Quarterly Financial Information (unaudited)  
(dollar amounts in millions, except for per share data)

Fourth Quarter 2022 Compared To Fourth Quarter 2021 – Continuing Operations

Consolidated fourth-quarter 2022 net sales of \$304.5 million increased 7.8% compared to the prior year quarter, driven by favorable AUV of \$29 million which was partially offset by lower volumes of \$7 million.

Mineral Fiber net sales increased 4.2% due to favorable AUV of \$30 million which was partially offset by lower volumes of \$21 million. Architectural Specialties net sales increased 17.5% due to broad based growth across our product categories.

For the fourth quarter of 2022, cost of goods sold was 63.4% of net sales, compared to 63.7% in the fourth quarter of 2021. The year-over-year decrease in cost of goods sold as a percent of net sales was driven by favorable AUV and improved manufacturing productivity which was partially offset by higher raw material, energy and freight inflation.

SG&A expenses in the fourth quarter of 2022 were \$59.1 million, or 19.4% of net sales compared to \$60.9 million, or 21.6% of net sales, in the fourth quarter of 2021. The decrease in SG&A expenses was driven primarily by a \$4 million decrease in intangible asset amortization and acquisition-related expenses related to the Architectural Specialties segment and a \$1 million decrease in incentive and deferred compensation expense, which was partially offset by a \$4 million increase in selling expenses.

In the fourth quarter of 2022, the changes in the fair value of contingent consideration resulted in \$2.3 million of remeasurement gains for changes in the fair value of contingent consideration related to the acquisition of Turf. In the fourth quarter of 2021, we recorded \$5.6 million of remeasurement losses for changes in the fair value of contingent consideration related to the acquisitions of Turf and Moz. See Note 19 to the Consolidated Financial Statements for further information.

Equity earnings in the fourth quarter of 2022 were \$15.9 million compared to \$19.6 million in the fourth quarter of 2021. The decrease in WAVE earnings resulted primarily from lower volumes which were partially offset by favorable AUV. See Note 11 to the Consolidated Financial Statements for further information.

Operating income increased 27.2% to \$70.6 million in the fourth quarter of 2022 compared to \$55.5 million in the fourth quarter of 2021.

Interest expense in the fourth quarter of 2022 was \$9.2 million compared to \$5.5 million in the fourth quarter of 2021. The increase in interest expense was primarily due to higher interest rates on floating rate debt, coupled with slightly higher average debt balances.

Fourth quarter income tax expense was \$14.5 million on pre-tax earnings of \$63.3 million in 2022 compared to \$9.4 million on pre-tax earnings of \$51.3 million in 2021. The effective tax rate for the fourth quarter of 2022 was higher than the same period in 2021 primarily due to a lower benefit from statute closures.

Basic and diluted earnings per share were \$1.07 in the fourth quarter of 2022, compared to basic and diluted earnings per share of \$0.88 in the fourth quarter of 2021.

## Management's Report on Internal Control over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting, as such term is defined in Rules 13a-15(f) and 15d-15(f) under the Securities Exchange Act of 1934, as amended. Our internal control over financial reporting was designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of our financial statements for external purposes in accordance with generally accepted accounting principles.

Because of 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.

Our management, with the participation of our Chief Executive Officer and Chief Financial Officer, conducted an evaluation of the effectiveness of our internal control over financial reporting based on the framework in *Internal Control-Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). Based on this evaluation and the criteria in the COSO framework, our management concluded that our internal control over financial reporting was effective as of December 31, 2022.

KPMG LLP, an independent registered public accounting firm, audited our internal control over financial reporting as of December 31, 2022, as stated in their report included herein.

/s/ Victor D. Grizzle

Victor D. Grizzle  
Director, President and Chief Executive Officer

/s/ Christopher P. Calzaretta

Christopher P. Calzaretta  
Senior Vice President and Chief Financial Officer

/s/ James T. Burge

James T. Burge  
Vice President and Corporate Controller

February 21, 2023

## Report of Independent Registered Public Accounting Firm

To the Shareholders and Board of Directors  
Armstrong World Industries, Inc.:

### *Opinion on Internal Control Over Financial Reporting*

We have audited Armstrong World Industries, Inc. and subsidiaries' (the Company) 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. 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 Committee of Sponsoring Organizations of the Treadway Commission.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated balance sheets of the Company as of December 31, 2022 and 2021, the related consolidated statements of operations and comprehensive income, shareholders' equity, and cash flows for each of the years in the three-year period ended December 31, 2022, and the related notes and financial statement schedule II (collectively, the consolidated financial statements), and our report dated February 21, 2023 expressed an unqualified opinion on those consolidated financial statements.

### *Basis for Opinion*

The Company's management is responsible 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 an opinion on the Company's internal control over financial reporting based on our audit. We are a public accounting firm registered with the 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 audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. 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 audit also included performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

### *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 (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) 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 (3) 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.

/s/ KPMG LLP

Philadelphia, Pennsylvania  
February 21, 2023

## Report of Independent Registered Public Accounting Firm

To the Shareholders and Board of Directors  
Armstrong World Industries, Inc.:

### *Opinion on the Consolidated Financial Statements*

We have audited the accompanying consolidated balance sheets of Armstrong World Industries, Inc. and subsidiaries (the Company) as of December 31, 2022 and 2021, the related consolidated statements of operations and comprehensive income, shareholders' equity, and cash flows for each of the years in the three-year period ended December 31, 2022, and the related notes and financial statement schedule II (collectively, the consolidated financial statements). In our opinion, the consolidated financial statements 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 years in the three-year period ended December 31, 2022, in conformity with U.S. generally accepted accounting principles.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), 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, and our report dated February 21, 2023 expressed an unqualified opinion on the effectiveness of the Company's internal control over financial reporting.

### *Basis for Opinion*

These consolidated financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these consolidated financial statements based on our audits. We are a public accounting firm registered with the 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 audit to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud. Our audits 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. We believe that our audits provide a reasonable basis for our opinion.

### *Critical Audit Matter*

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: (1) relates to accounts or disclosures that are material to the consolidated financial statements and (2) involved our especially challenging, subjective, or complex judgments. The communication of a critical audit matter 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.

#### *Pension and postretirement benefit obligations*

As discussed in Notes 2 and 18 to the consolidated financial statements, the Company's pension projected benefit obligations and the fair value of plan assets for the U.S. plans were \$337.1 million and \$391.7 million, respectively, as of December 31, 2022, resulting in a funded status of \$54.6 million. Additionally, the Company's accumulated postretirement benefit obligation was \$61.3 million, which is an unfunded liability.

We identified the evaluation of the Company's measurement of the benefit obligations to be a critical audit matter. Subjective auditor judgment was required to evaluate the discount rates, as minor changes in the rates could have a significant impact on the benefit obligations. Additionally, the assessment of the discount rates required specialized actuarial skills and knowledge.

The following are the primary procedures we performed to address this critical audit matter. We evaluated the design and tested the operating effectiveness of certain internal controls over the Company's benefit obligations process, including controls related to the actuarial determination of the discount rates used in the valuation of the benefit obligations. Additionally, we involved an actuarial professional with specialized skill and knowledge, who assisted in the evaluation of the Company's discount rates by:



- assessing changes in the discount rates from the prior year against changes in published indices;
- assessing the discount rates based on the plan type, plan provisions and pattern of cash flows; and
- evaluating the selected yield curve, the consistency of the yield curve with the prior year, and the spot rates.

/s/ KPMG LLP

We have served as the Company's auditor since 1929.

Philadelphia, Pennsylvania

February 21, 2023

Armstrong World Industries, Inc., and Subsidiaries  
Consolidated Statements of Operations and Comprehensive Income  
(amounts in millions, except per share data)

	Years Ended December 31,		
	2022	2021	2020
Net sales	\$ 1,233.1	\$ 1,106.6	\$ 936.9
Cost of goods sold	784.0	701.0	603.8
Gross profit	449.1	405.6	333.1
Selling, general and administrative expenses	237.0	237.4	163.2
Loss (gain) related to change in fair value of contingent consideration	11.0	(4.1)	0.1
(Gain) related to sale of fixed and intangible assets	-	-	(21.0)
Equity (earnings) from joint venture	(77.6)	(87.7)	(64.0)
Operating income	278.7	260.0	254.8
Interest expense	27.1	22.9	24.1
Other non-operating (income) expense, net	(6.0)	(5.6)	357.4
Earnings (loss) from continuing operations before income taxes	257.6	242.7	(126.7)
Income tax expense (benefit)	57.7	57.4	(42.6)
Earnings (loss) from continuing operations	199.9	185.3	(84.1)
Gain (loss) from disposal of discontinued businesses, net of tax (benefit) expense of (\$3.0), \$1.7 and (\$1.4)	3.0	(2.1)	(15.0)
Net earnings (loss) from discontinued operations	3.0	(2.1)	(15.0)
Net earnings (loss)	\$ 202.9	\$ 183.2	\$ (99.1)
Other comprehensive income (loss), net of tax:			
Foreign currency translation adjustments	(1.8)	-	(7.1)
Derivative gain (loss), net	18.6	9.9	(10.5)
Pension and postretirement adjustments	(7.3)	(10.2)	284.4
Total other comprehensive income (loss)	9.5	(0.3)	266.8
Total comprehensive income	\$ 212.4	\$ 182.9	\$ 167.7
Earnings (loss) per share of common stock, continuing operations:			
Basic	\$ 4.31	\$ 3.88	\$ (1.76)
Diluted	\$ 4.30	\$ 3.86	\$ (1.76)
Earnings (loss) per share of common stock, discontinued operations:			
Basic	\$ 0.07	\$ (0.04)	\$ (0.31)
Diluted	\$ 0.07	\$ (0.04)	\$ (0.31)
Net earnings (loss) per share of common stock:			
Basic	\$ 4.38	\$ 3.84	\$ (2.07)
Diluted	\$ 4.37	\$ 3.82	\$ (2.07)
Average number of common shares outstanding:			
Basic	46.3	47.6	47.9
Diluted	46.4	47.9	47.9

*See accompanying notes to consolidated financial statements beginning on page 42.*

Armstrong World Industries, Inc., and Subsidiaries  
Consolidated Balance Sheets  
(amounts in millions, except share data)

<u>Assets</u>	<u>December 31, 2022</u>	<u>December 31, 2021</u>
<b>Current assets:</b>		
Cash and cash equivalents	\$ 106.0	\$ 98.1
Accounts and notes receivable, net	112.4	109.1
Inventories, net	110.0	90.2
Income taxes receivable	1.8	1.4
Other current assets	26.3	23.1
<b>Total current assets</b>	<b>356.5</b>	<b>321.9</b>
Property, plant, and equipment, net	554.4	542.8
Operating lease assets	18.8	21.0
Finance lease assets	16.0	18.4
Prepaid pension costs	83.2	109.0
Investment in joint venture	23.9	50.0
Goodwill	167.3	167.0
Intangible assets, net	407.7	421.4
Income taxes receivable	-	0.6
Other non-current assets	59.4	57.9
<b>Total assets</b>	<b>\$ 1,687.2</b>	<b>\$ 1,710.0</b>
<b><u>Liabilities and Shareholders' Equity</u></b>		
<b>Current liabilities:</b>		
Current installments of long-term debt	\$ -	\$ 25.0
Accounts payable and accrued expenses	172.5	174.9
Operating lease liabilities	5.9	5.6
Finance lease liabilities	2.2	2.2
Income taxes payable	2.1	1.9
<b>Total current liabilities</b>	<b>182.7</b>	<b>209.6</b>
Long-term debt, less current installments	651.1	606.4
Operating lease liabilities	13.2	15.6
Finance lease liabilities	14.6	16.8
Postretirement benefit liabilities	54.8	71.1
Pension benefit liabilities	27.6	36.9
Other long-term liabilities	25.8	46.7
Income taxes payable	13.1	20.3
Deferred income taxes	169.3	166.9
<b>Total non-current liabilities</b>	<b>969.5</b>	<b>980.7</b>
<b>Shareholders' equity:</b>		
Common stock, \$0.01 par value per share, 200 million shares authorized, 62,936,820 shares issued and 45,572,185 shares outstanding as of December 31, 2022 and 62,775,155 shares issued and 47,302,299 shares outstanding as of December 31, 2021	0.6	0.6
Capital in excess of par value	573.6	561.3
Retained earnings	1,169.9	1,011.4
Treasury stock, at cost, 17,364,635 shares as of December 31, 2022 and 15,472,856 shares as of December 31, 2021	(1,109.0)	(944.0)
Accumulated other comprehensive (loss)	(100.1)	(109.6)
<b>Total shareholders' equity</b>	<b>535.0</b>	<b>519.7</b>
<b>Total liabilities and shareholders' equity</b>	<b>\$ 1,687.2</b>	<b>\$ 1,710.0</b>

*See accompanying notes to consolidated financial statements beginning on page 42.*

Armstrong World Industries, Inc., and Subsidiaries  
Consolidated Statements of Shareholders' Equity  
(amounts in millions, except share data)

	Common Stock		Additional Paid-In Capital	Retained Earnings	Treasury Stock		Accumulated Other Comprehensive (Loss)	Total
	Shares	Amount			Shares	Amount		
December 31, 2019	47,992,348	\$ 0.6	\$ 555.7	\$ 1,008.2	14,271,047	\$ (823.5)	\$ (376.1)	\$ 364.9
Stock issuance, net	335,936	-	-	-	-	-	-	-
Cash dividends - \$0.810 per common share	-	-	-	(39.3)	-	-	-	(39.3)
Share-based employee compensation	-	-	2.0	-	-	-	-	2.0
Net (loss)	-	-	-	(99.1)	-	-	-	(99.1)
Other comprehensive income	-	-	-	-	-	-	266.8	266.8
Restricted stock issued to employees in connection with acquisition	94,230	-	(4.0)	-	(94,230)	4.0	-	-
Acquisition of treasury stock	(508,693)	-	-	-	508,693	(44.4)	-	(44.4)
December 31, 2020	<u>47,913,821</u>	<u>\$ 0.6</u>	<u>\$ 553.7</u>	<u>\$ 869.8</u>	<u>14,685,510</u>	<u>\$ (863.9)</u>	<u>\$ (109.3)</u>	<u>\$ 450.9</u>
Stock issuance, net	173,379	-	0.1	-	2,445	(0.1)	-	-
Cash dividends - \$0.861 per common share	-	-	-	(41.6)	-	-	-	(41.6)
Share-based employee compensation	-	-	7.5	-	-	-	-	7.5
Net earnings	-	-	-	183.2	-	-	-	183.2
Other comprehensive (loss)	-	-	-	-	-	-	(0.3)	(0.3)
Acquisition of treasury stock	(784,901)	-	-	-	784,901	(80.0)	-	(80.0)
December 31, 2021	<u>47,302,299</u>	<u>\$ 0.6</u>	<u>\$ 561.3</u>	<u>\$ 1,011.4</u>	<u>15,472,856</u>	<u>\$ (944.0)</u>	<u>\$ (109.6)</u>	<u>\$ 519.7</u>
Stock issuance, net	159,628	-	-	-	2,037	-	-	-
Cash dividends - \$0.947 per common share	-	-	-	(44.4)	-	-	-	(44.4)
Share-based employee compensation	-	-	12.3	-	-	-	-	12.3
Net earnings	-	-	-	202.9	-	-	-	202.9
Other comprehensive income	-	-	-	-	-	-	9.5	9.5
Acquisition of treasury stock	(1,889,742)	-	-	-	1,889,742	(165.0)	-	(165.0)
December 31, 2022	<u>45,572,185</u>	<u>\$ 0.6</u>	<u>\$ 573.6</u>	<u>\$ 1,169.9</u>	<u>17,364,635</u>	<u>\$ (1,109.0)</u>	<u>\$ (100.1)</u>	<u>\$ 535.0</u>

*See accompanying notes to consolidated financial statements beginning on page 42.*

Armstrong World Industries, Inc., and Subsidiaries  
Consolidated Statements of Cash Flows  
(amounts in millions)

	Years Ended December 31,		
	2022	2021	2020
Cash flows from operating activities:			
Net earnings (loss)	\$ 202.9	\$ 183.2	\$ (99.1)
Adjustments to reconcile net earnings (loss) to net cash provided by operating activities:			
Depreciation and amortization	83.7	96.5	84.0
Write-off of debt refinancing fees	0.6	-	-
Loss on disposal of discontinued operations	-	0.4	16.4
Gain related to sale of fixed and intangible assets	-	-	(21.0)
Deferred income taxes	(1.6)	8.7	(89.3)
Share-based compensation	14.3	11.3	6.8
Equity earnings from joint venture	(77.6)	(87.7)	(64.0)
U.S. pension (credit) cost	(0.7)	0.1	367.7
Loss (gain) from change in fair value of contingent consideration	11.0	(4.1)	0.1
Payments of contingent consideration in excess of acquisition date fair value	(1.9)	-	-
Other non-cash adjustments, net	1.0	0.9	0.9
Changes in operating assets and liabilities:			
Receivables	(12.4)	(30.9)	12.7
Inventories	(19.7)	(10.6)	(7.7)
Accounts payable and accrued expenses	(1.8)	38.6	(11.9)
Income taxes receivable and payable, net	(6.9)	(2.0)	35.2
Other assets and liabilities	(8.5)	(17.2)	(12.0)
Net cash provided by operating activities	<u>182.4</u>	<u>187.2</u>	<u>218.8</u>
Cash flows from investing activities:			
Purchases of property, plant and equipment	(74.8)	(79.8)	(55.4)
Return of investment from joint venture	104.5	78.3	81.5
Cash paid for acquisitions, net of cash acquired	(2.8)	(0.7)	(164.6)
Proceeds from the sale of assets	-	0.1	21.7
Payments of proceeds from Knauf to investment in joint venture	-	-	(25.9)
Payments to Knauf upon disposal of discontinued operations	-	(11.8)	(6.4)
Proceeds from company-owned life insurance, net	1.3	-	8.0
Net cash provided by (used for) investing activities	<u>28.2</u>	<u>(13.9)</u>	<u>(141.1)</u>
Cash flows from financing activities:			
Proceeds from short-term debt	-	-	30.0
Payments of short-term debt	-	-	(30.0)
Proceeds from revolving credit facility	355.0	95.0	290.0
Payments of revolving credit facility	(315.0)	(155.0)	(180.0)
Proceeds from long-term debt	450.0	-	-
Payments of long-term debt	(468.7)	(25.0)	(6.3)
Financing costs	(3.1)	-	-
Dividends paid	(44.2)	(41.4)	(39.2)
Payments from share-based compensation plans, net of tax	(2.0)	(3.6)	(4.8)
Payments for finance leases	(2.2)	(2.1)	(1.8)
Payments of acquisition related contingent consideration	(6.7)	-	-
Payments for treasury stock acquired	(165.0)	(80.0)	(44.4)
Net cash (used for) provided by financing activities	<u>(201.9)</u>	<u>(212.1)</u>	<u>13.5</u>
Effect of exchange rate changes on cash and cash equivalents	(0.8)	-	0.4
Net increase (decrease) in cash and cash equivalents	7.9	(38.8)	91.6
Cash and cash equivalents at beginning of year	98.1	136.9	45.3
Cash and cash equivalents at end of year	<u>\$ 106.0</u>	<u>\$ 98.1</u>	<u>\$ 136.9</u>
Supplemental Cash Flow Disclosures:			
Interest paid	\$ 26.9	\$ 21.5	\$ 24.1
Income tax payments, net	63.2	52.5	10.9
Amounts in accounts payable for capital expenditures	2.8	0.3	1.0

*See accompanying notes to consolidated financial statements beginning on page 42.*

Armstrong World Industries, Inc., and Subsidiaries  
Notes to Consolidated Financial Statements  
(dollar amounts in millions, except share data)

**NOTE 1. BUSINESS**

Armstrong World Industries, Inc. (“AWI”) is a Pennsylvania corporation incorporated in 1891. When we refer to “AWI,” the “Company,” “we,” “our” and “us” in these notes, we are referring to AWI and its subsidiaries.

**Acquisitions**

In November 2022, we acquired the business and assets of GC Products, Inc. (“GC Products”), based in Lincoln, CA. GC Products is a designer and manufacturer of glass-reinforced-gypsum, glass-reinforced-cement, molded ceiling and specialty wall products with one manufacturing facility.

In December 2020, we acquired all of the issued and outstanding equity of Arktura LLC (“Arktura”) and certain subsidiaries with operations in the United States and Argentina. Arktura is a designer and fabricator of metal and felt ceilings, walls, partitions and facades with one manufacturing facility based in Los Angeles, California.

In August 2020, we acquired the business and assets of Moz Designs, Inc. (“Moz”), based in Oakland, California. Moz is a designer and fabricator of custom architectural metal ceilings, walls, dividers and column covers for interior and exterior applications with one manufacturing facility.

In July 2020, we acquired all of the issued and outstanding capital stock of TURF Design, Inc. (“Turf”), with one manufacturing facility in Elgin, Illinois and a design center in Chicago, Illinois. Turf is a designer and manufacturer of acoustic felt ceilings and wall products.

The operations, assets and liabilities of these acquisitions are included in our Architectural Specialties segment. See Note 5 for further information on our acquisitions.

**COVID-19 Considerations**

The impact of the COVID-19 pandemic on our future consolidated results of operations is uncertain. The extent to which COVID-19 impacts our employees, operations, customers, suppliers and financial results depends on numerous evolving factors that we may not be able to accurately predict, including: the duration and scope of the pandemic (and whether there is a resurgence or multiple resurgences in the future, including the impact of new variants); government actions taken in response to the pandemic, including required shutdowns; the availability, acceptance, distribution and continued effectiveness of vaccines; the impact on construction activity; supply chain disruptions; rising inflation; labor shortages; sustained remote or hybrid work models; our ability to manufacture and sell our products; and the ability of our customers to pay for our products. We did not record any asset impairments, inventory charges or material bad debt reserves related to COVID-19 during 2022, 2021 or 2020, but future events may require such charges, which could have a material adverse effect on our financial condition, liquidity or results of operations.

**NOTE 2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES**

**Consolidation Policy.** The consolidated financial statements and accompanying data in this report include the accounts of AWI and its majority-owned subsidiaries. All significant intercompany transactions have been eliminated from the consolidated financial statements.

**Use of Estimates.** We prepare our financial statements in conformity with U.S. Generally Accepted Accounting Principles (“U.S. GAAP”), which requires management to make estimates and assumptions. These estimates and assumptions affect the reported amounts of assets, liabilities, revenues and expenses. When preparing an estimate, management determines the amount based upon the consideration of relevant internal and external information. Actual results may differ from these estimates.

**Revenue Recognition.** We recognize revenue upon transfer of control of our products to the customer, which typically occurs upon shipment. Our main performance obligation to our customers is the delivery of products in accordance with purchase orders. Each purchase order confirms the transaction price for the products purchased under the arrangement. Direct sales to building materials distributors, home centers, direct customers and retailers represent the majority of our sales. Our standard sales terms are Free On Board (“FOB”) shipping point. We have some sales terms that are FOB destination. At the point of shipment, the customer is required to pay under normal sales terms. In most cases our normal payment terms are 45 days or less and our sales arrangements do not have any material financing components. In addition, our customer arrangements do not produce contract assets or liabilities that are material to our Consolidated Financial Statements. Within our Architectural Specialties segment, the majority of revenues are customer project driven, which includes a minority of revenues derived from the sale of customer specified customized products that have no alternative use to us. The manufacturing cycle for these custom products is typically short.

Armstrong World Industries, Inc., and Subsidiaries  
Notes to Consolidated Financial Statements  
(dollar amounts in millions, except share data)

Incremental costs to fulfill our customer arrangements are expensed as incurred, as the amortization period is less than one year.

Our products are sold with normal and customary return provisions. We provide limited warranties for defects in materials or factory workmanship, sagging and warping, and certain other manufacturing defects. Warranties are not sold separately to customers. Our product warranties place certain requirements on the purchaser, including installation and maintenance in accordance with our written instructions. In addition to our warranty program, under certain limited circumstances, we will occasionally at our sole discretion provide a customer accommodation repair or replacement. Warranty repairs and replacements are most commonly made by professional installers employed by or affiliated with our independent distributors. Reimbursement for costs associated with warranty repairs are provided to our independent distributors through a credit against accounts receivable from the distributor to us. Sales returns and warranty claims have historically not been material and do not constitute separate performance obligations. We often offer incentive programs to our customers, primarily volume rebates and promotions. The majority of our rebates are designated as a percentage of annual customer purchases. We estimate the amount of rebates based on actual sales for the period and accrue for the projected incentive programs' costs. We record the costs of rebate accruals as a reduction to the transaction price.

See Note 4 to the Consolidated Financial Statements for additional information related to our revenues.

Shipping and Handling Costs. We account for product shipping and handling costs as fulfillment activities and present the associated costs in costs of goods sold in the period in which we sell our product.

Advertising Costs. We recognize advertising expenses as they are incurred.

Research and Development Costs. We expense research and development costs as they are incurred.

Business Combinations. We account for acquisitions under the acquisition method and the results of acquired operations are included in the Consolidated Financial Statements from the acquisition date. Acquisition related costs are expensed as incurred. We allocate total consideration to the assets acquired and liabilities assumed based on their estimated fair values, with the remaining unallocated amount recorded as goodwill. Our definite-lived intangible assets are amortized over each respective asset's estimated useful life on a straight-line basis and recorded as a component of operating income (expense). The fair value of acquired intangible assets is estimated by applying discounted cash flow models based on significant inputs not observable in the market. Key assumptions are developed based on each acquirees' historical experience, future projections and comparable market data including future cash flows, long-term growth rates, implied royalty rates, attrition rates and discount rates. Acquisition-related contingent consideration that is classified as a liability is measured at fair value at the acquisition date. Changes in the fair value of contingent consideration liabilities in reporting periods after the acquisition date are recorded within our Consolidated Statements of Operations and Comprehensive Income.

Pension and Postretirement Benefits. We have benefit plans that provide for pension, medical and life insurance benefits to certain eligible employees when they retire from active service. See Note 18 to the Consolidated Financial Statements for disclosures on pension and postretirement benefits.

Taxes. The provision for income taxes has been determined using the asset and liability approach of accounting for income taxes to reflect the expected future tax consequences of events recognized in the financial statements. Deferred income tax assets and liabilities are recognized by applying enacted tax rates to temporary differences that exist as of the balance sheet date, which result from differences in the timing of reported taxable income between tax and financial reporting.

We reduce the carrying amounts of deferred tax assets by a valuation allowance if, based on the available evidence, it is more likely than not that such assets will not be realized. The need to establish valuation allowances for deferred tax assets is assessed quarterly. In assessing the requirement for, and amount of, a valuation allowance in accordance with the more likely than not standard, we give appropriate consideration to all positive and negative evidence related to the realization of the deferred tax assets. This assessment considers, among other matters, the nature, frequency and severity of current and cumulative losses and forecasts of future profitability, the duration of statutory carryforward periods, and our experience with operating loss and tax credit carryforward expirations. A history of cumulative losses is a significant piece of negative evidence used in our assessment. If a history of cumulative losses is incurred for a tax jurisdiction, forecasts of future profitability are generally not used as positive evidence related to the realization of the deferred tax assets in the assessment.

We recognize the tax benefits of an uncertain tax position if those benefits are more likely than not to be sustained based on existing tax law. Additionally, we establish a reserve for tax positions that are more likely than not to be sustained based on existing tax law,

Armstrong World Industries, Inc., and Subsidiaries  
Notes to Consolidated Financial Statements  
(dollar amounts in millions, except share data)

but uncertain in the ultimate benefit to be sustained upon examination by the relevant taxing authorities. Unrecognized tax benefits are subsequently recognized at the time the more likely than not recognition threshold is met, the tax matter is effectively settled or the statute of limitations for the relevant taxing authority to examine and challenge the tax position has expired, whichever is earliest.

Taxes collected from customers and remitted to governmental authorities are reported on a net basis.

Earnings per Share. Basic earnings per share is computed by dividing the earnings attributable to common shares by the weighted average number of shares of common stock outstanding during the period. Diluted earnings per share reflects the potential dilution of securities that could share in the earnings and is calculated using the treasury stock method.

Cash and Cash Equivalents. Cash and cash equivalents include cash on hand and short-term investments that have maturities of three months or less when purchased.

Concentration of Credit. We principally sell products to customers in building products industries. We monitor the creditworthiness of our customers and generally do not require collateral. Revenues from two commercial distributors, included within our Mineral Fiber and Architectural Specialties segments, individually exceeded 10% of our revenues in 2022, 2021 and 2020. Gross sales to these two customers totaled \$547.8 million, \$495.8 million and \$370.3 million in 2022, 2021 and 2020, respectively.

Receivables. We sell our products to select, pre-approved customers using customary trade terms that allow for payment in the future. Customer trade and miscellaneous receivables (which include supply related rebates and other), net of allowances for doubtful accounts, customer credits and warranties, are reported in accounts and notes receivable, net. Cash flows from the collection of receivables are classified as operating cash flows on the Consolidated Statements of Cash Flows.

We establish creditworthiness prior to extending credit. We estimate the recoverability of receivables each period. This estimate is based upon new information in the period, which can include the review of any available financial statements and forecasts, as well as discussions with legal counsel and the management of the debtor company. When events occur that impact the collectability of the receivable, all or a portion of the receivable is reserved. Account balances are charged off against the allowance when the potential for recovery is considered remote. We do not have any off-balance sheet credit exposure related to our customers.

Inventories. Inventories are valued at the lower of cost and net realizable value. See Note 8 to the Consolidated Financial Statements for further information on our accounting for inventories.

Property Plant and Equipment. Property plant and equipment is recorded at cost reduced by accumulated depreciation and amortization. Depreciation and amortization expense is recognized on a straight-line basis over the assets' estimated useful lives. Machinery and equipment includes manufacturing equipment (depreciated over 2 to 15 years), computer equipment (depreciated over 3 to 5 years) and office furniture and equipment (depreciated over 5 to 7 years). Within manufacturing equipment, assets that are subject to accelerated obsolescence or wear out quickly, such as dryer components, are generally depreciated over shorter periods while heavy production equipment, such as conveyors and production presses, are generally depreciated over longer periods. Buildings are depreciated over 15 to 30 years, depending on factors such as type of construction and use. Computer software is amortized over 3 to 7 years.

Property, plant and equipment is tested for impairment by asset group when indicators of impairment are present, such as operating losses and/or negative cash flows for each identified asset group. If an indication of impairment exists, we compare the carrying amount of the asset group to the estimated undiscounted future cash flows expected to be generated by the asset group. If the carrying value exceeds the undiscounted future cash flows, we determine the fair value of the asset group based on discounted future cash flows expected to be generated by the asset group, or based on management's estimated exit price assuming the assets could be sold in an orderly transaction between market participants, or estimated salvage value if no sale is assumed. If the fair value is less than the carrying value of the asset group, we record an impairment charge equal to the difference between the fair value and carrying value of the asset group. Impairments of assets related to our manufacturing operations are recorded in cost of goods sold. We did not test tangible assets within our continuing operations for impairment in 2022, 2021 or 2020 as no indicators of impairment existed.

When assets are disposed of or retired, their costs and related depreciation or amortization are removed from the financial statements, and any resulting gains or losses are normally reflected in cost of goods sold or selling, general and administrative ("SG&A") expenses depending on the nature of the asset.

Leases. We enter into operating and finance leases for certain manufacturing plants, warehouses, equipment and automobiles. Our leases have remaining lease terms of up to 15 years. Several leases include options for us to purchase leased items at fair value or



Armstrong World Industries, Inc., and Subsidiaries  
Notes to Consolidated Financial Statements  
(dollar amounts in millions, except share data)

renew for up to 5 years, or multiple 5-year renewal periods. Some of our leases include early termination options. We consider all of these options in determining the lease term used to establish our right-of-use (“ROU”) assets and lease liabilities when it is reasonably certain that we will exercise that option. Our lease agreements do not contain any residual value guarantees or material restrictive covenants.

We have lease agreements with lease and non-lease components, which we have elected to combine to determine the ROU assets and lease liabilities. Short-term leases with an initial term of 12 months or less are not recorded on the balance sheet. We recognize lease expense for these leases on a straight-line basis over the lease term.

As most of our leases do not provide an implicit rate, we use our Incremental Borrowing Rate (“IBR”) based on information that is available at the lease commencement date to compute the present value of lease payments. Relevant information used in determining the IBR includes the transactional currency of the lease and the lease term.

Asset Retirement Obligations. We recognize the fair value of obligations associated with the retirement of tangible long-lived assets in the period in which they are incurred. Upon initial recognition of a liability, the discounted cost is capitalized as part of the related long-lived asset and depreciated over the corresponding asset’s useful life. Over time, accretion of the liability is recognized as an operating expense to reflect the change in the liability’s present value.

Goodwill and Intangible Assets. Our definite-lived intangible assets are primarily customer relationships (amortized over 2 to 20 years), developed technology (amortized over 13 to 20 years) and acquired internally-developed software (amortized over 7 years). We review definite-lived intangible assets for impairment by asset group when indicators of impairment are present, such as operating losses and/or negative cash flows for the respective asset group. If an indication of impairment exists, we compare the carrying amount of the asset group to the estimated undiscounted future cash flows expected to be generated by the asset group. If the carrying value exceeds the undiscounted future cash flows, we determine the fair value of the asset group based on discounted future cash flows expected to be generated by the asset group or based on management’s estimated exit price assuming the assets could be sold in an orderly transaction between market participants. If the fair value is less than the carrying value of the asset group, we record an impairment charge equal to the difference between the fair value and carrying value of the asset group. We did not test definite-lived intangible assets within our continuing operations for impairment in 2022, 2021 or 2020 as no indicators of impairment existed.

Our indefinite-lived assets include goodwill and other intangibles, primarily trademarks and brand names, with Armstrong representing our primary trademark. Trademarks and brand names are integral to our corporate identity and are expected to contribute indefinitely to our cash flows. Accordingly, they have been assigned an indefinite life. We conduct our annual impairment tests on these indefinite-lived intangible assets and goodwill during the fourth quarter. These assets undergo more frequent tests if an indication of possible impairment exists. When performing an impairment test for indefinite-lived intangible assets and goodwill, we compare the carrying amount of the asset (when testing indefinite-lived intangible assets) and reporting unit (when testing goodwill) to the estimated fair value. For indefinite-lived intangible assets, the estimated fair value is based on discounted future cash flows using the relief from royalty method. For goodwill, the estimated fair value is based on discounted future cash flows expected to be generated by the reporting unit. If the fair value is less than the carrying value of the asset/reporting unit, we record an impairment charge equal to the difference between the fair value and carrying value of the asset/reporting unit. We did not test indefinite-lived intangible assets within our continuing operations for impairment during any interim periods during 2022, as no indicators of impairment existed. We completed our annual impairment test in the fourth quarter of 2022 and no impairment charges were recorded in 2022, 2021 or 2020.

See Note 13 to the Consolidated Financial Statements for disclosure on intangible assets.

Foreign Currency Transactions. Assets and liabilities of our subsidiaries operating outside the United States that are accounted in a functional currency other than U.S. dollars are translated using the period end exchange rate. Revenues and expenses are translated at exchange rates effective during each month. Foreign currency translation gains or losses are included as a component of accumulated other comprehensive (loss) within shareholders' equity. Gains or losses on foreign currency transactions are recognized through earnings.

Financial Instruments and Derivatives. We use derivatives and other financial instruments to offset the effect of interest rate variability. Derivatives are recognized on the balance sheet at fair value. For derivatives that meet the criteria as designated cash flow hedges, the changes in the fair value of the derivative are recognized in other comprehensive (loss) income until the hedged item is recognized in operations. See Notes 19 and 20 to the Consolidated Financial Statements for further discussion.

Armstrong World Industries, Inc., and Subsidiaries  
Notes to Consolidated Financial Statements  
(dollar amounts in millions, except share data)

Share-based Employee Compensation. We generally recognize share-based compensation expense on a straight-line basis over the vesting period for the entire award. Compensation expense for performance-based awards with non-market-based conditions are also recognized over the vesting period for the entire award, however, compensation expense may vary based on the expectations for actual performance relative to defined performance measures. We estimate forfeitures based on actual historical forfeitures. See Note 22 to the Consolidated Financial Statements for additional information on share-based employee compensation.

Treasury Stock. Common shares repurchased by AWI are recorded on the settlement date at cost as treasury shares and result in a reduction of equity. We may reissue these treasury shares. When treasury shares are reissued, we determine the cost using the First-in, first-out cost method (“FIFO”). The difference between the cost of the treasury shares and reissuance price is included in additional paid-in capital or retained earnings.

NOTE 3. NATURE OF OPERATIONS

Our operating segments are as follows: Mineral Fiber, Architectural Specialties and Unallocated Corporate.

*Mineral Fiber* – produces suspended mineral fiber and soft fiber ceiling systems. Our mineral fiber products offer various performance attributes such as acoustical control, rated fire protection, aesthetic appeal, and health and sustainability features. Ceiling products are sold to resale distributors, ceiling systems contractors and wholesalers and retailers (including large home centers). The Mineral Fiber segment also includes the results of our Worthington Armstrong Venture (“WAVE”) joint venture with Worthington Industries, Inc., which manufactures and sells suspension system (grid) products and ceiling component products that are invoiced by both AWI and WAVE. Segment results relating to WAVE consist primarily of equity earnings and reflect our 50% equity interest in the joint venture. Ceiling component products consist of ceiling perimeters and trim, in addition to grid products that support drywall ceiling systems. For some customers, WAVE sells its suspension systems products to AWI for resale to customers. Mineral Fiber segment results reflect those sales transactions. The Mineral Fiber segment also includes all assets and liabilities not specifically allocated to our Architectural Specialties or Unallocated Corporate segment, including all property and related depreciation associated with our Lancaster, PA headquarters. Operating results for the Mineral Fiber segment include a significant majority of allocated Corporate administrative expenses that represent a reasonable allocation of general services to support its operations.

*Architectural Specialties* – produces, designs and sources ceilings and walls for use in commercial settings. Products are available in numerous materials, such as metal, felt and wood, in addition to various colors, shapes and designs. Products offer various performance attributes such as acoustical control, rated fire protection and aesthetic appeal. We sell standard, premium and customized products, a portion of which are derived from sourced products. Architectural Specialties products are sold primarily to resale distributors and direct customers, primarily ceiling systems contractors. The majority of this segment's revenues are project driven, which can lead to more volatile sales patterns due to project scheduling uncertainty. Operating results for the Architectural Specialties segment include a portion of allocated Corporate administrative expenses that represent a reasonable allocation of general services to support its operations.

*Unallocated Corporate* – includes certain assets, liabilities, income and expenses that have not been allocated to our other business segments and consists of: cash and cash equivalents, the net funded status of our U.S. Retirement Income Plan (“RIP”), the estimated fair value of interest rate swap contracts, outstanding borrowings under our senior secured credit facility and income tax balances. Our Unallocated Corporate segment also includes all expenses related to our German defined benefit pension plan that was formerly reported in our Europe, Middle East and Africa (including Russia) (“EMEA”) and Pacific Rim segments and was not included in the sale of certain subsidiaries comprising our businesses and operations in EMEA and the Pacific Rim, including the corresponding businesses and operations conducted by WAVE (collectively, the “Sale”) to Knauf International GmbH (“Knauf”).

Armstrong World Industries, Inc., and Subsidiaries  
Notes to Consolidated Financial Statements  
(dollar amounts in millions, except share data)

<u>For the year ended 2022</u>	<u>Mineral Fiber</u>	<u>Architectural Specialties</u>	<u>Unallocated Corporate</u>	<u>Total</u>
Net sales to external customers	\$ 887.4	\$ 345.7	\$ -	\$ 1,233.1
Equity (earnings) from joint venture	(77.6)	-	-	(77.6)
Segment operating income (loss)	260.9	21.7	(3.9)	278.7
Segment assets	1,096.9	387.5	202.8	1,687.2
Depreciation and amortization	69.5	14.2	-	83.7
Investment in joint venture	23.9	-	-	23.9
Purchases of property, plant and equipment	63.8	11.0	-	74.8

<u>For the year ended 2021</u>	<u>Mineral Fiber</u>	<u>Architectural Specialties</u>	<u>Unallocated Corporate</u>	<u>Total</u>
Net sales to external customers	\$ 818.5	\$ 288.1	\$ -	\$ 1,106.6
Equity (earnings) from joint venture	(87.7)	-	-	(87.7)
Segment operating income (loss)	261.2	4.2	(5.4)	260.0
Segment assets	1,133.9	366.3	209.8	1,710.0
Depreciation and amortization	69.9	26.6	-	96.5
Investment in joint venture	50.0	-	-	50.0
Purchases of property, plant and equipment	64.8	15.0	-	79.8

<u>For the year ended 2020</u>	<u>Mineral Fiber</u>	<u>Architectural Specialties</u>	<u>Unallocated Corporate</u>	<u>Total</u>
Net sales to external customers	\$ 726.0	\$ 210.9	\$ -	\$ 936.9
Equity (earnings) from joint venture	(64.0)	-	-	(64.0)
Segment operating income	218.7	22.3	13.8	254.8
Segment assets	1,101.1	357.7	259.7	1,718.5
Depreciation and amortization	71.8	12.2	-	84.0
Investment in joint venture	41.2	-	-	41.2
Purchases of property, plant and equipment	45.5	9.9	-	55.4

Segment operating income (loss) is the measure of segment profit or loss reviewed by the chief operating decision maker. The sum of the segments' operating income (loss) equals the total consolidated operating income as reported on our Consolidated Statements of Operations and Comprehensive Income. The following reconciles our total consolidated operating income to earnings (loss) from continuing operations before income taxes. These items are only measured and managed on a consolidated basis:

	<u>2022</u>	<u>2021</u>	<u>2020</u>
Total consolidated operating income	\$ 278.7	\$ 260.0	\$ 254.8
Interest expense	27.1	22.9	24.1
Other non-operating (income) expense, net	(6.0)	(5.6)	357.4
Earnings (loss) from continuing operations before income taxes	<u>\$ 257.6</u>	<u>\$ 242.7</u>	<u>\$ (126.7)</u>

Accounting policies of the segments are the same as those described in the summary of significant accounting policies.

The sales in the table below are allocated to geographic areas based on the location of our selling entities.

<u>Geographic Areas</u>	<u>2022</u>	<u>2021</u>	<u>2020</u>
<u>Net sales</u>			
Mineral Fiber:			
United States	\$ 816.3	\$ 754.2	\$ 674.1
Canada	71.1	64.3	51.9
Total Mineral Fiber	<u>887.4</u>	<u>818.5</u>	<u>726.0</u>
Architectural Specialties:			
United States	\$ 322.1	\$ 268.0	\$ 192.8
Canada	23.6	20.1	18.1
Total Architectural Specialties	<u>345.7</u>	<u>288.1</u>	<u>210.9</u>
Total net sales	<u>\$ 1,233.1</u>	<u>\$ 1,106.6</u>	<u>\$ 936.9</u>

Armstrong World Industries, Inc., and Subsidiaries  
Notes to Consolidated Financial Statements  
(dollar amounts in millions, except share data)

Our product-based Mineral Fiber and Architectural Specialties segment net sales represent the product-based group offerings we sell to external customers.

	2022	2021
<u>Property, plant and equipment, net at December 31,</u>		
Mineral Fiber:		
United States	\$ 496.8	\$ 490.6
Total Mineral Fiber	<u>496.8</u>	<u>490.6</u>
Architectural Specialties:		
United States	\$ 52.3	\$ 46.5
Canada	5.3	5.7
Total Architectural Specialties	<u>57.6</u>	<u>52.2</u>
Total property, plant and equipment, net	<u>\$ 554.4</u>	<u>\$ 542.8</u>

During 2020, we recorded a \$21.0 million gain related to the sale of our idled mineral fiber plant in China, inclusive of accumulated foreign currency translation gains.

NOTE 4. REVENUE

Disaggregation of Revenues

Our Mineral Fiber and Architectural Specialties operating segments both manufacture and sell ceiling and wall systems (primarily mineral fiber, fiberglass wool, metal, wood, wood fiber, glass-reinforced-gypsum and felt) throughout the Americas. We disaggregate revenue based on our product-based segments and major customer channels, as they represent the most appropriate depiction of how the nature, amount and timing of revenues and cash flows are affected by economic factors. Net sales by major customer channel are as follows:

*Distributors* – represents net sales to building materials distributors who re-sell our products to contractors, subcontractors’ alliances, large architect and design firms, and major facility owners. Geographically, this category includes sales throughout the U.S., Canada, and Latin America.

*Home centers* – represents net sales to home centers, such as Lowe’s Companies, Inc. and The Home Depot, Inc. This category includes sales primarily to U.S. customers.

*Direct customers* – represents net sales to contractors, subcontractors, and large architect and design firms. This category includes sales primarily to U.S. customers.

*Retailers and other* – represents net sales to independent retailers and certain national account customers, including wholesalers who re-sell our products to dealers who service builders, contractors and consumers, online customers, major facility owners, group purchasing organizations and maintenance, repair and operating entities. Geographically, this category includes sales throughout the U.S. and Canada, and Latin America.

The following tables present net sales by major customer group within the Mineral Fiber and Architectural Specialties segments for the years ended December 31, 2022, 2021 and 2020:

<u>Mineral Fiber</u>	2022	2021	2020
Distributors	\$ 654.1	\$ 603.9	\$ 525.2
Home centers	99.1	94.4	96.1
Direct customers	61.0	59.2	54.3
Retailers and other	73.2	61.0	50.4
Total	<u>\$ 887.4</u>	<u>\$ 818.5</u>	<u>\$ 726.0</u>

Armstrong World Industries, Inc., and Subsidiaries  
Notes to Consolidated Financial Statements  
(dollar amounts in millions, except share data)

Architectural Specialties	2022	2021	2020
Distributors	\$ 174.4	\$ 150.5	\$ 135.5
Direct customers	168.0	134.6	73.3
Retailers and other	3.3	3.0	2.1
Total	<u>\$ 345.7</u>	<u>\$ 288.1</u>	<u>\$ 210.9</u>

NOTE 5. ACQUISITIONS

GC PRODUCTS

On November 4, 2022, we acquired the business and assets of GC Products for \$2.8 million of cash. The total fair value of tangible assets acquired, less liabilities assumed, was \$0.3 million. The total fair value of intangible assets acquired was \$1.8 million, resulting in goodwill of \$0.7 million. Identified intangible assets consist primarily of amortizable technologies of \$0.7 million, amortizable customer relationships of \$0.6 million, and a non-compete agreement of \$0.2 million. All of the acquired goodwill is deductible for tax purposes. The 2022 acquisition of GC Products did not have a material impact on reported net sales or net earnings for the year ended December 31, 2022.

ARKTURA

On December 16, 2020, we acquired all the issued and outstanding equity of Arktura and its subsidiaries with operations in the United States and Argentina for \$91.2 million, net of \$0.1 million of cash acquired and working capital adjustments. A portion of the cash consideration paid at closing is being held in escrow to secure potential claims for indemnification under the agreement. Under the terms of the agreement, and contingent upon continued employment with AWI, we are obligated to pay the sellers an additional \$24.0 million in cash payments over a period of five years and issued an additional \$6.0 million of restricted stock which will vest over a period of five years. Contingent upon employment with AWI, we also issued an additional \$1.4 million of restricted stock to key Arktura employees which will vest over a period of three years. Compensation expense associated with these cash payments and restricted stock awards are recorded over the required service and vesting periods.

The total fair value of tangible assets acquired, less liabilities assumed, was \$0.9 million. The acquisition resulted in \$57.4 million of goodwill. The following table summarizes the fair values of identifiable intangible assets acquired, and their estimated useful lives:

	Fair Value at Acquisition Date	Estimated Useful Life
Tradenames	\$ 12.1	Indefinite
Software	9.1	7 years
Backlog	5.5	1 year
Customer relationships	3.6	1 year
Non-compete agreements	2.1	5 years
Patents	0.6	13-19 years
Total identifiable intangible assets	<u>\$ 33.0</u>	

The weighted average amortization period for acquired intangible assets as of the date of acquisition was 4.3 years. Goodwill from the Arktura acquisition relates to many factors, including the technical competencies and capabilities of the acquired workforce in the fields of architecture, design, materials science, technology and software, and our strategic intent to integrate and leverage those competencies and capabilities to advance and expand our portfolio of solutions and offerings. All of the acquired goodwill is deductible for tax purposes.

In connection with the Arktura acquisition, we formed Arktura Ventures LLC, an incubator entity for the development and commercialization of new products and solutions in the architecture, engineering and construction spaces. As of December 31, 2022, the venture entity had minimal funding and operations.

MOZ

On August 24, 2020, we acquired the business and assets of Moz for \$4.2 million of cash paid at closing and the potential for a contingent earn-out payable in 2022 not to exceed \$4.7 million. We, with the assistance of an independent, third-party valuation specialist, utilized a Monte Carlo simulation to determine the estimated fair value of the contingent consideration at the acquisition

Armstrong World Industries, Inc., and Subsidiaries  
Notes to Consolidated Financial Statements  
(dollar amounts in millions, except share data)

date of \$2.7 million, resulting in total acquisition consideration of \$6.9 million. The total fair value of liabilities assumed, less tangible assets acquired, was \$0.4 million. The total fair value of identifiable intangible assets acquired was \$2.7 million, comprised of non-amortizable tradenames of \$1.5 million, amortizable customer relationships of \$0.6 million and backlog of \$0.6 million, resulting in \$4.6 million of goodwill. All of the acquired goodwill is deductible for tax purposes.

The contingent consideration was payable upon achievement of certain performance objectives through December 31, 2021. The contingent consideration was classified as a current liability as of December 31, 2021, and was paid in the first quarter of 2022. See Note 19 for details related to the fair value of the contingent consideration.

#### TURF

On July 27, 2020, we acquired all the issued and outstanding capital stock of Turf for a purchase price of \$70.0 million of cash paid at closing and the potential for a contingent earn-out payable in 2022 and 2023 not to exceed \$48.0 million. We, with the assistance of an independent, third-party valuation specialist, utilized a Monte Carlo simulation to determine the estimated fair value of the contingent consideration at the acquisition date of \$14.1 million, resulting in total acquisition consideration of \$84.1 million. The total fair value of tangible assets acquired, less liabilities assumed, was \$4.8 million. The total fair value of identifiable intangible assets acquired was \$27.9 million, resulting in \$51.4 million of goodwill. We identified non-amortizable tradenames of \$9.6 million. We also identified amortizable intangible assets comprised of customer relationships of \$7.7 million, patents of \$5.8 million and a non-compete agreement of \$3.3 million that are being amortized on a straight-line basis over their estimated useful lives of 2, 20, and 5 years, respectively. The weighted average amortization period for acquired intangible assets as of the date of acquisition was 8.3 years. Goodwill from the Turf acquisition relates to many factors, including the design talents of the acquired workforce, fabrication capabilities and capacity, broad-based go-to-market channels and relationships, established leadership in a growing product category, and our strategic intent to leverage its position and attributes to grow and expand our portfolio of solutions. All of the acquired goodwill is deductible for tax purposes.

The contingent consideration is payable upon achievement of certain future performance objectives through 2022. The contingent consideration included up to \$24.0 million in additional cash consideration for performance at certain revenue and earnings before interest, taxes, depreciation and amortization (“EBITDA”) growth targets.

A portion of Turf's contingent consideration was payable upon the achievement of certain performance objectives through December 31, 2021, and the remaining portion is payable upon the achievement of certain performance objectives through December 31, 2022. The contingent consideration payable for the years ended December 31, 2022 and 2021 was classified as a current liability as of December 31, 2022 and 2021, and was paid in the first quarter of 2023 and 2022, respectively. See Note 19 for details related to the fair value of the contingent consideration.

#### PRO FORMA FINANCIAL INFORMATION

The following table summarizes aggregate audited as reported information and aggregate unaudited pro forma information assuming the acquisitions of Arktura, Moz and Turf had occurred on January 1, 2020. The unaudited pro forma results include the depreciation and amortization associated with the acquired assets, compensation expense related to cash payments and equity awards granted to employees of the acquired companies and adjustments to net sales for the purchase accounting effects of recording deferred revenue at fair value. The unaudited pro forma results do not include any expected benefits of the acquisitions, adjustments to as reported changes in the fair value of the contingent consideration or adjustments to the effective tax rate. Accordingly, the unaudited pro forma results are not necessarily indicative of either future results of operations or results that might have been achieved had the acquisitions been consummated as of January 1, 2020.

	<u>2020</u>
Net sales from continuing operations, pro forma (unaudited)	\$ 1,009.0
Net sales from continuing operations, as reported	936.9
Net loss from continuing operations, pro forma (unaudited)	(69.2)
Net loss from continuing operations, as reported	(84.1)

Armstrong World Industries, Inc., and Subsidiaries  
Notes to Consolidated Financial Statements  
(dollar amounts in millions, except share data)

**NOTE 6. DISCONTINUED OPERATIONS**

**EMEA AND PACIFIC RIM BUSINESSES**

In 2019, we completed the Sale of certain subsidiaries to Knauf. In 2020, we recorded a pre-tax loss of \$17.2 million, primarily related to an \$11.4 million purchase price adjustment related to certain pension liabilities included in the Sale in addition to working capital and other adjustments. In 2021, we recorded a pre-tax loss on sale of \$0.4 million for final purchase price adjustments related to certain pension liabilities included in the Sale and paid \$11.8 million to Knauf related to this purchase price adjustment. In 2022, we recorded a \$2.0 million tax benefit related to federal tax statute of limitation closures.

**FLOORING BUSINESSES**

**Separation and Distribution of Armstrong Flooring, Inc. (“AFI”)**

On April 1, 2016, we completed our separation of AFI by transferring the assets and liabilities related primarily to our Resilient and Wood Flooring segments to AFI and then distributing the common stock of AFI to our shareholders at a ratio of one share of AFI common stock for every two shares of AWI common stock. In 2022, we recorded a \$1.0 million tax benefit related to federal tax statute of limitation closures.

**European Resilient Flooring**

During 2020, we recorded a gain of \$0.8 million related to Accumulated Other Comprehensive Income (“AOCI”) adjustments from a previously discontinued foreign flooring entity, which was dissolved in the second quarter of 2020. The AOCI adjustments related to accumulated foreign currency translation amounts.

**Summarized Financial Information of Discontinued Operations**

The following tables detail the businesses and line items that comprise discontinued operations on the Consolidated Statements of Operations and Comprehensive Income.

	EMEA and Pacific Rim Businesses	Flooring Businesses	Total
<b>2022</b>			
Earnings from discontinued businesses before income tax	\$ -	\$ -	\$ -
Income tax benefit	(2.0)	(1.0)	(3.0)
Net earnings from discontinued operations, net of tax	<u>\$ 2.0</u>	<u>\$ 1.0</u>	<u>\$ 3.0</u>
Net earnings from discontinued operations	<u>\$ 2.0</u>	<u>\$ 1.0</u>	<u>\$ 3.0</u>
			<b>EMEA and Pacific Rim Businesses</b>
<b>2021</b>			
(Loss) from disposal of discontinued businesses, before income tax			\$ (0.4)
Income tax expense			1.7
(Loss) from disposal of discontinued businesses, net of tax			<u>\$ (2.1)</u>
Net (loss) from discontinued operations			<u>\$ (2.1)</u>
	<b>EMEA and Pacific Rim Businesses</b>	<b>Flooring Businesses</b>	<b>Total</b>
<b>2020</b>			
(Loss) gain from disposal of discontinued businesses, before income tax	\$ (17.2)	\$ 0.8	\$ (16.4)
Income tax (benefit)	(1.4)	-	(1.4)
(Loss) gain from disposal of discontinued businesses, net of tax	<u>\$ (15.8)</u>	<u>\$ 0.8</u>	<u>\$ (15.0)</u>
Net (loss) earnings from discontinued operations	<u>\$ (15.8)</u>	<u>\$ 0.8</u>	<u>\$ (15.0)</u>

Armstrong World Industries, Inc., and Subsidiaries  
Notes to Consolidated Financial Statements  
(dollar amounts in millions, except share data)

The following is a summary of total gains and losses related to our former EMEA and Pacific Rim businesses through the date of disposal, and gains on the dissolution of our previously discontinued flooring entity, which are presented as discontinued operations and included as components of operating and investing cash flows on our Consolidated Statements of Cash Flows:

	2021	2020
Loss on sale to Knauf <sup>(1)</sup>	\$ 0.4	\$ 17.2
Gain on dissolution of flooring entity <sup>(2)</sup>	-	(0.8)

- (1) Represents certain pension liabilities, working capital and other adjustments.  
(2) Represents AOCI adjustments related to accumulated foreign currency translation amounts.

NOTE 7. ACCOUNTS AND NOTES RECEIVABLE

	December 31, 2022	December 31, 2021
Customer receivables	\$ 107.4	\$ 104.7
Miscellaneous receivables	8.2	7.9
Less allowance for warranties, discounts and losses	(3.2)	(3.5)
Accounts and notes receivable, net	<u>\$ 112.4</u>	<u>\$ 109.1</u>

We sell our products to select, pre-approved customers whose businesses are affected by changes in economic and market conditions. We consider these factors and the financial condition of each customer when establishing our allowance for losses from doubtful accounts.

As of December 31, 2022 and 2021, miscellaneous receivables included \$4.8 million and \$5.9 million of Employee Retention Credit (“ERC”) receivables, respectively, representing a refundable payroll tax credit for eligible wages paid to our employees in 2020 and 2021 under the Coronavirus Aid, Relief, and Economic Recovery Act (“CARES Act”). During the first quarter of 2023, we received \$4.1 million of outstanding ERC receivables. See Note 16 to the Consolidated Financial Statements for further information.

NOTE 8. INVENTORIES

	December 31, 2022	December 31, 2021
Finished goods	\$ 60.9	\$ 49.9
Goods in process	6.5	6.4
Raw materials and supplies	63.0	48.4
Less LIFO reserves	(20.4)	(14.5)
Total inventories, net	<u>\$ 110.0</u>	<u>\$ 90.2</u>

Approximately 58% and 66% of our total inventory in 2022 and 2021, respectively, were valued on a Last-in, first-out (“LIFO”) basis.

The distinction between the use of different methods of inventory valuation is primarily based on type of inventory, legal entities and/or geographical locations. The following table summarizes the amount of inventory that is not accounted for under the LIFO method.

	December 31, 2022	December 31, 2021
U.S. locations	\$ 43.2	\$ 28.0
Canada locations	3.1	2.7
Total	<u>\$ 46.3</u>	<u>\$ 30.7</u>

U.S. locations above generally use the weighted average cost method of inventory valuation and primarily represent certain finished goods sourced from third party suppliers and certain entities within our Architectural Specialties segment, most notably recent acquisitions, that also use the weighted average cost method given the nature of the inventory.

Our Canadian locations use the FIFO method of inventory valuation (or other methods which closely approximate the FIFO method) primarily because the LIFO method is not permitted for local tax reporting purposes. In these situations, a conversion to LIFO would be highly complex and involve excessive cost and effort to achieve under local tax reporting requirements.



Armstrong World Industries, Inc., and Subsidiaries  
Notes to Consolidated Financial Statements  
(dollar amounts in millions, except share data)

**NOTE 9. OTHER CURRENT ASSETS**

	<u>December 31, 2022</u>	<u>December 31, 2021</u>
Prepaid expenses	\$ 16.6	\$ 17.2
Assets held for sale	4.6	4.6
Fair value of derivative assets	3.7	-
Other	1.4	1.3
Total other current assets	<u>\$ 26.3</u>	<u>\$ 23.1</u>

As of December 31, 2022 and 2021, assets held for sale included the property, plant and equipment of our idled Mineral Fiber plant in St. Helens, Oregon.

**NOTE 10. PROPERTY, PLANT AND EQUIPMENT**

	<u>December 31, 2022</u>	<u>December 31, 2021</u>
Land	\$ 31.8	\$ 31.8
Buildings	267.8	257.2
Machinery and equipment	686.1	643.9
Computer software	69.2	52.6
Construction in progress	49.0	51.3
Less accumulated depreciation and amortization	(549.5)	(494.0)
Net property, plant and equipment	<u>\$ 554.4</u>	<u>\$ 542.8</u>

**NOTE 11. EQUITY INVESTMENTS**

Investment in joint venture as of December 31, 2022 and 2021 reflected the equity interest in our 50% investment in our WAVE joint venture. The WAVE joint venture is reflected within the Mineral Fiber segment in our consolidated financial statements using the equity method of accounting.

We use the cumulative earnings approach to determine the appropriate classification of distributions from WAVE within our cash flow statement. For all years presented, cumulative distributions received in prior periods, less distributions that were returns of investment, exceeded our cumulative equity earnings from WAVE as adjusted for the amortization of basis differences. Accordingly, the distributions were reflected as returns of investment in cash flows from investing activity in our Consolidated Statements of Cash Flows for all years presented. Distributions from WAVE in 2022, 2021 and 2020, were \$104.5 million, \$78.3 million, and \$81.5 million, respectively.

In certain markets, we sell WAVE products directly to customers pursuant to specific terms of sale. In those circumstances, we record the sales and associated costs within our consolidated financial statements. The total sales associated with these transactions were \$47.3 million, \$42.3 million and \$35.2 million for the years ended 2022, 2021 and 2020, respectively.

Condensed financial data for WAVE is summarized below.

	<u>December 31, 2022</u>	<u>December 31, 2021</u>
Current assets	\$ 100.8	\$ 119.7
Non-current assets <sup>(1)</sup>	86.3	42.1
Current liabilities <sup>(1)</sup>	31.3	37.1
Other non-current liabilities <sup>(1)</sup>	372.3	297.4

(1) Includes initial ROU assets and lease liabilities of \$29.4 million recognized upon adoption of Accounting Standards Codification Topic 842 – Leases on January 1, 2022.

	<u>2022</u>	<u>2021</u>	<u>2020</u>
Net sales	\$ 458.2	\$ 430.8	\$ 343.3
Gross profit	231.1	244.5	194.7
Net earnings	163.7	184.6	137.8

Our recorded investment in WAVE was higher than our 50% share of the carrying values reported in WAVE's consolidated financial statements by \$132.2 million as of December 31, 2022 and \$136.4 million as of December 31, 2021. These differences are due to our

Armstrong World Industries, Inc., and Subsidiaries  
Notes to Consolidated Financial Statements  
(dollar amounts in millions, except share data)

adoption of fresh-start reporting upon emergence from Chapter 11 in October 2006, while WAVE's consolidated financial statements do not reflect fresh-start reporting. The differences are composed of the following fair value adjustments to assets:

	<u>December 31, 2022</u>	<u>December 31, 2021</u>
Property, plant and equipment	\$ 0.4	\$ 0.4
Other intangibles	101.4	105.6
Goodwill	30.4	30.4
Total	<u>\$ 132.2</u>	<u>\$ 136.4</u>

Other intangibles include customer relationships and trademarks. Customer relationships are amortized over 20 years and trademarks have an indefinite life.

Management regularly evaluates its investment in WAVE for impairment. Based on those evaluations, management concluded that its investment in WAVE was not impaired in 2022, 2021 or 2020.

See discussion in Note 26 to the Consolidated Financial Statements for additional information on this related party.

#### NOTE 12. LEASES

The following table presents our lease costs:

	<u>2022</u>	<u>2021</u>	<u>2020</u>
Operating lease cost	\$ 7.0	\$ 6.4	\$ 5.6
Finance lease cost:			
Amortization of leased assets	\$ 2.4	\$ 2.4	\$ 2.0
Interest on lease liabilities	0.6	0.7	0.6
Total finance lease cost	<u>\$ 3.0</u>	<u>\$ 3.1</u>	<u>\$ 2.6</u>

Short-term lease expense and variable lease cost were not material for the years ended December 31, 2022, 2021 and 2020. As of December 31, 2022, we did not have any material leases that have not yet commenced.

The following table presents supplemental cash flow information related to our leases:

	<u>2022</u>	<u>2021</u>	<u>2020</u>
<u>Cash paid for amounts included in the measurement of lease liabilities</u>			
Operating cash flows from operating leases	\$ 6.8	\$ 6.3	\$ 5.4
Operating cash flows from finance leases	0.6	0.7	0.6
Financing cash flows from finance leases	2.2	2.1	1.8
<u>ROU assets obtained in exchange for lease liabilities</u>			
Operating leases <sup>(1)</sup>	\$ 3.9	\$ 7.3	\$ 5.4
Finance leases	-	0.3	2.6

(1) The years ended December 31, 2022, 2021 and 2020 include increases in ROU assets of \$1.0 million, \$3.2 million and \$0.4 million, respectively, resulting from modifications that did not involve obtaining a new ROU asset. Modifications resulted primarily from changes in the terms of existing leases.

The following table presents the weighted average assumptions used to compute our ROU assets and lease liabilities:

	<u>December 31, 2022</u>	<u>December 31, 2021</u>
<u>Weighted average remaining lease term (in years)</u>		
Operating leases	5.1	5.4
Finance leases	9.4	9.9
<u>Weighted average discount rate</u>		
Operating leases	3.8%	3.4%
Finance leases	3.7%	3.6%

Armstrong World Industries, Inc., and Subsidiaries  
Notes to Consolidated Financial Statements  
(dollar amounts in millions, except share data)

Undiscounted future minimum lease payments as of December 31, 2022, by year and in the aggregate, having non-cancelable lease terms in excess of one year are as follows:

	<u>Operating Leases</u>	<u>Finance Leases</u>
<u>Maturity of lease liabilities</u>		
2023	\$ 6.5	\$ 2.8
2024	4.8	2.6
2025	2.9	2.3
2026	1.7	2.4
2027	1.6	2.5
Thereafter	3.9	7.6
Total lease payments	21.4	20.2
Less interest	(2.3)	(3.4)
Present value of lease liabilities	<u>\$ 19.1</u>	<u>\$ 16.8</u>

NOTE 13. GOODWILL AND INTANGIBLE ASSETS

We conduct our annual impairment testing of goodwill and non-amortizing intangible assets during the fourth quarter. The 2022, 2021 and 2020 reviews concluded that no impairment charges were necessary. See Note 2 to the Consolidated Financial Statements for a discussion of our accounting policy for goodwill and intangible assets.

The following table details amounts related to our goodwill and intangible assets as of December 31, 2022 and 2021:

	Estimated Useful Life	<u>December 31, 2022</u>		<u>December 31, 2021</u>	
		Gross Carrying Amount	Accumulated Amortization	Gross Carrying Amount	Accumulated Amortization
<u>Amortizing intangible assets</u>					
Customer relationships	2-20 years	\$ 182.1	\$ 142.0	\$ 196.7	\$ 144.8
Developed technology	13-20 years	93.8	83.3	92.9	82.6
Software	7 years	9.1	2.6	9.1	1.3
Trademarks and brand names	3-10 years	4.0	2.6	4.0	2.0
Non-compete agreements	3-5 years	5.8	2.6	5.6	1.4
Other	Various	1.1	0.1	0.4	0.1
Total		<u>\$ 295.9</u>	<u>\$ 233.2</u>	<u>\$ 308.7</u>	<u>\$ 232.2</u>
<u>Non-amortizing intangible assets</u>					
Trademarks and brand names	Indefinite	345.0		344.9	
Total intangible assets		<u>\$ 640.9</u>		<u>\$ 653.6</u>	
Goodwill	Indefinite	<u>\$ 167.3</u>		<u>\$ 167.0</u>	

The increase in goodwill as of December 31, 2022 resulted from the acquisition of GC Products, partially offset by a decrease from foreign exchange movements.

	<u>2022</u>	<u>2021</u>	<u>2020</u>
Amortization expense	\$ 16.3	\$ 33.8	\$ 22.1

The expected annual amortization expense for the years 2023 through 2027 are as follows:

2023	\$ 13.9
2024	13.4
2025	12.7
2026	9.2
2027	3.1

Armstrong World Industries, Inc., and Subsidiaries  
Notes to Consolidated Financial Statements  
(dollar amounts in millions, except share data)

NOTE 14. OTHER NON-CURRENT ASSETS

	<u>December 31, 2022</u>	<u>December 31, 2021</u>
Cash surrender value of company-owned life insurance policies	\$ 42.8	\$ 47.2
Investment in employee deferred compensation plans	7.7	9.7
Fair value of derivative assets	7.7	-
Other	1.2	1.0
Total other non-current assets	<u>\$ 59.4</u>	<u>\$ 57.9</u>

NOTE 15. ACCOUNTS PAYABLE AND ACCRUED EXPENSES

	<u>December 31, 2022</u>	<u>December 31, 2021</u>
Payables, trade and other	\$ 105.0	\$ 105.8
Employment costs	20.0	30.3
Current portion of pension and postretirement liabilities	9.9	9.9
Acquisition-related contingent consideration	15.2	8.6
Other	22.4	20.3
Total accounts payable and accrued expenses	<u>\$ 172.5</u>	<u>\$ 174.9</u>

NOTE 16. INCOME TAXES

The tax effects of principal temporary differences between the carrying amounts of assets and liabilities and their tax basis are summarized below. Management believes it is more likely than not that the results of future operations will generate sufficient taxable income in the appropriate jurisdiction to realize deferred tax assets, net of valuation allowances. In arriving at this conclusion, we considered the profit before tax generated for the years 2020 through 2022, future reversals of existing taxable temporary differences, and projections of future profit before tax.

We reduce the carrying amounts of deferred tax assets by a valuation allowance if, based on the available evidence, it is more likely than not that such assets will not be realized. The need to establish valuation allowances for deferred tax assets is assessed quarterly. In assessing the requirement for, and amount of, a valuation allowance in accordance with the more likely than not standard for all periods, we consider all positive and negative evidence related to the realization of the deferred tax assets. This assessment considers, among other matters, the nature, frequency and severity of current and cumulative losses and forecasts of future profitability, the duration of statutory carryforward periods, and our experience with operating loss and tax credit carryforward expirations. A history of cumulative losses is a significant piece of negative evidence used in our assessment. If a history of cumulative losses is incurred for a tax jurisdiction, forecasts of future profitability are not used as positive evidence related to the realization of the deferred tax assets in the assessment.

As of December 31, 2022 and 2021, we had \$675.5 million and \$700.9 million, respectively, of gross state net operating loss (“NOL”) carryforwards expiring between 2023 and 2042. As of December 31, 2022, we had capital loss carryforwards of \$18.8 million that expire between 2024 and 2036. Capital loss carryforwards as of December 31, 2021 were \$18.8 million. As of December 31, 2022, we did not have any foreign tax credit (“FTC”) carryforwards. U.S. FTC carryforwards as of December 31, 2021 were \$0.6 million.

As of December 31, 2022 and 2021, we had valuation allowances of \$48.7 million and \$60.6 million, respectively. As of December 31, 2022, our valuation allowance consisted of \$28.0 million for state deferred tax assets related to operating loss carryforwards, \$17.4 million for federal and state deferred tax assets related to capital loss carryforwards and \$3.3 million for state deferred tax assets related to state tax credits.

We estimate we will need to generate future taxable income of approximately \$360.1 million for state income tax purposes during the respective realization periods (ranging from 2023 to 2042) to be able to fully realize the net deferred income tax assets discussed above. We estimate we will need to generate capital gain income of \$66.4 million to fully realize our federal capital loss carryforwards before they expire between 2024 and 2026. We estimate we will need to generate capital gain income of \$184.6 million to fully realize our state capital loss carryforwards before they expire between 2024 and 2036. Our ability to utilize deferred tax assets may be impacted by certain future events, such as changes in tax legislation or insufficient future taxable income prior to expiration of certain deferred tax assets.

Armstrong World Industries, Inc., and Subsidiaries  
Notes to Consolidated Financial Statements  
(dollar amounts in millions, except share data)

	December 31, 2022	December 31, 2021
<u>Deferred income tax assets (liabilities)</u>		
Net operating losses	\$ 34.2	\$ 42.5
Postretirement benefits	16.7	20.7
Pension benefit liabilities	8.2	11.0
Deferred compensation	7.1	7.9
Foreign tax credit carryforwards	-	0.6
State tax credit carryforwards	4.7	8.7
Capital loss carryforwards	18.8	18.8
Capitalized research expenses	9.4	-
Lease right-of-use liabilities	9.7	9.8
Other	3.8	12.3
Total deferred income tax assets	112.6	132.3
Valuation allowances	(48.7)	(60.6)
Net deferred income tax assets	63.9	71.7
Intangibles	(85.1)	(87.4)
Partnerships and investments	(25.5)	(26.4)
Accumulated depreciation	(86.4)	(80.4)
Prepaid pension costs	(21.2)	(27.8)
Inventories	(4.9)	(4.9)
Lease right-of-use assets	(9.9)	(10.1)
Other	(0.3)	(1.6)
Total deferred income tax liabilities	(233.3)	(238.6)
Net deferred income tax liabilities	\$ (169.4)	\$ (166.9)

	2022	2021	2020
<u>Details of taxes</u>			
Earnings (loss) from continuing operations before income taxes			
Domestic	\$ 251.7	\$ 239.3	\$ (130.0)
Foreign	5.9	3.4	3.3
Total	\$ 257.6	\$ 242.7	\$ (126.7)
Income tax expense (benefit):			
Current:			
Federal	\$ 46.3	\$ 39.4	\$ 40.8
Foreign	1.3	0.6	1.0
State	11.3	8.7	5.6
Total current	58.9	48.7	47.4
Deferred:			
Federal	(1.9)	3.6	(75.5)
Foreign	(0.2)	0.6	-
State	0.9	4.5	(14.5)
Total deferred	(1.2)	8.7	(90.0)
Total income tax expense (benefit)	\$ 57.7	\$ 57.4	\$ (42.6)

Armstrong World Industries, Inc., and Subsidiaries  
Notes to Consolidated Financial Statements  
(dollar amounts in millions, except share data)

The unremitted earnings of our foreign subsidiaries are not permanently reinvested. Accordingly, at December 31 2022 and 2021, we have recorded deferred income taxes for foreign withholding taxes of \$0.9 million and \$0.7 million on approximately \$17.7 million and \$13.0 million of net undistributed earnings of foreign subsidiaries, respectively.

	<u>2022</u>	<u>2021</u>	<u>2020</u>
<u>Reconciliation to U.S. statutory tax rate</u>			
Continuing operations tax expense (benefit) at statutory rate	\$ 54.1	\$ 51.0	\$ (26.6)
Decrease in valuation allowances on deferred income tax assets	(1.7)	(17.8)	(0.1)
Expiration of deferred income tax assets	0.7	18.3	-
State income tax expense (benefit), net of federal impact	11.0	11.0	(7.3)
Capital loss on sale of investment	-	-	(4.6)
Statute closures	(5.1)	(3.8)	(1.3)
State deferred tax adjustments	-	-	(1.5)
Excess tax benefits on share-based compensation	(0.5)	(0.8)	(0.9)
U.S. permanent differences	(0.8)	(1.3)	(2.2)
Other	-	0.8	1.9
Tax expense (benefit) at effective rate	<u>\$ 57.7</u>	<u>\$ 57.4</u>	<u>\$ (42.6)</u>

We recognize the tax benefits of an uncertain tax position only if those benefits are more likely than not to be sustained based on existing tax law. Additionally, we establish a reserve for tax positions that are more likely than not to be sustained based on existing tax law, but uncertain in the ultimate benefit to be sustained upon examination by the relevant taxing authorities. Unrecognized tax benefits are subsequently recognized at the time the more likely than not recognition threshold is met, the tax matter is effectively settled or the statute of limitations for the relevant taxing authority to examine and challenge the tax position has expired, whichever is earlier.

We had \$27.3 million of Unrecognized Tax Benefits (“UTB”) as of December 31, 2022, \$11.5 million (\$10.6 million, net of federal benefit) of this amount, if recognized in future periods, would impact the reported effective tax rate.

It is reasonably possible that certain UTB’s may increase or decrease within the next twelve months due to tax examination changes, settlement activities, expirations of statute of limitations, or the impact on recognition and measurement considerations related to the results of published tax cases or other similar activities. Over the next twelve months we estimate that UTB’s may decrease by \$0.1 million related to state statutes expiring.

We account for all interest and penalties on uncertain income tax positions as income tax expense. We have \$1.7 million of interest and penalties accrued in non-current income tax payable in the Consolidated Balance Sheet as of December 31, 2022.

We had the following activity for UTB’s for the years ended December 31, 2022, 2021 and 2020:

	<u>2022</u>	<u>2021</u>	<u>2020</u>
Unrecognized tax benefits balance at January 1,	\$ 35.6	\$ 41.7	\$ 34.7
Gross change for current year positions	0.4	1.7	2.3
Increase for prior period positions	0.2	-	8.7
Decrease for prior period positions	(1.4)	(3.6)	-
Decrease due to statute expirations	(7.5)	(4.2)	(4.0)
Unrecognized tax benefits balance at December 31,	<u>\$ 27.3</u>	<u>\$ 35.6</u>	<u>\$ 41.7</u>

We file income tax returns in the U.S. and various states and international jurisdictions. In the normal course of business, we are subject to examination by taxing authorities in Canada and the United States. Generally, we have open tax years subject to tax audit on average of between three years and six years. The statute of limitations is no longer open for U.S. federal returns before 2018. However, the U.S. federal return remains subject to examination by taxing authorities for 2017, specifically as it relates to the Section 965 Transition Tax incurred related to the Tax Cuts and Jobs Act of 2017. With few exceptions, the statute of limitations is no longer open for state or non-U.S. income tax examinations for years before 2018. With the exception of extending the 2018 and 2019 statute of limitations to July 31, 2023 as a result of ongoing U.S. federal income tax audits, we have not significantly extended any open statutes of limitation for any major jurisdiction and have reviewed and accrued for, where necessary, tax liabilities for open periods.

Armstrong World Industries, Inc., and Subsidiaries  
Notes to Consolidated Financial Statements  
(dollar amounts in millions, except share data)

	2022	2021	2020
<u>Other taxes</u>			
Payroll taxes	\$ 18.3	\$ 13.4	\$ 15.6
Property, franchise and capital stock taxes	4.5	4.4	4.2

In 2021, we recorded a \$5.9 million ERC benefit, representing a refundable payroll tax credit for eligible wages paid to our employees in 2020 and 2021 under the CARES Act. We accounted for the ERC by applying the grant model. Based on our evaluation, we recognized the ERC benefit during 2021, primarily as an offset to payroll tax expenses within cost of goods sold and SG&A expenses in our Consolidated Statements of Operations and Comprehensive Income.

NOTE 17. DEBT

	<u>December 31, 2022</u>	<u>December 31, 2021</u>
Revolving credit facility due 2027	\$ 205.0	\$ -
Revolving credit facility due 2024	-	165.0
Term loan A due 2027	450.0	-
Term loan A due 2024	-	468.7
Principal debt outstanding	655.0	633.7
Unamortized debt financing costs	(3.9)	(2.3)
Long-term debt	651.1	631.4
Less current portion	-	25.0
Total long-term debt, less current portion	<u>\$ 651.1</u>	<u>\$ 606.4</u>

On December 7, 2022, we amended and restated our \$1,000.0 million variable rate senior secured credit facility. The \$950.0 million amended senior secured credit facility is comprised of a \$500.0 million revolving credit facility (with a \$150.0 million sublimit for letters of credit) and a \$450.0 million Term Loan A. The terms of the amended senior secured credit facility resulted in a higher interest rate spread for both the revolving credit facility and Term Loan A (1.50% over London Interbank Offered Rate (“LIBOR”) to initially 1.625% over the Secured Overnight Financing Rate (“SOFR”), plus a 10-basis point SOFR adjustment). The interest rate can fluctuate based upon our election of the floating rate, with applicable margin subject to adjustment based on our consolidated net leverage ratio. We also extended the maturity of both the revolving credit facility and Term Loan A from September 2024 to December 2027. In connection with the refinancing, we paid \$3.1 million of bank, legal and other fees, of which \$3.0 million were capitalized. These fees are reflected as a component of long-term debt and amortized into interest expense over the lives of the underlying debt. Additionally, during the fourth quarter of 2022, we wrote off \$0.6 million of unamortized debt financing costs, included as a component of interest expense, related to our previous credit facility. The credit lines under our revolving credit facility are subject to immaterial annual commitment fees. We also have a \$25.0 million bi-lateral letter of credit facility separate from the senior secured credit facility.

The amended senior secured credit facility includes two financial covenants that require the ratio of consolidated EBITDA to consolidated cash interest expense minus cash consolidated interest income to be greater than or equal to 3.0 to 1.0 and requires the ratio of consolidated funded indebtedness, minus AWI and domestic subsidiary unrestricted cash and cash equivalents up to \$100 million, to consolidated EBITDA to be less than or equal to 3.75 to 1.0 (subject to certain exceptions for certain acquisitions). As of December 31, 2022, we were in compliance with all covenants of the senior secured credit facility.

Our debt agreements include other restrictions, including restrictions pertaining to the incurrence of additional debt, the redemption, repurchase or retirement of our capital stock, payment of dividends, and certain financial transactions as it relates to specified assets. We currently believe that default under these covenants is unlikely.

Scheduled payments of long-term debt:

2023	\$ -
2024	22.5
2025	22.5
2026	22.5
2027	587.5
2028 and later	-

Armstrong World Industries, Inc., and Subsidiaries  
Notes to Consolidated Financial Statements  
(dollar amounts in millions, except share data)

We utilize lines of credit and other commercial commitments in order to ensure that adequate funds are available to meet operating requirements. Letters of credit are currently arranged through our revolving credit facility and our bi-lateral facility. Letters of credit may be issued to third party suppliers, insurance and financial institutions and typically can only be drawn upon in the event of AWI's failure to pay its obligations to the beneficiary. The following table presents details related to our letters of credit facilities:

Financing Arrangements	December 31, 2022		
	Limit	Used	Available
Bi-lateral facility	\$ 25.0	\$ 8.1	\$ 16.9
Revolving credit facility	150.0	-	150.0
Total	<u>\$ 175.0</u>	<u>\$ 8.1</u>	<u>\$ 166.9</u>

**NOTE 18. PENSION AND OTHER BENEFIT PROGRAMS**

**DEFINED CONTRIBUTION BENEFIT PLANS**

We sponsor several defined contribution plans, which cover substantially all U.S. and non-U.S. employees. Eligible employees may defer a portion of their pre-tax covered compensation on an annual basis. We match employee contributions up to pre-defined percentages. Employee contributions are 100% vested. Employer contributions are vested based on pre-defined requirements. Costs for defined contribution benefit plans were \$8.4 million in 2022, \$9.1 million in 2021 and \$8.1 million in 2020.

**DEFINED BENEFIT PENSION PLANS**

Benefits from defined benefit pension plans are based primarily on an employee's compensation and years of service. We fund our pension plans when appropriate.

Our U.S. defined benefit pension plans include a qualified, funded RIP and a Retirement Benefit Equity Plan ("RBEP"), which is a nonqualified, unfunded plan designed to provide pension benefits in excess of the limits defined under Sections 415 and 401(a)(17) of the Internal Revenue Code.

In the first quarter of 2020, we entered into agreements with Athene Annuity and Life Company ("AAIA") and Athene Annuity & Life Assurance Company of New York ("AANY") to transfer certain benefit obligations and assets of our RIP to AAIA and AANY. Under the agreements, we effectively settled \$1,045.3 million of retiree defined benefit pension obligations related to approximately 10,000 retirees and beneficiaries (the "Transferred Participants"), which were irrevocably transferred to AAIA and AANY and which guarantees the pension benefits of the Transferred Participants. During the third quarter of 2020, these amounts were immaterially adjusted due to customary data reconciliations with AAIA and AANY. The Agreement did not impact our benefit obligations under the RBEP.

As a result of the transaction, we recorded a \$374.4 million settlement loss in the first quarter of 2020, which represented the release of amounts previously recorded in AOCI to other non-operating expense. The RIP's assets and liabilities were remeasured as of the settlement date, resulting in a remaining projected benefit obligation of \$387.5 million, immediately after remeasurement, which covered approximately 3,000 deferred vested and active participants, and fair value of plan assets of \$499.6 million. The discount rate used to determine the projected benefit obligation at the settlement date was 3.07%, compared to 3.16% used as of December 31, 2019. The expected long-term return on plan assets remained at 5.25% and did not change as a result of the settlement.

During the third quarter of 2020, we offered an early retirement incentive benefit to employees at one of our manufacturing plants who met certain age and years of service criteria. The consideration period for eligible employees ended on September 30, 2020. Based on eligible employee elections to participate, we recorded a charge of \$2.0 million within other non-operating expense, which increased the projected benefit obligation of the RIP. The enhanced retirement benefits did not result in a curtailment.

We have a defined benefit pension plan in Germany which remains from previously discontinued entities. This plan uses assumptions which are consistent with, but not identical to, those of the U.S. plans. The accumulated benefit obligation for the non-U.S. defined benefit pension plan was \$1.8 million and \$2.5 million as of December 31, 2022 and 2021, respectively.



Armstrong World Industries, Inc., and Subsidiaries  
Notes to Consolidated Financial Statements  
(dollar amounts in millions, except share data)

The following tables summarize the balance sheet impact of our U.S. defined benefit pension plans, as well as the related benefit obligations, assets, funded status and rate assumptions. We use a December 31 measurement date for all our defined benefit pension plans.

	2022	2021
<b>Change in benefit obligations:</b>		
Benefit obligations as of beginning of period	\$ 435.1	\$ 441.7
Service cost	3.7	4.8
Interest cost	10.5	9.0
Actuarial (gain)	(99.8)	(10.9)
Benefits paid	(12.4)	(9.5)
Benefit obligations as of end of period	\$ 337.1	\$ 435.1
<b>Change in plan assets:</b>		
Fair value of plan assets as of beginning of period	\$ 506.7	\$ 520.7
Actual return on plan assets	(105.4)	(7.4)
Employer contributions	2.8	2.9
Benefits paid	(12.4)	(9.5)
Fair value of plan assets as of end of period	\$ 391.7	\$ 506.7
Funded status	\$ 54.6	\$ 71.6
<b>Weighted-average assumptions used to determine benefit obligations at end of period:</b>		
Discount rate	5.21%	2.98%
Rate of compensation increase	3.33%	3.05%
<b>Weighted-average assumptions used to determine net periodic benefit cost for the period:</b>		
Discount rate	2.97%	2.67%
Expected return on plan assets	3.75%	3.25%
Rate of compensation increase	3.05%	3.05%

*Basis of Rate-of-Return Assumption*

Long-term asset class return assumptions for the RIP are determined based on input from investment professionals on the expected performance of the asset classes over 10 to 30 years. The forecasts were averaged to come up with consensus passive return forecasts for each asset class. Incremental components were added for the expected return from active management and asset class rebalancing based on historical information obtained from investment consultants. These forecasted gross returns were reduced by estimated management fees and expenses, yielding a long-term return forecast of 3.75% and 3.25% for the years ended December 31, 2022 and 2021, respectively.

The accumulated benefit obligation for the U.S. defined benefit pension plans was \$335.7 million and \$433.2 million as of December 31, 2022 and 2021, respectively. In both 2022 and 2021, the largest contributor to the net actuarial gains affecting the benefit obligations for the defined benefit pension plans was an increase in the discount rate, which was partially offset by other changes in assumptions and changes in census data.

	2022	2021
<u>Pension plans with benefit obligations in excess of assets</u>		
RBEP Projected benefit obligation, December 31	\$ 28.6	\$ 37.4
RBEP Accumulated benefit obligation, December 31	28.6	37.4

Armstrong World Industries, Inc., and Subsidiaries  
Notes to Consolidated Financial Statements  
(dollar amounts in millions, except share data)

The components of the pension cost for the U.S. defined benefit pension plans are as follows:

	2022	2021	2020
Service cost of benefits earned during the period	\$ 3.7	\$ 4.8	\$ 5.5
Interest cost on projected benefit obligation	10.5	9.0	15.5
Expected return on plan assets	(18.4)	(16.5)	(34.5)
Recognized net actuarial loss	4.2	3.5	6.3
Settlement	-	-	374.4
Special termination benefits	-	-	2.0
Net periodic pension cost	<u>\$ -</u>	<u>\$ 0.8</u>	<u>\$ 369.2</u>

For 2022, 2021 and 2020, actuarial gains and losses were amortized over the remaining life expectancy of plan participants, which was approximately 26 years for 2022, 27 years for 2021 and 28 years for 2020 for our U.S. defined benefit pension plans.

Investment Policies

U.S. Pension Plans

The RIP's primary investment objective is to maintain the funded status of the plan such that the likelihood we will be required to make significant contributions to the plan is limited. This objective is expected to be achieved by (a) investing a substantial portion of the plan assets in high quality corporate bonds whose duration is at least equal to that of the plan's liabilities, (b) investing in publicly traded equities in order to increase the ratio of plan assets to liabilities over time, (c) limiting investment return volatility by diversifying among additional asset classes with differing expected rates of return and return correlations, and/or (d) using derivatives to either implement investment positions efficiently or to hedge risk but not to create investment leverage.

Each asset class utilized by the RIP has defined asset allocation targets and allowable ranges. The table below shows the asset allocation targets and the December 31, 2022 and 2021 positions for each asset class:

Asset Class	Target Weight at December 31, 2022	Position at December 31,	
		2022	2021
Long duration bonds	90.0%	90.0%	89.0%
Equities, real estate and private equity	10.0%	10.0%	11.0%

Pension plan assets are required to be reported and disclosed at fair value. Fair value is defined as the exchange price that would be received for an asset or paid to transfer a liability (an exit price) in the principal or most advantageous market for the asset or liability in an orderly transaction between market participants on the measurement date. Three levels of inputs may be used to measure fair value:

Level 1 - Quoted prices in active markets for identical assets or liabilities.

Level 2 - Observable inputs other than quoted prices included in Level 1, such as quoted prices for similar assets and liabilities in active markets; quoted prices for identical or similar assets and liabilities in markets that are not active; or other inputs that are observable or can be corroborated by observable market data.

Level 3 - Unobservable inputs that are supported by little or no market activity and that are significant to the fair value of the assets or liabilities. This includes certain pricing models, discounted cash flow methodologies and similar techniques that use significant unobservable inputs.

The asset's fair value measurement level within the fair value hierarchy is based on the lowest level of any input that is significant to the fair value measurement. Valuation techniques used need to maximize the use of observable inputs and minimize the use of unobservable inputs.

Armstrong World Industries, Inc., and Subsidiaries  
Notes to Consolidated Financial Statements  
(dollar amounts in millions, except share data)

The following table sets forth by level within the fair value hierarchy a summary of the RIP plan assets measured at fair value on a recurring basis:

Description	Value at December 31, 2022			Total
	Level 1	Level 2	Level 3	
Collective trust funds - bonds	\$ -	\$ 350.3	\$ -	\$ 350.3
Collective trust funds - equities	-	32.6	-	32.6
Cash, other short-term investments and payables, net	(0.3)	3.5	-	3.2
Net assets measured at fair value	\$ (0.3)	\$ 386.4	\$ -	\$ 386.1
Investments measured at net asset value as a practical expedient				5.6
Net assets				\$ 391.7

Description	Value at December 31, 2021			Total
	Level 1	Level 2	Level 3	
Collective trust funds - bonds	\$ -	\$ 451.9	\$ -	\$ 451.9
Collective trust funds - equities	-	46.8	-	46.8
Cash, other short-term investments and payables, net	(0.3)	1.9	-	1.6
Net assets measured at fair value	\$ (0.3)	\$ 500.6	\$ -	\$ 500.3
Investments measured at net asset value as a practical expedient				6.4
Net assets				\$ 506.7

The RIP has investments in alternative investment funds as of December 31, 2022 and 2021 which are reported at fair value. These investments that are measured at fair value using the net asset value (“NAV”) per share (or its equivalent) practical expedient have not been categorized in the fair value hierarchy. The fair value amounts presented in the tables above are intended to permit reconciliation of the fair value hierarchy to the total fair value of plan assets. We have concluded that the NAV reported by the underlying fund approximates the fair value of the investment. These investments are redeemable at NAV under agreements with the underlying funds. However, it is possible that these redemption rights may be restricted or eliminated by the funds in the future in accordance with the underlying fund agreements. Due to the nature of the investments held by the funds, changes in market conditions and the economic environment may significantly impact the NAV of the funds and, consequently, the fair value of the U.S. defined benefit pension plan asset’s interest in the funds. Furthermore, changes to the liquidity provisions of the funds may significantly impact the fair value of the U.S. defined benefit pension plan asset’s interest in the funds. As of December 31, 2022, there were no restrictions on redemption of these investments.

The following table sets forth a summary of the RIP’s investments measured at NAV:

Description	Value at December 31, 2022			Redemption Notice Period
	Fair Value	Unfunded Commitments	Redemption Frequency	
Real estate	\$ 5.6	\$ 2.2	Quarterly	60 days

Description	Value at December 31, 2021			Redemption Notice Period
	Fair Value	Unfunded Commitments	Redemption Frequency	
Real estate	\$ 6.4	\$ 2.2	Quarterly	60 days

Following is a description of the valuation methodologies used for assets measured at fair value and at NAV.

Collective trust funds – bonds: Consists primarily of collective trust funds, in addition to registered investment funds and common trust funds, which invest in fixed income securities tailored to institutional investors. There are no readily available market quotations for registered investment company funds. The fair value of collective trust funds, registered investment funds and common trust funds have been classified as Level 2 assets above based on the determination that the funds have quoted prices in non-active markets. The funds are priced on a daily basis by their trustee and therefore have a readily determinable fair value; however, the number of trades occurring is not sufficient for the market to be considered active. Investments in pooled funds traded in a non-active market were valued at bid price and classified as Level 2 assets above.

Armstrong World Industries, Inc., and Subsidiaries  
Notes to Consolidated Financial Statements  
(dollar amounts in millions, except share data)

Collective trust funds – equities: Represents collective trust and funds holding equity investments, fixed income securities, commodity futures contracts, cash and other short-term securities. The fair value of collective trust funds have been classified as Level 2 assets above based on the determination that the funds have quoted prices in non-active markets. The funds are priced on a daily basis by their trustee and therefore have a readily determinable fair value; however, the number of trades occurring is not sufficient for the market to be considered active.

Cash, other short-term investments and payables: Consists primarily of cash and cash equivalents, and plan receivables/payables. The carrying amounts of cash and cash equivalents and receivables/payables approximate fair value due to the short-term nature of these instruments. Other payables and receivables consist primarily of accrued fees and receivables related to investment positions liquidated for which proceeds had not been received as of December 31.

Real estate: Consists of both open-end and closed-end real estate funds. There are no readily available market quotations for these real estate funds. These investments were measured at fair value using the NAV practical expedient.

#### DEFINED BENEFIT RETIREE HEALTH AND LIFE INSURANCE PLANS

We fund postretirement benefits on a pay-as-you-go basis, with the retiree paying a portion of the cost for health care benefits by means of deductibles and contributions.

The following tables summarize the balance sheet impact of the postretirement benefit pension plan, as well as the related benefit obligations, funded status and rate assumptions. We use a December 31 measurement date for all our defined benefit postretirement benefit plans.

	2022	2021
<b>Change in benefit obligations:</b>		
Benefit obligation as of beginning of period	\$ 78.0	\$ 81.4
Interest cost	1.5	1.2
Plan participants' contributions	1.6	1.9
Actuarial (gain) loss	(12.4)	2.0
Benefits paid	(6.8)	(8.5)
Benefit obligations as of end of period	<u>\$ 61.9</u>	<u>\$ 78.0</u>
<b>Change in plan assets:</b>		
Fair value of plan assets as of beginning of period	\$ -	\$ -
Employer contributions	5.2	6.6
Plan participants' contributions	1.6	1.9
Benefits paid	(6.8)	(8.5)
Fair value of plan assets as of end of period	<u>\$ -</u>	<u>\$ -</u>
Funded status	<u>\$ (61.9)</u>	<u>\$ (78.0)</u>
<b>Weighted-average discount rate used to determine benefit obligations at end of period</b>		
	5.12%	2.72%
<b>Weighted-average discount rate used to determine net periodic benefit cost for the period</b>		
	2.73%	2.35%

In 2022, the largest contributor to the actuarial gains affecting the benefit obligations for the postretirement plans was an increase in the discount rate, which was partially offset by an update to the per capita claims assumption. In 2021, the largest contributor to the actuarial losses affecting the benefit obligations for the postretirement plans was the update to the per capita claims assumption, which was partially offset by an increase in the discount rate.

The components of postretirement benefit (credit) are as follows:

	2022	2021	2020
Interest cost on accumulated postretirement benefit obligation	\$ 1.5	\$ 1.2	\$ 1.9
Amortization of prior service (credit)	(0.3)	(0.3)	(0.3)
Amortization of net actuarial gain	(2.8)	(2.2)	(6.6)
Net periodic postretirement benefit (credit)	<u>\$ (1.6)</u>	<u>\$ (1.3)</u>	<u>\$ (5.0)</u>

Armstrong World Industries, Inc., and Subsidiaries  
Notes to Consolidated Financial Statements  
(dollar amounts in millions, except share data)

For measurement purposes, an average rate of annual increase in the per capita cost of covered health care benefits of 7.3% for pre-65 retirees and 7.8% for post-65 retirees was assumed for 2022, decreasing ratably to an ultimate rate of 4.5% in 2030.

Amounts recognized in assets (liabilities) on the consolidated balance sheets at year end consist of:

	U.S. Pension Plans		Non-U.S. Pension Plan		Retiree Health and Life Insurance Benefits	
	2022	2021	2022	2021	2022	2021
Prepaid pension costs	\$ 83.2	\$ 109.0	\$ -	\$ -	\$ -	\$ -
Accounts payable and accrued expenses	(2.7)	(2.9)	(0.1)	(0.1)	(7.1)	(6.9)
Postretirement benefit liabilities	-	-	-	-	(54.8)	(71.1)
Pension benefit liabilities	(25.9)	(34.5)	(1.7)	(2.4)	-	-
Net amount recognized	\$ 54.6	\$ 71.6	\$ (1.8)	\$ (2.5)	\$ (61.9)	\$ (78.0)

Pre-tax amounts recognized in accumulated other comprehensive (loss) income at year end consist of:

	U.S. Pension Plans		Retiree Health and Life Insurance Benefits	
	2022	2021	2022	2021
Net actuarial (loss) gain	\$ (171.9)	\$ (152.1)	\$ 23.3	\$ 13.7
Prior service credit	-	-	1.2	1.4
Accumulated other comprehensive (loss) income	\$ (171.9)	\$ (152.1)	\$ 24.5	\$ 15.1

The following benefit payments, which reflect expected future service, as appropriate, are expected to be paid over the next ten years for our U.S. plans:

	U.S. Pension Benefits <sup>(1)</sup>	Retiree Health and Life Insurance Benefits, Net
2023	\$ 17.0	\$ 7.0
2024	18.5	6.7
2025	20.4	6.5
2026	21.6	6.0
2027	22.9	5.6
2028 - 2032	121.2	23.0

<sup>(1)</sup> We were not required and did not make contributions to the RIP during 2022, 2021 or 2020 as, based on guidelines established by the Pension Benefit Guaranty Corporation, the RIP had sufficient assets to fund its distribution obligations. Benefit payments to RIP participants have been made directly from the RIP while benefit payments under the RBEP are made from Company cash.

#### NOTE 19. FINANCIAL INSTRUMENTS AND CONTINGENT CONSIDERATION

We do not hold or issue financial instruments for trading purposes. The estimated fair values of our financial instruments and contingent consideration are as follows:

	December 31, 2022		December 31, 2021	
	Carrying amount	Estimated fair value	Carrying amount	Estimated fair value
Assets (liabilities), net:				
Total long-term debt, including current portion	\$ (651.1)	\$ (645.3)	\$ (631.4)	\$ (626.0)
Interest rate swap contracts	11.4	11.4	(14.2)	(14.2)
Acquisition-related contingent consideration	(15.2)	(15.2)	(12.8)	(12.8)

The carrying amounts of cash and cash equivalents, receivables, accounts payable, and accrued expenses approximate fair value because of the short-term maturity of these instruments. The fair value estimates of long-term debt are based on quotes from a major financial institution of recently observed trading levels of our Term Loan A debt. The fair value estimates for interest rate swap contracts are estimated by obtaining quotes from major financial institutions with verification by internal valuation models. We

Armstrong World Industries, Inc., and Subsidiaries  
Notes to Consolidated Financial Statements  
(dollar amounts in millions, except share data)

engaged independent, third-party valuation specialists to determine the fair value estimates for acquisition-related contingent consideration payable based on performance, which were measured using a Monte Carlo simulation. As of December 31, 2022 and 2021, \$15.2 million and \$8.6 million, respectively, of the carrying amount of contingent consideration liabilities payable, related to final achievement of certain financial and performance milestones through December 31, 2022 and 2021, respectively, for the acquisitions of Moz and Turf, was equal to fair value as milestone achievements were known.

The fair value measurement of assets and liabilities measured at fair value on a recurring basis and reported on the Consolidated Balance Sheets is summarized below:

	December 31, 2022		December 31, 2021	
	Fair value based on		Fair value based on	
	Other observable inputs Level 2	Other observable inputs Level 2	Other observable inputs Level 2	Other unobservable inputs Level 3
Assets (liabilities), net:				
Interest rate swap contracts	\$ 11.4	\$ (14.2)	\$ -	-
Acquisition-related contingent consideration	-	-	-	(4.2)

As of December 31, 2021, the acquisition-related contingent consideration liability included \$8.6 million related to the final achievement of certain financial and performance milestones through December 31, 2021, for the Moz and Turf acquisitions, which was paid in the first quarter 2022.

Acquisition-related contingent consideration of \$4.2 million as of December 31, 2021 was measured with the use of significant unobservable inputs, which included financial projections over the earn-out period, the volatility of the underlying financial metrics and estimated discount rates. All changes in the contingent consideration liability subsequent to the initial acquisition-date measurements were recorded as a component of operating income on our Consolidated Statements of Operations and Comprehensive Income.

The following table summarizes the weighted-average of the significant unobservable inputs as of December 31, 2021:

Unobservable input	Turf
Volatility	22.2%
Discount rates	2.7%

The changes in fair value of the acquisition-related contingent consideration liability for the years ended December 31, 2022, 2021 and 2020 were as follows:

	Fair Value of Contingent Consideration
Balance as of January 1, 2020	\$ -
Acquisition date fair value of Moz contingent consideration	2.7
Acquisition date fair value of Turf contingent consideration	14.1
Loss related to change in fair value of contingent consideration	0.1
Balance as of December 31, 2020	\$ 16.9
(Gain) related to change in fair value of contingent consideration	(4.1)
Balance as of December 31, 2021	\$ 12.8
Cash consideration paid	(8.6)
Loss related to change in fair value of contingent consideration	11.0
Balance as of December 31, 2022	\$ 15.2

As of December 31, 2022, the acquisition-related contingent consideration liability represents the additional cash consideration payable related to our acquisition of Turf upon the final achievement of certain financial and performance milestones through December 31, 2022, which we paid in the first quarter of 2023 and is classified as a current liability. During 2022, the change in fair value was due to changes in Turf actual results over the earn out period. During 2021 and 2020, the change in fair value was primarily due to changes in Turf and Moz actual results or financial projections over the earn out period. During 2022, we paid \$8.6 million of

Armstrong World Industries, Inc., and Subsidiaries  
Notes to Consolidated Financial Statements  
(dollar amounts in millions, except share data)

additional cash consideration, which represented the final achievement of certain financial and performance milestones through December 31, 2021 for the acquisitions of Moz and Turf. The additional cash consideration paid was classified as cash flows from financing activities in our Consolidated Statements of Cash Flows, up to the acquisition date fair value. The portions of additional cash consideration paid in excess of the acquisition date fair value was classified as cash flows from operating activities in our Consolidated Statements of Cash Flows.

**NOTE 20. DERIVATIVE FINANCIAL INSTRUMENTS**

We are exposed to market risk from changes in foreign exchange rates, interest rates and commodity prices that could impact our results of operations, cash flows and financial condition. We use interest rate derivatives to manage our exposures to interest rates. At inception, interest rate swap derivatives that we designate as hedging instruments are formally documented as a hedge of a forecasted transaction or cash flow hedge. We also formally assess, both at inception and at least quarterly thereafter, whether the derivatives that are used in hedging transactions are highly effective in offsetting changes in the cash flows of the hedged item. If it is determined that a derivative ceases to be a highly effective hedge, or if the anticipated transaction is no longer probable of occurring, we discontinue hedge accounting and any future mark-to-market adjustments are recognized in earnings. We use derivative financial instruments as risk management tools and not for speculative trading purposes.

**Counterparty Risk**

We only enter into derivative transactions with established financial institution counterparties having an investment-grade credit rating. We monitor counterparty credit ratings on a regular basis. All of our derivative transactions with counterparties are governed by master International Swap and Derivatives Association agreements (“ISDAs”) with netting arrangements. These agreements can limit our exposure in situations where we have gain and loss positions outstanding with a single counterparty. We do not post nor do we receive cash collateral with any counterparty for our derivative transactions. These ISDAs do not have any credit contingent features; however, a default under our bank credit facility would trigger a default under these agreements. Exposure to individual counterparties is controlled and we consider the risk of counterparty default to be negligible.

**Interest Rate Risk**

We utilize interest rate swaps to minimize the fluctuations in earnings caused by interest rate volatility. These swaps are designated as cash flow hedges against changes in LIBOR for a portion of our variable rate debt. Effective the second quarter 2020, we adopted Accounting Standards Update 2020-04, “Facilitation of the Effects of Reference Rate Reform on Financial Reporting,” which provides optional expedients and exceptions for applying U.S. GAAP to contracts, hedging relationships and other transactions affected by the discontinuation of LIBOR. In December 2022, we amended and restated our senior secured credit facility. We have elected practical expedients available under Accounting Standards Update 2020-04 to allow for different reference rates in our senior secured credit facility and interest rate hedges. The following table summarizes our interest rate swaps as of December 31, 2022:

Trade Date	Notional Amount	Coverage Period	Risk Coverage
November 28, 2018	\$ 200.0	November 2018 to November 2023	USD-LIBOR
September 19, 2022	\$ 25.0	September 2022 to December 2023	USD-LIBOR
March 10, 2020	\$ 50.0	March 2021 to March 2024	USD-LIBOR
March 11, 2020	\$ 50.0	March 2021 to March 2024	USD-LIBOR
November 28, 2018	\$ 100.0	March 2021 to March 2025	USD-LIBOR

Under the terms of our interest rate swaps above, we pay a fixed rate monthly and receive 1-month LIBOR, inclusive of a 0% floor.

**Financial Statement Impacts**

Armstrong World Industries, Inc., and Subsidiaries  
Notes to Consolidated Financial Statements  
(dollar amounts in millions, except share data)

The following tables detail amounts related to our derivatives as of December 31, 2022 and 2021. We did not have any derivative assets or liabilities not designated as hedging instruments as of December 31, 2022 or 2021. The derivative asset and liability amounts below are shown gross and have not been netted.

	Derivative Assets			Derivative Liabilities		
	Balance Sheet Location	Fair Value		Balance Sheet Location	Fair Value	
		December 31, 2022	December 31, 2021		December 31, 2022	December 31, 2021
Interest rate swap contracts	Other current assets	\$ 3.7	\$ -	Accounts payable and accrued expenses	\$ -	\$ 0.1
Interest rate swap contracts	Other non-current assets	7.7	0.4	Other long-term liabilities	-	14.5
		<b>Amount of Gain (Loss) Recognized in AOCI</b>		<b>Location of Gain (Loss) Reclassified from AOCI into Net Earnings (Loss)</b>	<b>Gain Reclassified from AOCI into Net Earnings (Loss)</b>	
		<b>2022</b>	<b>2021</b>	<b>2020</b>	<b>2022</b>	<b>2021</b>
<u>Derivatives in cash flow hedging relationships</u>						
Interest rate swap contracts		\$ 26.9	\$ 21.9	\$ (8.6)	Interest expense	\$ 2.0 \$ 8.5 \$ 5.6

As of December 31, 2022, the amount of existing gains in AOCI expected to be recognized in earnings over the next twelve months was \$10.4 million.

NOTE 21. OTHER LONG-TERM LIABILITIES

	December 31, 2022	December 31, 2021
Long-term deferred compensation arrangements	\$ 15.4	\$ 17.6
Fair value of derivative liabilities	-	14.5
Environmental insurance recoveries received in excess of cumulative expenses incurred	3.5	4.8
Acquisition-related contingent consideration	-	4.2
Other	6.9	5.6
Total other long-term liabilities	<u>\$ 25.8</u>	<u>\$ 46.7</u>

NOTE 22. SHARE-BASED COMPENSATION PLANS

The 2016 Long-Term Incentive Plan (“2016 LTIP”) authorized us to issue stock options, stock appreciation rights, restricted stock awards, stock units, performance-based awards and cash awards to officers and key employees and was scheduled to terminate on July 8, 2026. On June 16, 2022, our shareholders approved the 2022 Equity and Cash Incentive Plan (“2022 ECIP”), which is the successor to the 2016 LTIP. We cannot issue any additional shares under the 2016 LTIP. The 2022 ECIP authorizes us to issue stock options, stock appreciation rights, restricted stock awards, performance-based awards and cash awards to officers and key employees. The 2022 ECIP authorizes us to issue up to 2,651,472 shares of common stock, which includes all shares that have been issued under the 2022 ECIP and the 2016 LTIP. The expiration of the 2022 ECIP is June 15, 2032, after which time no further awards may be made. As of December 31, 2022, 2,636,996 shares were available for future grants under the 2022 ECIP, which includes anticipated future adjustments to shares for performance-based awards that have been previously granted.

The 2016 Directors Stock Unit Plan (“2016 Director’s Plan”) authorizes us to issue stock units to non-employee directors until July 2026. The 2016 Director’s Plan authorizes us to issue up to 250,000 shares of common stock, which includes all shares that have been issued under the 2016 Director’s Plan. As of December 31, 2022, 145,437 shares were available for future grants under the 2016 Director’s Plan.

The 2020 Inducement Award Plan (“2020 Inducement Plan”) authorizes us to issue stock options, stock appreciation rights, restricted stock awards and stock units to key employees and expires on December 14, 2030, after which time no further awards may be made. The 2020 Inducement Plan authorizes us to issue up to 19,000 shares of common stock. As of December 31, 2022, 6,921 shares were available for future grants under the 2020 Inducement Plan.



Armstrong World Industries, Inc., and Subsidiaries  
Notes to Consolidated Financial Statements  
(dollar amounts in millions, except share data)

The following table presents stock option activity for the year ended December 31, 2022:

	Number of shares (thousands)	Weighted- average exercise price	Weighted- average remaining contractual term (years)	Aggregate intrinsic value (millions)
Option shares outstanding, December 31, 2021	73.5	\$ 46.05		
Option shares exercised	(39.6)	\$ 44.93		
Option shares outstanding, December 31, 2022	33.9	\$ 47.35	1.1	\$ 0.7
Option shares exercisable, vested and expected to vest, December 31, 2022	33.9	\$ 47.35	1.1	\$ 0.7

We have reserved sufficient authorized shares to allow us to issue new shares upon exercise of all outstanding options. Options generally become exercisable in three years and expire 10 years from the date of grant. When options are exercised, we may issue new shares, use treasury shares (if available), acquire shares held by investors, or a combination of these alternatives in order to satisfy the option exercises.

The following table presents information related to stock option exercises:

	2022	2021	2020
Total intrinsic value of stock options exercised	\$ 1.3	\$ 4.1	\$ 5.6
Cash proceeds received from stock options exercised	1.8	2.5	4.7
Tax deduction realized from stock options exercised	0.1	0.4	1.2

The fair value of option grants was estimated on the date of grant using the Black-Scholes option pricing model. There have been no option grants since 2014.

We also grant non-vested stock awards in the form of Restricted Stock Units ("RSUs"), Performance Stock Units ("PSUs") and Restricted Stock Awards ("RSAs"). A summary of the 2022 activity related to the RSUs, PSUs and RSAs is as follows:

	Non-Vested Stock Awards					
	RSUs		PSUs		RSAs	
	Number of shares (thousands)	Weighted- average fair value at grant date	Number of shares (thousands)	Weighted- average fair value at grant date	Number of shares (thousands)	Weighted- average fair value at grant date
December 31, 2021	65.0	\$ 87.94	301.8	\$ 92.74	72.6	\$ 77.99
Granted	77.3	86.98	118.2	96.67	-	-
Performance adjustments	-	-	(27.5)	(71.84)	-	-
Vested	(24.1)	(90.32)	(74.4)	(77.80)	(20.4)	(77.90)
Forfeited	(6.1)	(87.60)	(11.7)	(102.92)	(1.5)	(77.22)
December 31, 2022	<u>112.1</u>	\$ 86.66	<u>306.4</u>	\$ 99.38	<u>50.7</u>	\$ 78.05

RSUs entitle the recipient to a specified number of shares of AWI's common stock provided the prescribed service period is fulfilled. PSUs entitle the recipient to a specified number of shares of AWI's common stock provided the defined financial targets are achieved at the end of the performance period. Upon vesting, final adjustments based upon financial achievements are reflected as performance adjustments in the table above. RSUs and PSUs generally have vesting periods of three years at the grant date. RSUs and PSUs earn dividends during the vesting period that are subject to forfeiture if the awards do not vest.

In connection with the acquisition of Arktura in 2020, we issued RSAs to the sellers as of the acquisition date. These awards to sellers were not issued under the 2020 Inducement Plan and have a vesting period of five years from the grant date and earn dividends during the vesting period, which are subject to forfeiture if the awards do not vest. We also issued RSAs under the 2020 Inducement Plan to key employees as of the acquisition date, which have a vesting period of three years from the grant date and earn dividends during the vesting period, which are subject to forfeiture if the awards do not vest. Upon forfeiture, the key employee awards transfer to the Arktura sellers. As of December 31, 2022, 1,915 RSAs forfeited by key employees have been transferred to the Arktura sellers and are not included in the table above.

Armstrong World Industries, Inc., and Subsidiaries  
Notes to Consolidated Financial Statements  
(dollar amounts in millions, except share data)

RSUs, PSUs and RSAs with non-market based performance conditions are measured at fair value based on the closing price of our stock on the date of grant. In 2022 and 2021, we granted 57,439 and 54,231 PSUs, respectively, with market-based performance conditions that are valued through the use of a Monte Carlo simulation. The weighted average assumptions for PSUs measured at fair value through the use of a Monte Carlo simulation are presented in the table below.

	2022	2021
Weighted-average grant date fair value of market-based PSUs granted (dollars per award)	\$ 104.92	\$ 117.85
<u>Assumptions</u>		
Risk-free rate of return	1.8%	0.3%
Expected volatility	37.0%	37.0%
Expected term (in years)	3.1	3.1
Expected dividend yield	0.0%	0.0%

The risk-free rate of return was determined based on the implied yield available on zero coupon U.S. Treasury bills at the time of grant with a remaining term equal to the expected term of the PSUs. The expected volatility was based on historical volatility of our stock price commensurate with the expected term of the PSUs. The expected term represented the performance period on the underlying award. The expected dividend yield was assumed to be zero under the assumption that dividends distributed during the performance period are reinvested in AWI's common stock.

In addition to the equity awards described above, we distributed 11,773 fully-vested phantom shares issued under the 2006 Phantom Stock Unit Plan in 2020. These awards are settled in cash and had vesting periods of one to three years. The total liability recorded for these shares as of December 31, 2020 was \$1.2 million, which included non-forfeitable dividends. This liability was settled on January 5, 2021 and there are no shares outstanding under the plan as of December 31, 2022 and 2021. The 2006 Phantom Stock Unit Plan is still in place, however, no additional shares will be granted under the plan.

As of December 31, 2022 and 2021, there were 80,890 and 130,393 RSUs, respectively, outstanding under the 2016 Directors Stock Unit Plan not reflected in the non-vested stock awards table above. In 2022 and 2021, we granted 13,467 and 8,314 restricted stock units, respectively, to non-employee directors. These awards generally have a vesting period of one year, and as of December 31, 2022 and 2021, 67,423 and 122,079 shares, respectively, were vested but not yet delivered. The awards are generally payable upon vesting or the director's deferral election. These awards earn dividends during the vesting period that are subject to forfeiture if the underlying award does not vest.

We recognize share-based compensation expense on a straight-line basis over the vesting period. Share-based compensation cost was \$14.3 million (\$10.8 million net of tax benefit) in 2022, \$11.3 million (\$8.5 million net of tax benefit) in 2021, and \$6.9 million (\$5.1 million net of tax benefit) in 2020.

As of December 31, 2022, there was \$18.7 million of total unrecognized compensation cost related to non-vested share-based compensation arrangements which is expected to be recognized over a weighted-average period of 1.9 years.

NOTE 23. EMPLOYEE COSTS

	2022	2021	2020
Wages, salaries and incentive compensation	\$ 259.7	\$ 259.9	\$ 207.6
Payroll taxes	18.3	13.4	15.6
Defined contribution and defined benefit pension plan expense, net	8.5	10.0	1.0
Insurance and other benefit costs	29.9	28.2	25.1
Share-based compensation	14.3	11.3	6.9
Total	<u>\$ 330.7</u>	<u>\$ 322.8</u>	<u>\$ 256.2</u>

NOTE 24. SHAREHOLDERS' EQUITY

Common Stock Repurchase Plan

On July 29, 2016, our Board of Directors approved our share repurchase program pursuant to which we are authorized to repurchase up to \$1,200.0 million of our outstanding shares of common stock through December 31, 2023 (the "Program"). We had \$348.8 million remaining under the Board's repurchase authorization as of December 31, 2022.

Armstrong World Industries, Inc., and Subsidiaries  
Notes to Consolidated Financial Statements  
(dollar amounts in millions, except share data)

Repurchases under the Program may be made through open market, block and privately negotiated transactions, including Rule 10b5-1 plans, at such times and in such amounts as management deems appropriate, subject to market and business conditions, regulatory requirements and other factors. The Program does not obligate AWI to repurchase any particular amount of common stock and may be suspended or discontinued at any time without notice.

During 2022, we repurchased 1.9 million shares under the Program for a total cost of \$165.0 million, excluding commissions, or an average price of \$87.31 per share. Since inception, we have repurchased 12.4 million shares under the Program for a total cost of \$851.2 million, excluding commissions, or an average price of \$68.66 per share.

### Dividends

In February, April and July 2022, our Board of Directors declared \$0.231 per share quarterly dividends, which were paid to shareholders in March, May and August 2022. In October 2022, our Board of Directors declared a \$0.254 per share quarterly dividend, which was paid to shareholders in November 2022. On February 14, 2023, our Board of Directors declared a \$0.254 per share quarterly dividend to be paid in March 2023.

### Accumulated Other Comprehensive (Loss)

The balance of each component of accumulated other comprehensive (loss), net of tax is presented in the table below.

	December 31, 2022	December 31, 2021
Foreign currency translation adjustments	\$ 0.5	\$ 2.3
Derivative gain (loss), net	9.5	(9.1)
Pension and postretirement adjustments	(110.1)	(102.8)
Accumulated other comprehensive (loss)	<u>\$ (100.1)</u>	<u>\$ (109.6)</u>

The amounts and related tax effects allocated to each component of other comprehensive income (loss) for 2022, 2021, and 2020 are presented in the tables below.

	Pre-tax Amount	Tax (Expense) Benefit	After-tax Amount
<u>2022</u>			
Foreign currency translation adjustments	\$ (1.8)	\$ -	\$ (1.8)
Derivative gain, net	24.9	(6.3)	18.6
Pension and postretirement adjustments	(9.6)	2.3	(7.3)
Total other comprehensive income (loss)	<u>\$ 13.5</u>	<u>\$ (4.0)</u>	<u>\$ 9.5</u>

	Pre-tax Amount	Tax (Expense) Benefit	After-tax Amount
<u>2021</u>			
Derivative gain, net	\$ 13.4	\$ (3.5)	\$ 9.9
Pension and postretirement adjustments	(13.4)	3.2	(10.2)
Total other comprehensive (loss)	<u>\$ -</u>	<u>\$ (0.3)</u>	<u>\$ (0.3)</u>

	Pre-tax Amount	Tax Benefit (Expense)	After-tax Amount
<u>2020</u>			
Foreign currency translation adjustments	\$ (7.1)	\$ -	\$ (7.1)
Derivative (loss), net	(14.2)	3.7	(10.5)
Pension and postretirement adjustments	382.9	(98.5)	284.4
Total other comprehensive income (loss)	<u>\$ 361.6</u>	<u>\$ (94.8)</u>	<u>\$ 266.8</u>

Armstrong World Industries, Inc., and Subsidiaries  
Notes to Consolidated Financial Statements  
(dollar amounts in millions, except share data)

The following table summarizes the activity, by component, related to the change in AOCI for December 31, 2022 and 2021:

	Foreign Currency Translation Adjustments	Derivative Gain (Loss) <sup>(1)</sup>	Pension and Postretirement Adjustments <sup>(1)</sup>	Total Accumulated Other Comprehensive (Loss) <sup>(1)</sup>
Balance, December 31, 2020	\$ 2.3	\$ (19.0)	\$ (92.6)	\$ (109.3)
Other comprehensive income (loss) before reclassifications, net of tax (expense) benefit of \$-, (\$5.4), \$3.5 and (\$1.9)	-	16.5	(11.0)	5.5
Amounts reclassified from accumulated other comprehensive (loss)	-	(6.6)	0.8	(5.8)
Net current period other comprehensive income (loss)	-	9.9	(10.2)	(0.3)
Balance, December 31, 2021	2.3	(9.1)	(102.8)	(109.6)
Other comprehensive (loss) income before reclassifications, net of tax (expense) benefit of \$-, (\$6.7), \$2.6 and (\$4.1)	(1.8)	20.2	(8.1)	10.3
Amounts reclassified from accumulated other comprehensive (loss)	-	(1.6)	0.8	(0.8)
Net current period other comprehensive (loss) income	(1.8)	18.6	(7.3)	9.5
Balance, December 31, 2022	<u>\$ 0.5</u>	<u>\$ 9.5</u>	<u>\$ (110.1)</u>	<u>\$ (100.1)</u>

(1) Amounts are net of tax

Armstrong World Industries, Inc., and Subsidiaries  
Notes to Consolidated Financial Statements  
(dollar amounts in millions, except share data)

The amounts reclassified from AOCI and the affected line item of the Consolidated Statements of Operations and Comprehensive Income are presented in the table below.

	Amounts Reclassified from Accumulated Other Comprehensive (Loss)		Affected Line Item in the Consolidated Statements of Operations and Comprehensive Income
	2022	2021	
<b>Derivative Adjustments:</b>			
Interest rate swap contracts, before tax	\$ (2.0)	\$ (8.5)	Interest expense
Tax impact	0.4	1.9	Income tax expense (benefit)
Total (income), net of tax	<u>(1.6)</u>	<u>(6.6)</u>	
<b>Pension and Postretirement Adjustments:</b>			
Prior service credit amortization	(0.3)	(0.3)	Other non-operating (income) expense, net
Amortization of net actuarial loss	1.4	1.4	Other non-operating (income) expense, net
Total loss, before tax	1.1	1.1	
Tax impact	(0.3)	(0.3)	Income tax expense (benefit)
Total loss, net of tax	0.8	0.8	
Total reclassifications for the period	<u>\$ (0.8)</u>	<u>\$ (5.8)</u>	

**NOTE 25. SUPPLEMENTAL FINANCIAL INFORMATION**

	2022	2021	2020
<b><u>Selected operating expense</u></b>			
Maintenance and repair costs	\$ 42.7	\$ 41.9	\$ 38.1
Product innovation costs	14.9	14.6	14.7
Advertising costs	9.2	8.0	6.8
<b><u>Other non-operating (income) expense, net</u></b>			
Interest income	\$ (0.5)	\$ (0.1)	\$ (0.3)
Pension and postretirement (credits) cost	(5.3)	(5.3)	358.7
Other	(0.2)	(0.2)	(1.0)
Total	<u>\$ (6.0)</u>	<u>\$ (5.6)</u>	<u>\$ 357.4</u>

**NOTE 26. RELATED PARTIES**

For some customers, we purchase grid products from WAVE, our 50%-owned joint venture with Worthington, for resale to customers. The total amount of these purchases was \$34.5 million in 2022, \$27.9 million in 2021 and \$21.5 million in 2020. We also provide certain selling, promotional and administrative processing services to WAVE for which we receive reimbursement. Those services amounted to \$29.1 million in 2022, \$21.6 million in 2021, and \$20.7 million in 2020. The net amount due to WAVE from us for all of our relationships was \$5.3 million as of December 31, 2022 and \$4.3 million as of December 31, 2021. See Note 11 to the Consolidated Financial Statements for additional information.

**NOTE 27. LITIGATION AND RELATED MATTERS**

**ENVIRONMENTAL MATTERS**

**Environmental Compliance**

Our manufacturing and research facilities are affected by various federal, state and local requirements relating to the discharge of materials and the protection of the environment. We make expenditures necessary for compliance with applicable environmental requirements at each of our operating facilities. While these expenditures are not typically material, the applicable regulatory requirements continually change and, as a result, we cannot predict with certainty the amount, nature or timing of future expenditures associated with environmental compliance.

Armstrong World Industries, Inc., and Subsidiaries  
Notes to Consolidated Financial Statements  
(dollar amounts in millions, except share data)

Environmental Sites

*Summary*

We are actively involved in the investigation and remediation of existing or potential environmental contamination under the Comprehensive Environmental Response, Compensation and Liability Act (“CERCLA”) and state Superfund and similar environmental laws at two domestically owned locations allegedly resulting from past industrial activity.

In each location, we are one of multiple potentially responsible parties and have agreed to jointly fund the required investigation and remediation, while preserving our defenses to the liability. We may also have rights of contribution or reimbursement from other parties or coverage under applicable insurance policies. We have pursued coverage and recoveries under those applicable insurance policies with respect to certain of the sites, including the Macon, GA site and the Elizabeth City, NC site, each of which is summarized below. Other than disclosed below, we are unable to predict the outcome of these matters or the timing of any future recoveries, whether through settlement or otherwise. We are also unable to predict the extent to which any recoveries might cover our final share of investigation and remediation costs for these sites. Our final share of investigation and remediation costs may exceed any such recoveries, and such amounts net of insurance recoveries may be material.

Between 2017 and 2021, we entered settlement agreements totaling \$53.0 million with certain legacy insurance carriers to resolve ongoing litigation and recover fees and costs previously incurred by us in connection with certain environmental sites. These settlements were initially recorded as reductions to cost of goods sold and SG&A expenses, reflecting the same income statement categories where environmental expenditures were historically recorded. Beginning in 2020, cumulative insurance recoveries exceeded cumulative expenses to date related to the respective environmental sites and the excess was recorded within long-term liabilities on our Consolidated Balance Sheets. As of December 31, 2022 and 2021, insurance recoveries in excess of cumulative expenses were \$3.5 million and \$4.8 million, respectively. The excess recoveries will be released to offset any future expenses, including additional reserves for potential liabilities, incurred on the respective environmental sites. We may enter into additional settlement agreements in the future, which may or may not be material, with other legacy insurers to obtain reimbursement or contribution for environmental site expenses.

Estimates of our future liability at the environmental sites are based on evaluations of currently available facts regarding each individual site. We consider factors such as our activities associated with the site, existing technology, presently enacted laws and regulations and prior company experience in remediating contaminated sites. Although current law imposes joint and several liability on all parties at Superfund sites, our contribution to the remediation of these sites is expected to be limited by the number of other companies potentially liable for site remediation. As a result, our estimated liability reflects only our expected share. In determining the probability of contribution, we consider the solvency of other parties, the site activities of other parties, whether liability is being disputed, the terms of any existing agreements and experience with similar matters, and the effect of our October 2006 Chapter 11 reorganization upon the validity of the claim, if any.

*Specific Material Events*

*Macon, GA*

The U.S. Environmental Protection Agency (the “EPA”) has listed two landfills located on a portion of our facility in Macon, GA, along with the former Macon Naval Ordnance Plant landfill adjacent to our property, portions of Rocky Creek, and certain tributaries leading to Rocky Creek (collectively, the “Macon Site”) as a Superfund site on the National Priorities List due to the presence of contaminants, most notably polychlorinated biphenyls (“PCBs”).

In September 2010, we entered into an Administrative Order on Consent for a Removal Action (the “Removal Action”) with the EPA to investigate PCB contamination in one of the landfills on our property, the Wastewater Treatment Plant Landfill (“Operable Unit 1”). After completing an investigation of Operable Unit 1 and submitting our final Engineering Evaluation/Cost Analysis, the EPA issued an Action Memorandum in July 2013 selecting our recommended remedy for the Removal Action. The Operable Unit 1 response action is complete and the final report was submitted to the EPA in October 2016. The EPA approved the final report in November 2016, and a Post-Removal Control Plan was submitted to the EPA in March 2017.

It is probable that we will incur field investigation, engineering and oversight costs associated with a Remedial Investigation and Feasibility Study (“RI/FS”) with respect to the remainder of the Superfund site, which includes the other landfill on our property, as well as areas on and adjacent to our property and Rocky Creek (“Operable Unit 2”). In September 2015, AWI and other Potential Responsible Parties (“PRPs”) received a Special Notice Letter from the EPA under CERCLA inviting AWI and the PRPs to enter into the negotiation of an agreement to conduct an RI/FS of Operable Unit 2. We and the other PRPs entered into a settlement agreement with the EPA effective September 2018, in response to the Special Notice Letter to conduct the RI/FS. The PRPs submitted a

Armstrong World Industries, Inc., and Subsidiaries  
Notes to Consolidated Financial Statements  
(dollar amounts in millions, except share data)

complete RI/FS work plan, which was approved by the EPA in September 2019. Investigative work on this portion of the site commenced in December 2019.

In June 2021, the PRPs submitted the Site Characterization Summary Report (SCSR) for Operable Unit 2 to the EPA. The purpose of the SCSR is to demonstrate that the available data for Operable Unit 2 is adequate for the risk assessment and for the development of remedial action objectives. In August 2022, the PRPs submitted to the EPA a Human Health Baseline Risk Assessment, and in December 2022, the PRPs submitted to the EPA a final Baseline Ecological Risk Assessment for Operable Unit 2. Both risk assessments will be exhibits to the draft Remedial Investigation Report, which the PRPs are currently working on, while they evaluate any additional investigation work needed to complete the RI/FS. We may ultimately incur costs in remediating any contamination discovered during the RI/FS. The current estimate of future liability at this site includes only our estimated share of the costs of the investigative work that the EPA is requiring the PRPs to perform at this time. We are unable to reasonably estimate our final share of the total costs associated with the investigation work or any resulting remediation therefrom, although such amounts may be material to any one quarter's or year's results of operations in the future. We do not expect the total future costs to have a material adverse effect on our liquidity or financial condition as the cash payments may be made over many years.

Elizabeth City, NC

This site is a former cabinet manufacturing facility that from 1977 until 1996 was operated by Triangle Pacific Corporation, now known as Armstrong Wood Products, Inc. ("AWP"). The site was formerly owned by the U.S. Navy ("Navy") and Westinghouse, which was purchased by Paramount Global ("Paramount") (then known as CBS Corporation). We assumed ownership of the site when we acquired the stock of AWP in 1998. Prior to our acquisition, the North Carolina Department of Environment and Natural Resources listed the site as a hazardous waste site. In 1997, AWP entered into a cost sharing agreement with Westinghouse whereby the parties agreed to share equally in costs associated with investigation and potential remediation. In 2000, AWP and Paramount entered into an Administrative Order on Consent to conduct an RI/FS with the EPA for the site. In 2007, we and Paramount entered into an agreement with the Navy whereby the Navy agreed to pay one third of defined past and future investigative costs up to a certain amount, which has now been exhausted. The EPA approved the RI/FS work plan in August 2011. In January 2014, we submitted draft Remedial Investigation and Risk Assessment reports and conducted supplemental investigative work based upon agency comments to those reports. In connection with the separation of Armstrong Flooring, Inc. in 2016, we agreed to retain any legacy environmental liabilities associated with the AWP site. The EPA published an Interim Action Proposed Plan for the site in April 2018 seeking public comment until June 2018. The EPA evaluated comments, including ours, and has published its Interim Record Of Decision ("IROD") selecting an interim cleanup approach. In September 2018, AWI and Paramount received a Special Notice Letter from the EPA under CERCLA inviting AWI and Paramount to enter into the negotiation of a settlement agreement to conduct or finance the response action at the site. In response to the September 2018 Special Notice Letter, we and Paramount submitted a good faith offer to the EPA in May 2019. In June 2021, we entered into a negotiated Partial Consent Decree and Site Participation Agreement with the EPA, Paramount and the United States on behalf of the Navy for the remedial design and remedial action for the interim remedy. Because the United States does not conduct work as a PRP at Superfund sites, similar to the 2007 agreement, the United States agreed to pay its share of the estimated costs of performing the work. The Partial Consent Decree was entered by the U.S. District Court for the Eastern District of North Carolina in January 2022. A Remedial Design Work Plan for the site was submitted to the EPA in June 2022, and AWI and Paramount responded on November 2022 to comments received from the EPA in September 2022. The current estimate of future liability at this site includes only our estimated share of the costs of the interim remedial action that, at this time, we anticipate the EPA will require the PRPs to perform. We are unable to reasonably estimate our final share of the total costs associated with the interim or final remediation at the site, although such amounts may be material to any one quarter's or year's results of operations in the future. We do not expect the total future costs to have a material adverse effect on our liquidity or financial condition as the cash payments may be made over many years.

Summary of Financial Position

Total liabilities of \$0.5 million and \$0.7 million as of December 31, 2022 and 2021, respectively, were recorded for environmental liabilities that we consider probable and for which a reasonable estimate of the probable liability could be made. As of December 31, 2022, \$0.5 million of environmental liabilities were reflected within other long-term liabilities on the Consolidated Balance Sheets. As of December 31, 2021, \$0.5 million were reflected within other long-term liabilities, and \$0.2 million were reflected within accounts payable and accrued expenses on the Consolidated Balance Sheets. During 2022 and 2021, we recorded \$1.3 million and \$0.2 million, respectively, of additional reserves for potential environmental liabilities. As noted above, expenses associated with the additional reserves recorded in 2022 and 2021 are offset through the release of a portion of the balance of insurance recoveries in excess of cumulative expenses. Where existing data is sufficient to estimate the liability, that estimate has been used; where only a range of probable liabilities is available and no amount within that range is more likely than any other, the lower end of the range has been

Armstrong World Industries, Inc., and Subsidiaries  
Notes to Consolidated Financial Statements  
(dollar amounts in millions, except share data)

used. As assessments and remediation activities progress at each site, these liabilities are reviewed to reflect new information as it becomes available and adjusted to reflect amounts actually incurred and paid. These liabilities are undiscounted.

The estimated environmental liabilities above do not take into account any claims for additional recoveries from insurance or third parties. It is our policy to record insurance recoveries as assets in the Consolidated Balance Sheets when realizable. We incur costs to pursue environmental insurance recoveries, which are expensed as incurred.

Actual costs to be incurred at identified sites may vary from our estimates. Based on our knowledge of the identified sites, it is not possible to reasonably estimate future costs in excess of amounts already recognized.

**OTHER CLAIMS**

From time to time, we are involved in other various lawsuits, claims, investigations and other legal matters that arise in the ordinary course of business, including matters involving our products, intellectual property, relationships with suppliers, relationships with distributors, other customers or end users, relationships with competitors, employees and other matters. In connection with those matters, we may have rights of indemnity, contribution or reimbursement from other parties or coverage under applicable insurance policies. When applicable and appropriate, we will seek indemnity, contribution or reimbursement from other parties and pursue coverage and recoveries under those policies, but are unable to predict the outcome of those demands. While complete assurance cannot be given to the outcome of any proceedings relating to these matters, we do not believe that any current claims, individually or in the aggregate, will have a material adverse effect on our financial condition, liquidity or results of operations.

**NOTE 28. EARNINGS PER SHARE**

The following table is a reconciliation of earnings (loss) to earnings (loss) attributable to common shares used in our basic and diluted Earnings (Loss) Per Share (“EPS”) calculations for the years ended December 31, 2022, 2021 and 2020. EPS components may not add due to rounding.

	<u>2022</u>	<u>2021</u>	<u>2020</u>
Earnings (loss) from continuing operations	\$ 199.9	\$ 185.3	\$ (84.1)
(Earnings) allocated to participating vested share awards	(0.3)	(0.3)	(0.1)
Earnings (loss) from continuing operations attributable to common shares	<u>\$ 199.6</u>	<u>\$ 185.0</u>	<u>\$ (84.2)</u>

The following table is a reconciliation of basic shares outstanding to diluted shares outstanding for the years ended December 31, 2022, 2021 and 2020 (shares in millions):

	<u>2022</u>	<u>2021</u>	<u>2020</u>
Basic shares outstanding	46.3	47.6	47.9
Dilutive effect of common stock equivalents	0.1	0.3	-
Diluted shares outstanding	<u>46.4</u>	<u>47.9</u>	<u>47.9</u>

Anti-dilutive stock awards excluded from the computation of dilutive EPS for 2022, 2021 and 2020 were 19,134, 8,548 and 313,003, respectively. Due to the net loss for the year ended December 31, 2020, all common stock equivalents were considered anti-dilutive.



**ITEM 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE**

Not applicable.

**ITEM 9A. CONTROLS AND PROCEDURES**

Our management, with the participation of our chief executive officer and our chief financial officer, performed an evaluation of our disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) of the Securities Exchange Act of 1934 (“Exchange Act”)) as of December 31, 2022. Our chief executive officer and our chief financial officer have concluded that our disclosure controls and procedures were effective insofar as they are designed to provide reasonable assurance that information required to be disclosed by us in the reports we file or submit under the Exchange Act is (i) recorded, processed, summarized and reported, within the time periods specified in the Commission’s rules and forms, and (ii) accumulated and communicated to our management, including our principal executive and principal financial officers, or persons performing similar functions, as appropriate to allow timely decisions regarding required disclosure. We believe that a controls system, no matter how well designed and operated, cannot provide absolute assurance that the objectives of the controls system are met, and no evaluation of controls can provide absolute assurance that all control issues and instances of fraud, if any, within a company have been detected.

There have been no material changes in our internal control over financial reporting that occurred during the quarter ended December 31, 2022 that have materially affected or are reasonably likely to materially affect our internal control over financial reporting. During the second quarter of 2022, we changed our enterprise resource planning system. In connection with this change, we have updated the processes that comprise the Company's internal control over financial reporting, as necessary, to accommodate related changes in the Company's systems and business processes. To date, this change has not had, and the Company does not believe it will have in the future, an adverse effect on the Company's internal control over financial reporting.

Management’s Report on Internal Control over Financial Reporting and the Report of Independent Registered Public Accounting Firm are incorporated by reference to Item 8 to this Annual Report on Form 10-K.

**ITEM 9B. OTHER INFORMATION**

Not applicable.

**ITEM 9C. DISCLOSURE REGARDING FOREIGN JURISDICTIONS THAT PREVENT INSPECTIONS**

Not applicable.

### PART III

#### **ITEM 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE**

##### **Information about our Executive Officers (as of February 21, 2023):**

<u>Name</u>	<u>Age</u>	<u>Present Position and Business Experience During the Last Five Years*</u>
Victor D. Grizzle	61	Armstrong World Industries, Inc. President & CEO, Director since April 2016
Christopher P. Calzaretta	46	Armstrong World Industries, Inc. Senior Vice President, Chief Financial Officer since August 2022 Vice President, Finance, Americas (January 2018 to August 2022)
Mark A. Hershey	53	Armstrong World Industries, Inc. Senior Vice President, Americas since January 2022 Senior Vice President, General Counsel and Business Development (January 2020 to January 2022) Senior Vice President, General Counsel (July 2011 to January 2022) Chief Compliance Officer (February 2012 to January 2022) Secretary (April 2016 to February 2022)
Ellen R. Romano†	61	Armstrong World Industries, Inc. Senior Vice President, Human Resources since July 2013
Jill A. Crager	59	Armstrong World Industries, Inc. Senior Vice President, Sales Operations since January 2022 Vice President, Digitalization (December 2019 to December 2022) Vice President, National Accounts & Retail (November 2018 to December 2019) Vice President, Customer Service & Sales Operations (August 2018 to November 2018) Director, Customer & Sales Operations (April 2015 to July 2018)
Dawn M. Kirchner-King	53	Armstrong World Industries, Inc. Senior Vice President, Chief Information Officer since August 2022 Chief Information Officer (July 2015 to August 2022)
Austin K. So	49	Armstrong World Industries, Inc. Senior Vice President, General Counsel and Chief Compliance Officer since February 2022 StoneMor, Inc. Senior Vice President, Chief Legal Officer & Secretary (July 2016 to January 2022)
James T. Burge	47	Armstrong World Industries, Inc. Vice President, Controller since April 2021 Americas Controller (December 2017 to April 2021)

\* Information in parenthesis regarding previously held positions indicates the duration the Executive Officer held the position.

† As previously announced, this executive officer will be retiring in 2023.

All executive officers are elected by the Board of Directors to serve in their respective capacities until their successors are elected and qualified or until their earlier resignation or removal.

#### **Code of Ethics**

We have adopted a Code of Business Conduct that applies to all employees, executives and directors, specifically including our Chief Executive Officer, our Chief Financial Officer and our Controller. We have also adopted a Code of Ethics for Financial Professionals (together with the Code of Business Conduct, the “Codes of Ethics”) that applies to all professionals in our finance and accounting functions worldwide, including our Chief Financial Officer and our Controller.

The Codes of Ethics are intended to deter wrongdoing and to promote:

- honest and ethical conduct, including the ethical handling of actual or apparent conflicts of interest between personal and professional relationships;
- full, fair, accurate, timely and understandable public disclosures;
- compliance with applicable governmental laws, rules and regulations;
- the prompt internal reporting of violations of the Codes of Ethics; and
- accountability for compliance with the Codes of Ethics.

The Codes of Ethics are available at <http://www.armstrongceilings.com/corporate/codes-policies.html> and in print free of charge. Any waiver of the Company's Code of Business Conduct, particularly its conflicts-of-interest provisions, which may be proposed to apply to any director or executive officer, must be reviewed in advance by the Nominating, Governance and Social Responsibility Committee of the Board of Directors, which would be responsible for making a recommendation to the Board of Directors for approval or disapproval. The Board of Directors' decision on any such matter would be disclosed publicly in compliance with applicable legal standards and the rules of the New York Stock Exchange. We intend to satisfy these requirements by making disclosures concerning such matters available on the "For Investors" page of our website. There were no waivers or exemptions from the Code of Business Conduct in 2022 applicable to any director or executive officer.

Other information required by Item 10 is incorporated by reference to the sections entitled "Election of Directors," "Corporate Governance," and "Security Ownership of Certain Beneficial Owners, Management and Directors" in the Company's proxy statement for its 2023 annual meeting of shareholders to be filed no later than May 1, 2023.

#### **ITEM 11. EXECUTIVE COMPENSATION**

The information required by Item 11 is incorporated by reference to the sections entitled "Compensation Discussion and Analysis," "Compensation Committee Report," "2022 Summary Compensation Table," "Grants of Plan-Based Awards," "Outstanding Equity Awards at Fiscal Year-End," "Options Exercised and Stock Vested," "Pension Benefits," "Nonqualified Deferred Compensation," "Potential Payments Upon Termination or Change in Control," "Board's Role in Risk Management Oversight," "Compensation Committee Interlocks and Insider Participation" and "Compensation of Directors" in the Company's proxy statement for its 2023 annual meeting of shareholders to be filed no later than May 1, 2023.

#### **ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS**

The information required by Item 12 is incorporated by reference to the sections entitled "Security Ownership of Certain Beneficial Owners, Management and Directors" and "Securities Authorized for Issuance Under Equity Compensation Plans" in the Company's proxy statement for its 2023 annual meeting of shareholders to be filed no later than May 1, 2023.

#### **ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE**

The information required by Item 13 is incorporated by reference to the sections entitled "Review of Related Person Transactions" and "Director Independence" in the Company's proxy statement for its 2023 annual meeting of shareholders to be filed no later than May 1, 2023.

#### **ITEM 14. PRINCIPAL ACCOUNTANT FEES AND SERVICES**

The information required by Item 14 is incorporated by reference to the sections entitled "Fees Paid to Independent Registered Public Accounting Firm" in the Company's proxy statement for its 2023 annual meeting of shareholders to be filed no later than May 1, 2023.

## PART IV

### **ITEM 15. EXHIBITS AND FINANCIAL STATEMENT SCHEDULES**

(a) Listing of Documents

1. The financial statements and schedule of Armstrong World Industries, Inc. filed as a part of this 2022 Annual Report on Form 10-K is listed in the “Index to Financial Statements and Schedules” on Page 32.
2. The financial statements required to be filed pursuant to Item 15 of Form 10-K are:  
Worthington Armstrong Venture consolidated financial statements for the years ended December 31, 2022, 2021, and 2020 (filed herewith as Exhibit 99.1).
3. The following exhibits are filed as part of this 2022 Annual Report on Form 10-K:

**Exhibit No.**    **Description**

- |      |  |
|------|--|
| 3.1  | Amended and Restated Articles of Incorporation of Armstrong World Industries, Inc. is incorporated by reference from the Current Report on Form 10-Q filed on May 1, 2017, wherein it appeared as Exhibit 3.1.   |
| 3.2  | Amended and Restated Bylaws of Armstrong World Industries, Inc., are incorporated by reference from the Current Report on Form 8-K filed on April 17, 2020, wherein it appeared as Exhibit 3.1.  |
| 4.1  | Description of Securities Registered under Section 12 of the Securities Exchange Act of 1934.†   |
| 10.1 | Second Amended and Restated Credit Agreement, dated as of December 7, 2022, by and among Armstrong World Industries, Inc., as Borrower, certain subsidiaries of Armstrong World Industries, Inc. identified therein, as the Guarantors, Bank of America, N.A., as the administrative agent, the collateral agent, a letter of credit issuer and the swing line lender, Citizens Bank, N.A., Manufacturers & Traders Trust Company, PNC Bank, National Association, TD Bank, N.A. and Truist Bank, as co-syndication agents, JPMorgan Chase Bank, N.A., The Bank of Nova Scotia, and First National Bank of Pennsylvania, as co-documentation agents, BofA Securities, Inc., Citizens Bank, N.A., Manufacturers & Traders Trust Company, PNC Capital Markets, LLC, TD Bank, N.A., and Truist Securities, Inc., as joint lead arrangers and joint bookrunners and the other lenders and letter of credit issuers party thereto is incorporated by reference from the Current Report on Form 8-K filed on December 12, 2022, wherein it appeared as Exhibit 10.1. |
| 10.2 | Amended and Restated Joint Venture Agreement, dated February 22, 2016 between Armstrong Ventures, Inc. and Worthington Ventures, Inc., is incorporated by reference from the Annual Report on Form 10-K filed on February 22, 2016, wherein it appeared as Exhibit 10.12.  |
| 10.3 | Tax Matters Agreement, dated as of April 1, 2016, by and between Armstrong World Industries, Inc. and Armstrong Flooring, Inc. is incorporated by reference from the Current Report on Form 8-K filed on April 4, 2016, wherein it appeared as Exhibit 10.2.   |
| 10.4 | Trademark License Agreement, dated as of April 1, 2016, by and between Armstrong World Industries, Inc., AWI Licensing LLC and Armstrong Flooring, Inc. is incorporated by reference from the Current Report on Form 8-K filed on April 4, 2016, wherein it appeared as Exhibit 10.4.  |
| 10.5 | Share Purchase Agreement, dated November 17, 2017, by and between Armstrong World Industries, Inc. and Knauf International GmbH is incorporated by reference from the Current Report on Form 8-K filed on November 20, 2017, wherein it appeared as Exhibit 2.1.   |
| 10.6 | Deed of Amendment to the Share Purchase Agreement dated as of July 18, 2018, by and between Armstrong World Industries, Inc. and Knauf International GmbH is incorporated by reference from the Current Report on Form 8-K filed on July 19, 2018, wherein it appeared as Exhibit 2.1.   |
| 10.7 | 2011 Long-Term Incentive Plan, effective as of June 24, 2011, is incorporated by reference to Armstrong World Industries, Inc.’s Definitive Proxy Statement on Schedule 14A for the Armstrong World Industries, Inc. 2011 Annual Meeting of Shareholders held on June 24, 2011 filed on April 28, 2011, wherein it appeared as Exhibit A.*   |
| 10.8 | Form of 2011 Long-Term Incentive Plan Terms and Conditions, as amended for 2013 (Grant of Nonqualified Stock Options – U.S.(Executive Officer)), is incorporated by reference from the Quarterly Report on Form 10-Q filed on April 29, 2013, wherein it appeared as Exhibit 10.2.*  |
| 10.9 | Form of 2011 Long-Term Incentive Plan Terms and Conditions, as amended for 2013 (Grant of Nonqualified Stock Options – U.S.), is incorporated by reference from the Quarterly Report on Form 10-Q filed on April 29, 2013, wherein it appeared as Exhibit 10.3.*   |

- 10.10 Form of 2011 Long-Term Incentive Plan Terms and Conditions, as amended for 2014 (Grant of Nonqualified Stock Options – U.S.), is incorporated by reference from the Quarterly Report on Form 10-Q filed on April 28, 2014, wherein it appeared as Exhibit 10.1.\*
- 10.11 Armstrong World Industries, Inc. 2016 Long-Term Incentive Plan, effective as of July 8, 2016 and amended and restated effective February 20, 2019, is incorporated by reference from the Annual Report on Form 10-K filed on February 25, 2019, wherein it appeared as Exhibit 10.42.\*
- 10.12 Form of Long-Term Performance-Based Restricted Stock Unit Grant for 2019 and later years under the 2016 Long-Term Incentive Plan is incorporated by reference from the Annual Report on Form 10-K, filed on February 23, 2021, wherein it appeared as Exhibit 10.25.\*‡
- 10.13 Form of Long-Term Time-Based Restricted Stock Unit Grant for 2022 under the 2016 Long-Term Incentive Plan is incorporated by reference from the Annual Report on Form 10-K, filed on February 22, 2022, wherein it appeared as Exhibit 10.18.\*
- 10.14 Armstrong World Industries, Inc. 2020 Inducement Award Plan, is incorporated by reference from the Registration Statement on Form S-8 filed on December 15, 2020, wherein it appeared as Exhibit 4.4.\*
- 10.15 Nonqualified Deferred Compensation Plan effective January 2005, as amended July 23, 2010, is incorporated by reference from the Annual Report on Form 10-K, filed on February 28, 2011, wherein it appeared as Exhibit 10.4.\*
- 10.16 Armstrong World Industries, Inc. Equity and Cash Incentive Plan effective as of June 16, 2022, in incorporated by reference to Armstrong World Industries, Inc.’s Definitive Proxy Statement on Schedule 14A for the Armstrong World Industries, Inc. 2022 Annual Meeting of Shareholders held on June 16, 2022 filed on April 27, 2022, wherein it appeared as Annex B.\*
- 10.17 Form of Long-Term Performance-Based Restricted Stock Unit Grant for 2022 under the 2022 Equity and Cash Incentive Plan.\*†
- 10.18 Form of Long-Term Time-Based Restricted Stock Unit Grant for 2022 under the 2022 Equity and Cash Incentive Plan.\*†
- 10.19 Retirement Benefit Equity Plan, effective January 1, 2005, as amended October 29, 2007 and December 8, 2008, is incorporated by reference from the Annual Report on Form 10-K, filed on February 26, 2009, wherein it appeared as Exhibit 10.2.\*
- 10.20 2008 Directors Stock Unit Plan, as amended December 8, 2008, November 30, 2010 and June 24, 2011 is incorporated by reference to the Current Report on Form 8-K filed on June 13, 2011, wherein it appeared as Exhibit 99.2.\*
- 10.21 Form of 2009 and 2010 Award under the 2008 Directors Stock Unit Plan, as amended, is incorporated by reference from the Quarterly Report on Form 10-Q for the quarter ended September 30, 2009, filed on October 28, 2009, wherein it appeared as Exhibit 10.27.\*
- 10.22 Form of 2011, 2012, 2013, 2014 and 2015 Award under the 2008 Directors Stock Unit Plan, as amended, is incorporated by reference from the Annual Report on Form 10-K filed on February 27, 2012, wherein it appeared as Exhibit 10.40.\*
- 10.23 Armstrong World Industries, Inc. 2016 Directors Stock Unit Plan, is incorporated by reference from the Current Report on Form 8-K filed on July 11, 2016, wherein it appeared as Exhibit 10.1.\*
- 10.24 Form of Stock Unit Grant Agreement under the Armstrong World Industries, Inc. 2016 Directors Stock Unit Plan, is incorporated by reference from the Current Report on Form 8-K filed on July 11, 2016, wherein it appeared as Exhibit 10.3.\*
- 10.25 Offer Letter to Victor D. Grizzle dated January 4, 2011, is incorporated by reference from the Current Report on Form 8-K filed on January 10, 2011, wherein it appeared as Exhibit 99.2.\*
- 10.26 Offer Letter to Mark A. Hershey dated November 14, 2021 is incorporated by reference from the Annual Report on Form 10-K, filed on February 22, 2022, wherein it appeared as Exhibit 10.28.\*
- 10.27 Offer Letter to Austin So dated January 6, 2022 is incorporated by reference from the Annual Report on Form 10-K, filed on February 22, 2022, wherein it appeared as Exhibit 10.29.\*
- 10.28 Offer Letter to Christopher Calzaretta dated June 9, 2022. \*†
- 10.29 Form of Indemnification Agreement for Officers and Directors of Armstrong World Industries, Inc. is incorporated by reference from the Report on Form 8-K filed on July 27, 2021, wherein it appeared as Exhibit 10.1.\*

- 10.30 Form of Amended and Restated Severance Agreement with Certain Officers, approved for use on October 26, 2016 is incorporated by reference from the Report on Form 8-K filed on October 31, 2016, wherein it appeared as Exhibit 10.1.\*
- 14 The Armstrong Code of Business Conduct, revised as of July 29, 2011, is incorporated by reference from the Current Report on Form 8-K filed on August 1, 2011, wherein it appeared as Exhibit 14.1.
- 21 Armstrong World Industries, Inc.'s Subsidiaries.†
- 23.1 Consent of Independent Registered Public Accounting Firm.†
- 23.2 Consent of Independent Auditors.†
- 31.1 Certification of Chief Executive Officer required by Rule 13a-15(e) or 15d-15(e) of the Securities Exchange Act.†
- 31.2 Certification of Chief Financial Officer required by Rule 13a-15(e) or 15d-15(e) of the Securities Exchange Act.†
- 32.1 Certification of Chief Executive Officer required by Rule 13a and 18 U.S.C. Section 1350.††
- 32.2 Certification of Chief Financial Officer required by Rule 13a and 18 U.S.C. Section 1350.††
- 99.1 Worthington Armstrong Venture consolidated financial statements as of December 31, 2022 and 2021 and for the years ended December 31, 2022, 2021 and 2020.†
- 101 Inline Interactive Data Files\*\*
- 104 The cover page from the Company's Annual Report on Form 10-K for the year ended December 31, 2022 has been formatted in Inline XBRL.

\* Management Contract or Compensatory Plan.

† Filed herewith.

†† Furnished herewith.

‡ Portions of this exhibit have been omitted as permitted by applicable regulations.

\*\* XBRL – Information is furnished and not filed or a part of a registration statement or prospectus for purposes of Sections 11 or 12 of the Securities Act of 1933, as amended, is deemed not filed for purposes of Section 18 of the Securities Exchange Act of 1934, as amended, and otherwise is not subject to liability under these sections.

**ITEM 16. FORM 10-K SUMMARY**

None.

## SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

ARMSTRONG WORLD INDUSTRIES, INC.  
(Registrant)

By: /s/ Victor D. Grizzle  
Director, President and Chief Executive Officer

Date: February 21, 2023

Pursuant to the requirements of the Securities Exchange Act of 1934, as amended, this Report has been signed below by the following persons on behalf of the registrant and in the capacities and on the dates indicated.

<u>Signature</u>	<u>Title</u>	<u>Date</u>
<u>/s/ Victor D. Grizzle</u> Victor D. Grizzle	Director, President and Chief Executive Officer (Principal Executive Officer)	February 21, 2023
<u>/s/ Christopher P. Calzaretta</u> Christopher P. Calzaretta	Senior Vice President and Chief Financial Officer (Principal Financial Officer)	February 21, 2023
<u>/s/ James T. Burge</u> James T. Burge	Vice President and Controller (Principal Accounting Officer)	February 21, 2023
<u>/s/ Richard D. Holder</u> Richard D. Holder	Director	February 21, 2023
<u>/s/ Barbara L. Loughran</u> Barbara L. Loughran	Director	February 21, 2023
<u>/s/ Larry S. McWilliams</u> Larry S. McWilliams	Director	February 21, 2023
<u>/s/ James C. Melville</u> James C. Melville	Director	February 21, 2023
<u>/s/ William H. Osborne</u> William H. Osborne	Director	February 21, 2023
<u>/s/ Wayne R. Shurts</u> Wayne R. Shurts	Director	February 21, 2023
<u>/s/ Roy W. Templin</u> Roy W. Templin	Director	February 21, 2023
<u>/s/ Cherryl T. Thomas</u> Cherryl T. Thomas	Director	February 21, 2023

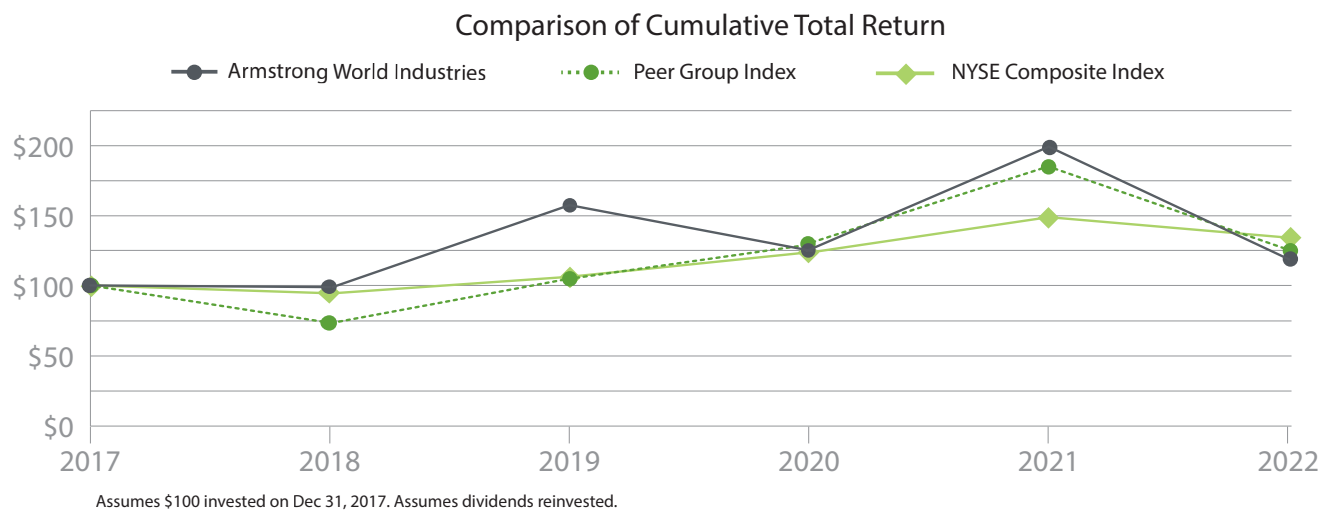
**SCHEDULE II**Armstrong World Industries, Inc., and Subsidiaries  
Valuation and Qualifying Reserves  
(amounts in millions)

	<b>Balance at beginning of year</b>	<b>Additions charged to earnings</b>	<b>Deductions</b>	<b>Balance at end of year</b>
<b><u>2020</u></b>				
Provision for bad debts	\$ 0.7	\$ 0.9	\$ (0.2)	\$ 1.4
Provision for discounts	1.4	19.4	(19.5)	1.3
Provision for warranties	0.2	5.5	(4.8)	0.9
Provision for inventory obsolescence	0.5	0.1	(0.6)	-
<b><u>2021</u></b>				
Provision for bad debts	\$ 1.4	\$ 0.4	\$ (0.8)	\$ 1.0
Provision for discounts	1.3	21.7	(21.3)	1.7
Provision for warranties	0.9	3.9	(4.0)	0.8
Provision for inventory obsolescence	-	0.3	(0.1)	0.2
<b><u>2022</u></b>				
Provision for bad debts	\$ 1.0	\$ 0.1	\$ (0.7)	\$ 0.4
Provision for discounts	1.7	24.4	(24.0)	2.1
Provision for warranties	0.8	5.6	(5.7)	0.7
Provision for inventory obsolescence	0.2	0.2	(0.1)	0.3



# Cumulative Total Stock Return Performance

The following graph shows the cumulative total shareholder return for shares of Armstrong World Industries, Inc. common stock (NYSE: AWI) during the period from December 31, 2017 to December 31, 2022. The graph also shows the cumulative returns of the NYSE Composite Index and a building materials peer group composed of the companies listed below the chart. The performance shown in the chart assumes \$100 invested on December 31, 2017, with dividends reinvested, and it should not be considered indicative of future performance.



Company/Market/Peer Group	Period Ending					
	12/31/2017	12/31/2018	12/31/2019	12/31/2020	12/31/2021	12/31/2022
Armstrong World Industries, Inc.	\$100.00	\$96.38	\$156.90	\$125.54	\$197.65	\$117.90
NYSE Composite Index	\$100.00	\$91.21	\$114.70	\$122.83	\$148.40	\$134.71
Peer Group Index	\$100.00	\$74.23	\$109.69	\$132.52	\$185.95	\$127.08

The performance peer group is composed of the following companies:  
(Market Cap is the base year)

% of Total Market Cap		% of Total Market Cap	
Allegion PLC	5%	Lennox International inc.	6%
A.O. Smith Corporation	7%	Masco Corporation	10%
Apogee Enterprises, Inc.	1%	Mohawk Industries, Inc.	15%
Acuity Brands, Inc.	5%	Owens Corning	7%
Masonite International Corp.	2%	Sherwin-Williams Company	27%
Fortune Brands Home & Security, Inc.	7%	Simpson Manufacturing Co., Inc.	2%
James Hardie Industries	5%	Interface, Inc.	1%
			100%

## Corporate Information

### Transfer Agent and Registrar

**American Stock Transfer & Trust Company**  
6201 15th Avenue  
Brooklyn, NY 11219  
www.astfinancial.com

**NOTE:** References to our website are textual references only, and neither the website nor any information contained on it are included in this report, or incorporated by reference.

## Annual Meeting of Shareholders

The 2023 Annual meeting of Shareholders of Armstrong World Industries, Inc. will be held virtually on June 15, 2023, at 11:00 a.m. Eastern Time.

## Certifications

The certifications of our Chief Executive Officer and Chief Financial Officer, as required by Section 302 of the Sarbanes-Oxley Act of 2002, have been filed with the Securities and Exchange Commission as exhibits to our 2022 Annual Report on Form 10-K. In addition, in 2022 our Chief Executive Officer provided the required annual certification to the New York Stock Exchange.

## Forward-Looking Statements

Certain information in this report and in our other public documents and comments contain forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. Those statements provide our future expectations or forecasts and can be identified by our use of words such as "anticipate," "estimate," "expect," "project," "intend," "plan," "believe," "outlook," and other words or phrases of similar meaning in connection with any discussion of future operating or financial performance. Forward-looking statements, by their nature, address matters that are uncertain and involve risks because they relate to events and depend on circumstances that may or may not occur in the future. As a result, our actual results may differ materially from our expected results and from those expressed in our forward-looking statements. A more detailed discussion of the risks and uncertainties that could cause our actual results to differ materially from those projected, anticipated or implied is included in the "Risk Factors" and "Management's Discussion and Analysis" sections of our recent reports on Forms 10-K and 10-Q filed with the U.S. Securities and Exchange Commission. Forward-looking statements speak only as of the date they are made. We undertake no obligation to update any forward-looking statements beyond what is required under applicable securities law.

In addition, we have reported non-Generally Accepted Accounting Principles ("GAAP") financial measures within the meaning of SEC Regulation G. A reconciliation of the differences between these measures with the most directly comparable financial measures calculated in accordance with GAAP are included below and are available on the Investor Relations page of our website at [www.armstrongworldindustries.com](http://www.armstrongworldindustries.com).

## Adjusted Diluted EPS Reconciliation

	2018	2019	2020	2021	2022
<b>Net earnings (loss)</b>	<b>\$186</b>	<b>\$215</b>	<b>(\$99)</b>	<b>\$183</b>	<b>\$203</b>
Less: Net (loss) earnings from discontinued operations	(4)	(28)	(15)	(2)	3
<b>Earnings (loss) from continuing operations, Reported</b>	<b>\$190</b>	<b>\$242</b>	<b>(\$84)</b>	<b>\$185</b>	<b>\$200</b>
Add/(Less): Income tax expense (benefit), reported	53	57	(43)	57	58
<b>Earnings (loss) from continuing operations before income taxes, Reported</b>	<b>\$243</b>	<b>\$299</b>	<b>(\$127)</b>	<b>\$243</b>	<b>\$258</b>
(Less)/Add: RIP (credit) expense <sup>1</sup>	(26)	(8)	368	-	(1)
(Less)/Add: environmental (recoveries) expenses	(1)	1	(6)	-	-
Add: Cost reduction initiatives	22	-	-	-	-
Add: Net proforma international allocations <sup>2</sup>	6	-	-	-	-
Add: Litigation expense	7	20	-	-	-
Add: Non-cash hedge expense	5	-	-	-	-
Add: WAVE pension settlement	-	1	-	-	-
Add: WAVE FSA <sup>3</sup>	-	4	-	-	-
(Less): AWI portion of WAVE's (gain) loss on sale of international	-	(21)	-	-	-
(Less): Gain on sale of China facility	-	-	(21)	-	-
Add: Accelerated depreciation from St. Helen's facility	-	-	3	-	-
Add: Charitable contribution – AWI Foundation <sup>4</sup>	-	-	10	-	-
Add: Acquisition-related impacts <sup>5</sup>	-	-	3	10	19
Add: Acquisition-related amortization <sup>6</sup>	-	-	7	21	8
<b>Adjusted earnings from continuing operations before income taxes</b>	<b>\$255</b>	<b>\$297</b>	<b>\$236</b>	<b>\$274</b>	<b>\$283</b>
(Less): Adjusted income tax expense <sup>7</sup>	(64)	(61)	(56)	(65)	(63)
<b>Adjusted net income from continuing operations</b>	<b>\$191</b>	<b>\$237</b>	<b>\$180</b>	<b>\$209</b>	<b>\$220</b>
Diluted shares outstanding, as Reported <sup>8</sup>	52.1	49.5	48.2	47.9	46.4
Tax Rate <sup>9</sup>	25%	20%	24%	24%	22%
<b>Per Diluted Share</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>
<b>As Reported</b>	<b>\$3.63</b>	<b>\$4.88</b>	<b>(\$1.76)</b>	<b>\$3.86</b>	<b>\$4.30</b>
<b>Adjusted</b>	<b>\$3.66</b>	<b>\$4.78</b>	<b>\$3.74</b>	<b>\$4.36</b>	<b>\$4.74</b>

<sup>1</sup> U.S. Retirement Income Plan ("RIP") (credit) expense represents the entire actuarial net periodic pension (credit) expense recorded as a component of earnings from continuing operations. For all periods presented, we were not required to and did not make cash contributions to our RIP.

<sup>2</sup> Includes adjustments to corporate costs and geographic allocations of corporate support functions due to the sale of our non-Americas international businesses.

<sup>3</sup> WAVE Fresh Start Accounting asset impairment charge due to sale of our non-Americas international businesses.

<sup>4</sup> Donation to the AWI Foundation.

<sup>5</sup> Represents the impact of acquisition-related adjustments for the fair value of acquired inventory and deferred revenue, changes in fair value of contingent consideration and deferred compensation & restricted stock expenses.

<sup>6</sup> Represents the intangible amortization related to acquired entities, including customer relationships, developed technology, software, trademarks and brand names, non-compete agreements and other intangibles.

<sup>7</sup> Adjusted income tax expense is calculated using the tax rate multiplied by the adjusted earnings from continuing operations before income taxes.

<sup>8</sup> 2020 Dilutive shares outstanding include anti-dilutive common stock equivalents which are excluded from U.S. GAAP.

<sup>9</sup> 2018 reflects an adjusted tax rate of 25%. All other years presented reflect the effective tax rate as reported.

## Adjusted Free Cash Flow Reconciliation

	2018	2019	2020	2021	2022
<b>Net cash provided by operating activities</b>	<b>\$203</b>	<b>\$183</b>	<b>\$219</b>	<b>\$187</b>	<b>\$182</b>
<b>Net cash provided by (used for) investing activities</b>	<b>\$310</b>	<b>(\$89)</b>	<b>(\$141)</b>	<b>(\$14)</b>	<b>\$28</b>
<b>Net cash provided by operating and investing activities</b>	<b>\$513</b>	<b>\$94</b>	<b>\$78</b>	<b>\$173</b>	<b>\$211</b>
Add: Acquisitions, net	22	56	165	1	3
(Less)/Add: (Proceeds) payments related to sale of international, net <sup>1</sup>	(272)	66	(20)	12	-
(Less)/Add: Net environmental (recoveries) expenses	(27)	5	(12)	(1)	1
Add: Litigation, net	-	23	-	-	-
Add: Net payments to WAVE for portion of proceeds from sale of international business	-	-	13	-	-
(Less): Proceeds from sale of idled China plant facility	-	-	(22)	-	-
Add: Charitable contribution - AWI Foundation <sup>2</sup>	-	-	10	-	-
Add: Arktura deferred compensation <sup>3</sup>	-	-	-	5	5
Add: Contingent consideration in excess of acquisition-date fair value <sup>4</sup>	-	-	-	-	2
<b>Adjusted Free Cash Flow</b>	<b>\$236</b>	<b>\$244</b>	<b>\$212</b>	<b>\$190</b>	<b>\$221</b>

<sup>1</sup> Includes related income tax payments for 2020.

<sup>2</sup> Donation to the AWI Foundation.

<sup>3</sup> Contingent compensation payments related to the acquisition.

<sup>4</sup> Contingent compensation payments related to 2020 acquisitions recorded as a component of net cash provided by operating activities.

## Adjusted EBITDA Reconciliation

	2018	2019	2020	2021	2022
<b>Net earnings (loss)</b>	<b>\$186</b>	<b>\$215</b>	<b>(\$99)</b>	<b>\$183</b>	<b>\$203</b>
Less: Net (loss) earnings from discontinued operations	(4)	(28)	(15)	(2)	3
<b>Earnings (loss) from continuing operations, Reported</b>	<b>\$190</b>	<b>\$242</b>	<b>(\$84)</b>	<b>\$185</b>	<b>\$200</b>
Add: Income tax expense (benefit), as reported	53	57	(43)	57	58
<b>Earnings (loss) from continuing operations before tax, Reported</b>	<b>\$243</b>	<b>\$299</b>	<b>(\$127)</b>	<b>\$243</b>	<b>\$258</b>
Add: Interest/other income and expense, net	7	18	382	17	21
<b>Operating Income, Reported</b>	<b>\$249</b>	<b>\$317</b>	<b>\$255</b>	<b>\$260</b>	<b>\$279</b>
Add: RIP expense <sup>1</sup>	6	5	6	5	4
Add: Cost reduction initiatives	8	-	-	-	-
Add: Net proforma international allocations <sup>2</sup>	6	-	-	-	-
(Less)/Add: Net environmental (recoveries) expenses	(1)	1	(6)	-	-
Add: Litigation expense	7	20	-	-	-
Add: WAVE pension settlement	-	1	-	-	-
Add: WAVE FSA <sup>3</sup>	-	4	-	-	-
(Less): AWI portion of WAVE's (gain) on sale of international	-	(21)	-	-	-
Add: Charitable contribution – AWI Foundation <sup>4</sup>	-	-	10	-	-
(Less): (Gain) on sale of idled China facility	-	-	(21)	-	-
Add: Acquisition-related impacts <sup>5</sup>	-	-	3	10	19
<b>Adjusted Operating Income</b>	<b>\$275</b>	<b>\$328</b>	<b>\$246</b>	<b>\$275</b>	<b>\$301</b>
Add: Depreciation and amortization	78	75	84	97	84
<b>Adjusted EBITDA</b>	<b>\$353</b>	<b>\$403</b>	<b>\$330</b>	<b>\$372</b>	<b>\$385</b>

<sup>1</sup> RIP expense represents only the plan service cost that is recorded within Operating Income. For all periods presented, we were not required to and did not make cash contributions to our RIP.

<sup>2</sup> Includes adjustments to corporate costs and geographic allocations of corporate support functions due to the sale of our non-Americas International businesses.

<sup>3</sup> WAVE Fresh Start Accounting asset impairment charge due to sale of our non-Americas international businesses.

<sup>4</sup> Donation to the AWI Foundation.

<sup>5</sup> Represents the impact of acquisition-related adjustments for the fair value of acquired inventory and deferred revenue, changes in fair value of contingent consideration and deferred compensation and restricted stock expenses.



SoundScapes® Shapes Acoustical Clouds, SoundScapes® Blades



Top: Calla® Shapes for DesignFlex® Panels, Axiom® Classic Trim and Axiom Curved Molding/Column Rings, Suprafine® 9/16" Exposed Tee System with integrated Price® diffusers, and T-Bar LED® lighting by JLC-Tech

Bottom: Custom WoodWorks® Grille ceiling panels with Backlight™ integrated lighting fixtures

## Our Products

We are a leading producer of ceilings and specialty wall solutions for use in the construction and renovation of commercial buildings. Mineral Fiber ceiling tiles are our core product offering. We manufacture these tiles at four plants in the United States. In addition to recycled fibers, including recycled ceiling tiles and paper, we use mineral wool that we manufacture from converted slag, a by-product of steel production, as well as perlite, fiberglass, starch and various coatings in our ceiling tile products. Through our constant focus on innovation and product development, we have continued to enhance and expand our core products.

Through our Architectural Specialties segment, we manufacture and source a broad portfolio of specialty ceiling, wall, and column products that complement our core offerings to provide integrated solutions. These products use a variety of materials including wood, metal, and felt, as well as special coatings and manufacturing techniques to bring the visions of architects and designers to life. We provide both highly customized solutions as well as standard products with short lead times to meet the needs of a broad range of construction projects.

Through our joint venture with Worthington Industries called Worthington Armstrong Venture ("WAVE"), we manufacture ceiling suspension systems that are sold through our sales and distribution channels.

Since 2016, we have built a solid foundation for profitable growth in the Americas as the leading manufacturer and innovator of ceiling and wall solutions.



Experience, Above All™

# Armstrong®

World Industries

**Armstrong World Industries, Inc.**

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Lancaster, PA 17603

**Additional information about Armstrong is  
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Flap: WoodWorks® ACGI Custom Capabilities