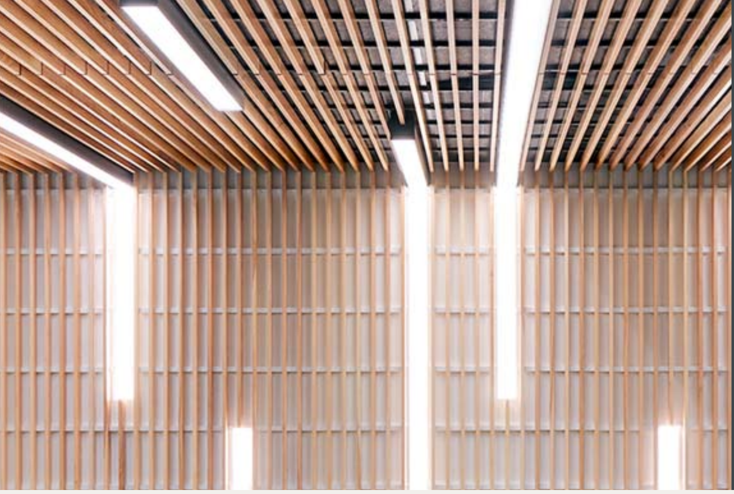


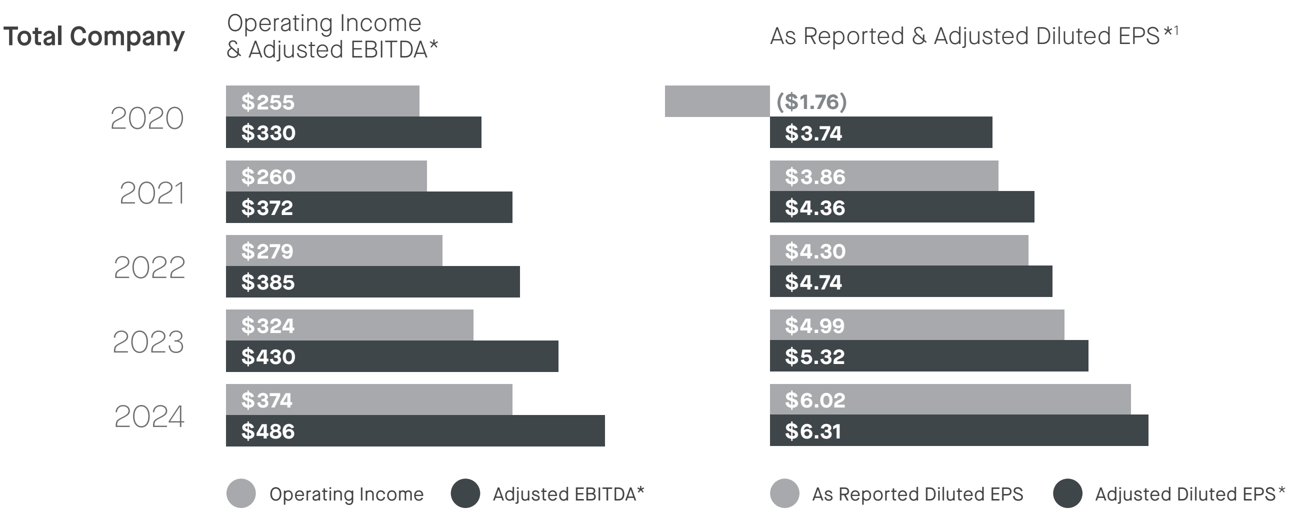
Armstrong®
World Industries

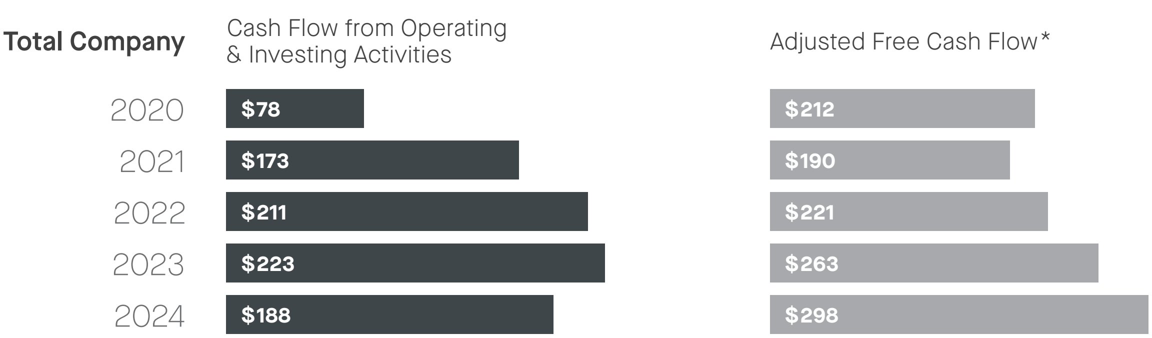
2024 Annual Report

Experience, Above All™

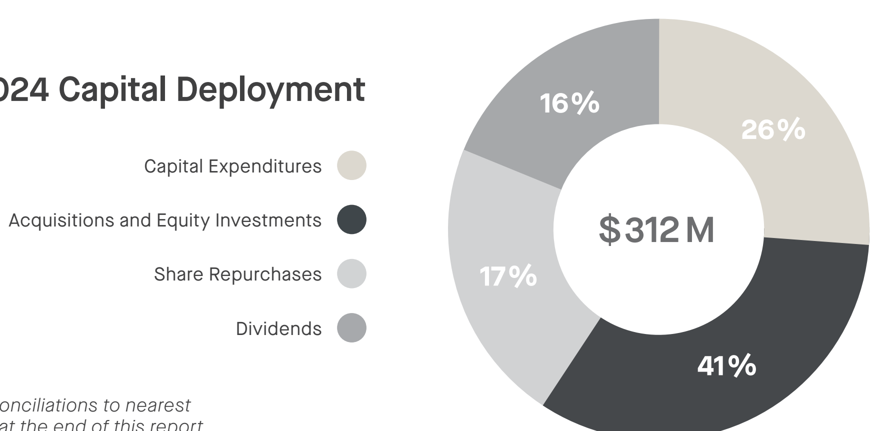
Financial Score Card

Dollars in millions except per share





2024 Capital Deployment



* *Non-GAAP Measure. Reconciliations to nearest GAAP measure provided at the end of this report. EBITDA: Earnings before interest, taxes, depreciation and amortization. EPS: Earnings per share.*

[1] *Represents AWI on a continuing operations basis.*

Dear Fellow Shareholders,

Our company delivered another year of record-setting results in 2024 as we continued to successfully navigate muted market conditions. Our financial results reflect the resilience of our business model built upon our attractive industry position, diverse and balanced set of end-markets and attractive growth initiatives. These attributes support Armstrong's ability to deliver consistent revenue and earnings growth throughout economic cycles. Importantly, 2024 marks the fourth consecutive year we have generated year-over-year growth in revenue, operating income, adjusted EBITDA* and diluted net earnings per share.

Frost School of Music; WoodWorks® ACGI Custom Wood Grille; Coral Gables, FL

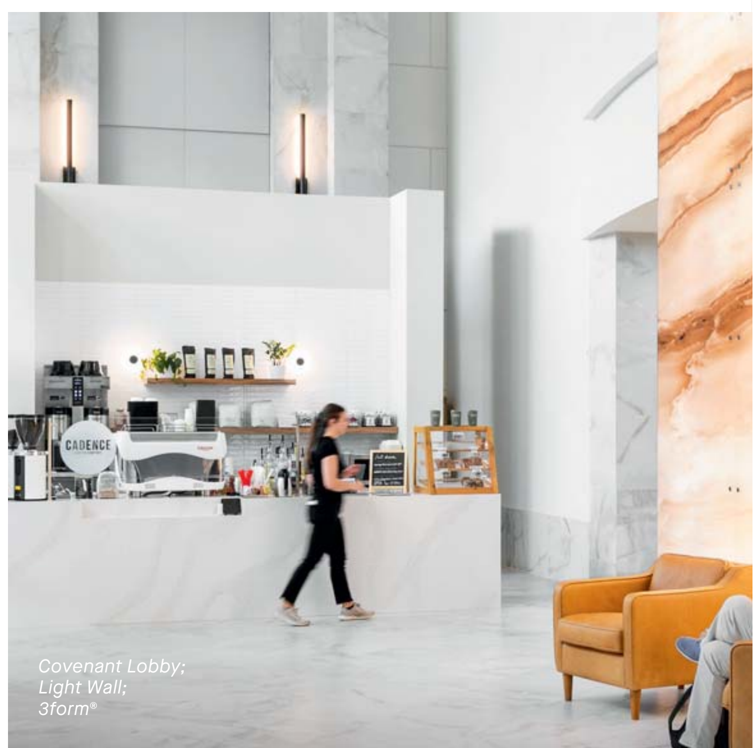
Highlights from 2024

- Record-setting total company revenue of $1.4 billion, up 12% from 2023, with operating income growth of 16% and adjusted EBITDA* growth of 13%
- Strong earnings performance across both our Mineral Fiber and Architectural Specialties business segments, each delivering double-digit growth rates for both operating income and adjusted EBITDA
- Two strategic acquisitions expanding Architectural Specialties capabilities and market opportunities with the addition of 3form, LLC (3form) and A. Zahner Company (Zahner), together adding approximately $70 million in 2024 revenue
- Expanded our Templok® Energy Saving Ceiling product portfolio
- Strong safety results, maintaining our best-in-class safety rates as we strive to achieve zero injuries for all employees
- Named one of Newsweek's America's Most Responsible Companies for the third consecutive year and one of America's Greenest Companies for the first time

Our 2024 results are a testament to the dedication of our 3,600 employees who relentlessly focus on executing our strategy. Their ongoing pursuit of productivity, excellence in innovation, and our best-in-class service levels have distinguished Armstrong for decades. I am also proud of our progress on key growth initiatives, including our digital investments, product innovation and strategic Architectural Specialties acquisitions. Success across these areas has fueled our growth and further strengthened our competitiveness.

Innovating Solutions for Energy Resilience & Decarbonization to Drive Future Growth

We continue to expand our portfolio of solutions that reduce energy use and carbon in commercial buildings. These solutions align with macro trends and market needs as building owners and operators work to better manage energy costs and attain their own sustainability goals. Tackling these challenges within the built environment is important given that buildings generate about 40% of total global carbon emissions. In the US, building operations represent about 75% of total electricity consumption, half of which is related to heating and cooling.



Covenant Lobby; Light Wall; 3form®

The Petersen Automotive Museum; Zahner® Engineered Profile Panel System

In 2024, we extended our Templok® Energy Saving Ceilings technology to additional product lines and ramped up our market education efforts. Templok uses phase change material technology that delivers up to 15% energy savings on heating and cooling costs*, along with thermal comfort, aesthetics and acoustical properties. This new energy saving attribute is attractive for new construction and also gives customers an economic value proposition for renovating their existing ceilings. Use of these products can also help address the increasing burden on US electrical grid systems due to industrial electrification, AI, cloud computing and data center construction.

Another innovative product launched in 2024 was our Ultima® Low-Embodied Carbon (LEC) mineral fiber ceiling tile that offers a 43% reduction in embodied carbon by using sustainably sourced, wood-generated biochar that sequesters carbon. This is the lowest embodied carbon mineral fiber ceiling product currently in the market, and when coupled with our Templok products, we're able to provide customers with a comprehensive solution to decrease the overall carbon footprint of commercial buildings while reducing energy costs.

Expanding our Architectural Specialties Capabilities & Addressable Market

We continue to expand our portfolio with more diverse materials and unique capabilities that enable us to sell more products into more spaces. These acquisitions included 3form, a leader in the manufacture of translucent materials with unique design capabilities. Their products use color, texture and light to elevate the design of a space and give architects and designers unique options to expand functionality while also bringing more natural light to interior spaces. These products are a tremendous complement to our existing interior architectural specialties products, and we've already seen the benefits to overall AWI sales through the synergies we're developing across our sales teams.

Our second acquisition in 2024 builds on the clear competitive advantage we developed over the past decade in interior architectural metal design and manufacturing through both acquisition and internal investment. Now, we are taking this industry leadership position to building exteriors. The addition of Zahner—a renowned expert in large-scale, complex exterior architectural metal applications—further expands our reach into this adjacent, highly-specifiable market category, building on the capabilities of BOK Modern, LLC that we acquired in 2023.

We believe metal exterior applications are a natural extension within the Architectural Specialties segment with high growth potential. We estimate the addition of this adjacency adds another $1 billion to the addressable market for our Architectural Specialties segment, bringing its total addressable market to more than $2.5 billion. We expect Zahner to accelerate our growth in exterior architectural metal applications due to their deep expertise in design, engineering and fabrication of complex, highly crafted exterior architectural metal projects and their extensive relationships with leading architects and designers. We're excited to apply our growth model to this market.

Digital Tools Driving Demand & Differentiation

Our digital growth initiatives continued to deliver volume and AUV benefits in 2024, helping to offset soft market demand and drive revenue growth. Our digital selling platform, Kanopi™ by Armstrong, helps us access the portion of the 39 billion square feet of installed mineral fiber ceilings in North America where the owner or occupant has limited knowledge of ceiling solutions, and as a result, has delayed ceiling renovations. Kanopi, with its easy-to-use, engaging platform and broad product selection, continued to deliver ongoing year-over-year volume growth and was EBITDA positive for the first time in 2024.

We are also pleased with the expansion and user adoption of our automated design platform ProjectWorks®. This digital design service is a unique capability within our industry and is accelerating the speed and efficiency of customer project collaboration. In addition to increasing efficiency for architects and designers, ProjectWorks also helps contractors, and ultimately the project owners, reduce costs by eliminating waste through optimization of the project design and bill of materials. We're increasing the breadth of products incorporated into ProjectWorks and the utilization rate of this service.

In closing, 2024 was another strong year for Armstrong as we advanced our strategy and strengthened our position, while delivering record-setting top- and bottom-line results. We continued investing in strategic initiatives and acquisitions that expand our future opportunities and increase our competitiveness. These efforts drove strong returns for shareholders through share price appreciation, dividends and share repurchases. With our resilient business model, attractive growth initiatives and dedicated employees, we look forward to our continued success in 2025.

Vic Grizzle
President and Chief Executive Officer

* *Measured energy savings in lab tests. Results may vary. See details on company website.*

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, 2024

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)

Pennsylvania	**23-0366390**
(State or other jurisdiction of incorporation or organization)	**(I.R.S. Employer Identification No.)**
2500 Columbia Avenue, Lancaster, Pennsylvania	**17603**
(Address of principal executive offices)	**(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	☒	Accelerated filer	☐
Non-accelerated filer	☐	Smaller reporting company	☐
Emerging growth company	☐		

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

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

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 ($113.24 per share) on the New York Stock Exchange (trading symbol AWI) as of June 28, 2024 was approximately $4.9 billion. As of February 19, 2025, the number of shares outstanding of the registrant's Common Stock was 43,464,252 .

Documents Incorporated by Reference

Certain sections of Armstrong World Industries, Inc.'s definitive Proxy Statement for use in connection with its 2025 annual meeting of shareholders, to be filed no later than April 30, 2025 (120 days after the last day of our 2024 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

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 herein 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 demand for our products, broader economic conditions and their effect on our operating results; our expectations regarding the payment of dividends and stock repurchases; and our ability to increase revenues, earnings and earnings before interest, taxes, depreciation and amortization. Words such as "anticipate," "estimate," "expect," "project," "intend," "plan," "believe," "outlook," "target," "predict," "may," "will," "would," "could," "should," "seek," 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 Enterprises, Inc.;
- cost savings and productivity initiatives;
- labor costs and relations;
- progress towards meeting objectives and related compliance for climate and other sustainability matters;

Risks Related to Our Strategy

- benefits from strategic initiatives, including investments in product innovation and digitalization;
- identification, completion and successful integration of strategic transactions;

Risks Related to Financial Matters

- liquidity needs and indebtedness;
- ability to make dividend payments and stock repurchases;
- unanticipated negative tax consequences;
- defined benefit plan obligations;

Risks Related to Legal and Regulatory Matters

- claims, litigation and regulatory actions;
- environmental liability exposure;
- effectiveness of intellectual property rights protection;
- operations in Canada and Latin America;

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;
- public health epidemics or pandemics; 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 an Americas leader in the design, innovation and manufacture of interior and exterior architectural applications including ceilings, specialty walls and exterior metal solutions. We manufacture and source products made of numerous materials, including mineral fiber, fiberglass, metal, felt, wood, resin, wood fiber and glass-reinforced-gypsum. We also manufacture ceiling suspension system (grid) products through a joint venture with Worthington Enterprises, Inc. 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 fiberglass ceiling systems. Our mineral fiber products offer various performance attributes such as acoustical control, rated fire protection, and energy efficiency, along with other health and sustainability features and aesthetic appeal. Ceiling products are primarily 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 system 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, Pennsylvania 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 – designs, produces and sources specialty ceilings, walls, and other interior and exterior architectural applications primarily for use in commercial settings. Products are available in numerous materials, such as metal, felt, wood, resin, wood fiber and glass-reinforced-gypsum in various colors, shapes and designs. These products offer a range of design options and performance attributes such as acoustical control, rated fire protection, light, aesthetic appeal, energy conservation and building performance. We sell standard, premium and customized products, a portion of which are sourced from third-party producers. Architectural Specialties products are sold primarily to resale distributors and direct customers, primarily ceiling systems contractors. This segment's revenues are primarily project driven, which can lead to more variability in sales patterns. 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, our Overcast Innovations LLC investment and related equity earnings/losses, 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.

Overview

Our business has been built on providing high-quality, innovative products through a highly effective service model as well as by maintaining strong brand awareness and trust. We are committed to delivering profitable revenue growth, strong cash flow generation 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 Total Acoustics® solutions and Sustain® family of products, and we have built a broad portfolio of architectural specialties products for ceilings, specialty walls and exterior metal architectural applications. Our growth initiatives continue to focus on market-driven innovation and digital tools to accelerate renovation and further differentiate our products and solutions, including our development of Templok® energy saving ceiling tiles. In addition, we continue to invest in expanding our Architectural Specialties market and reach capabilities into new adjacencies through both organic investment and acquisitions.

Acquisitions and Investments in Unconsolidated Affiliates

In December 2024, we acquired all the issued and outstanding stock of A. Zahner Company ("Zahner"), based in Kansas City, Missouri. Zahner is a designer and manufacturer of exterior metal architectural solutions. The operations, assets and liabilities of Zahner are included in our Architectural Specialties segment.

In April 2024, we acquired all the issued and outstanding membership interests in 3form, LLC ("3form"), based in Salt Lake City, Utah from Hunter Douglas, Inc. 3form is a designer and manufacturer of architectural resin and glass products used for specialty walls, partitions and ceilings. The operations, assets and liabilities of 3form are included in our Architectural Specialties segment.

In January 2024, we entered into a strategic partnership and equity investment in Overcast Innovations LLC ("Overcast") with McKinstry Essention, LLC whereby we contributed $5.5 million in exchange for a 19.5% ownership interest in Overcast, with future rights to increase our ownership interest. Overcast is a solutions company offering prefabricated ceiling cloud systems, modular grid platforms and engineering design services to reduce waste and inefficiencies in the built environment. Our investment and equity earnings in Overcast are included in our Unallocated Corporate segment.

In October 2023, we acquired a portion of the business and certain assets of Insolcorp, LLC ("Insolcorp"), based in Albemarle, North Carolina. Insolcorp develops, tests and manufactures energy saving products deployed in building and roofing installations. The acquired operations, assets and liabilities of Insolcorp are included in our Mineral Fiber segment.

In July 2023, we acquired all the issued and outstanding stock of BOK Modern, LLC ("BOK"), based in San Rafael, California. BOK is a designer of exterior metal architectural solutions. The operations, assets and liabilities of BOK are included in our Architectural Specialties segment.

In November 2022, we acquired the business of GC Products, Inc. ("GC Products"), based in Lincoln, California. GC Products is a designer and manufacturer of glass-reinforced-gypsum, glass-reinforced-cement, molded ceiling and specialty wall products. The operations, assets and liabilities of GC Products are included in our Architectural Specialties segment.

Markets

We primarily serve markets 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 ceiling products from other manufacturers, as well as drywall and a wide range of specialty ceiling and exterior metal 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, healthcare, transportation and retail. We closely monitor publicly available macroeconomic data and trends that provide insight into commercial construction market activity, including, but not limited to, gross domestic product ("GDP"), office vacancy rates, the Architecture Billings Index, new commercial construction starts, state and local government spending, corporate profits and retail sales. Our revenue from new construction can lag behind construction starts by as much as 24 months. 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, energy efficiency, 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 classify our renovation opportunities as major renovation projects, which tend to be larger in scope, or repair and remodel projects, which generally involve the replacement of old products with new products. In our Architectural Specialties segment, we estimate that a majority of our commercial construction 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. We also sell a small portion of our 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 product quality, broad product portfolio, design 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 with direct customers, which include sales to contractors, architects and designers who specify products.

In 2024, nearly 65% 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.

Gross sales to Foundation Building Materials, Inc. and GMS, Inc. totaled $735.6 million and individually exceeded 10% of our consolidated gross sales in 2024. Sales to these distributors are included in both our Mineral Fiber and Architectural Specialties segment net sales.

Working Capital

We primarily produce goods for inventory and sell on credit to our customers. Generally, we believe our distributors and home center customers 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), Rulon International, SAS International, and 9Wood.

Raw Materials

We purchase raw materials from numerous suppliers worldwide in the ordinary course of business. Our principal raw materials are fiberglass, perlite, recycled paper and starch. Other raw materials we purchase include clays, felt, pigment, resin, wood and wood fiber. We manufacture most of our mineral wool needs at one of our facilities. Finally, we use aluminum and steel in the production of metal products by us and by WAVE, our joint venture that manufactures ceiling and wall 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 and external metal products. A portion of our sourced products are from suppliers located outside of the U.S., primarily from Europe and the Pacific Rim. Sales of sourced products represented less than 10% of our total consolidated revenue in 2024.

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

Seasonality

Historically, 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 activity.

Patent and Intellectual Property Rights

Patent protection is important to our business. We hold a broad collection of intellectual property rights relating to certain aspects of our products and processes developed or perfected within AWI or obtained through acquisitions and licenses. This includes patents, trademarks, designs, copyrights, trade secrets and other forms of intellectual property rights in the U.S. and various foreign countries.

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, trademarks, designs, copyrights, trade secrets and licenses constitute a valuable asset of material importance to our business, we do not believe we are materially dependent upon any single one of these intellectual property rights.

Certain of our trademarks, including without limitation, , Armstrong®, 3form®, ACOUSTIBuilt®, Arktura®, BŌK Modern®, Calla®, Cirrus®, Cortega®, DESIGNFlex®, Dune™, Feltworks®, Infusions®, Kanopi™, Lyra®, MetalWorks™, Móz™, Optima®, ProjectWorks®, Soundscapes®, Sustain®, Tectum®, Templok®, Total Acoustics®, Turf®, Ultima®, WoodWorks® and Zahner®, 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 use the "Armstrong" trade name and logo. 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 and New Zealand. During 2024, AWI terminated the license with AHF Products and sold the flooring specific trademarks previously licensed to AHF Products. None of these transactions had or are expected to have any material impact on the integrity of the Armstrong trademark.

In connection with the sale of certain subsidiaries comprising our businesses and operations in Europe, the Middle East and Africa (including Russia) ("EMEA") and the Pacific Rim, including the corresponding businesses and operations conducted by WAVE (collectively, the "Sale"), to Knauf International GmbH ("Knauf") in 2019, 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 solutions. Our sustainability focus reflects our mission to make a positive 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: Healthy and Circular Products, Healthy Planet and Thriving People and Communities.

Our Healthy and Circular Products pillar broadly focuses on ensuring our products are free of chemicals of concern, reducing our products' water intensity and carbon 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. These efforts also include our mineral fiber ceilings recycling program, which aims to divert reclaimed ceiling tiles from landfills. 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 generate 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, is aligned with our growth strategy.

Our Healthy 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 achieving emissions reductions through operational efficiency and product design improvements and exploring renewable electricity options where we operate. Additionally, we are committed to complying with all environmental laws and regulations that are applicable to our operations.

Our Thriving People and Communities pillar broadly focuses 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, inclusive, talented and thriving workforce, and encouraging and protecting human rights.

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 sustainable buildings. 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 products with an increased focus on sustainability.

In 2024, we published our fourth Sustainability Report which measures our progress towards achieving our 2030 sustainability goals and provides insights into our sustainability efforts. 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 2024 Sustainability Report or the Company's website is not incorporated herein by reference.

Human Capital

Workforce Demographics. As of December 31, 2024 and 2023, we had approximately 3,600 and 3,100 full time and part time employees, respectively. During 2024, our total voluntary and involuntary turnover rates were approximately 7% and 4%, respectively, for non-production employees and 13% and 8%, respectively, for production employees.

As of December 31, 2024, approximately 52% of our approximately 1,700 production employees in the U.S. were represented by labor unions. Collective bargaining agreements covering approximately 180 employees at three U.S. plants will expire during 2025. 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.

Compensation, Benefits and Wellness. Employee compensation is based on defined job descriptions and position grades that are evaluated against external market data that we believe is competitive and fair. 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 recent years we added parental leave and adoption benefits for all employees and launched a wellness program to promote physical, mental and financial well-being. In addition, we offer on-site wellness screenings at our manufacturing facilities in partnership with our medical provider. Finally, we offer mental well-being support and nutrition and financial wellness education to all employees.

Diversity and Inclusion. We value diversity and inclusion within our organization, as we believe it is important to our success. This commitment is reflected in the Thriving People and Communities Pillar of our Sustainability program, which is led by our Vice President of Talent Sustainability and Talent Acquisition. As part of our commitment to diversity and inclusion, through our merit-based selection process, we strive to hire qualified candidates from a talent pool reflective of the communities in which we have operations. In addition, we are committed to engaging in events and outreach and providing employee resources to our entire workforce that support diversity and inclusion.

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. We engage in research and development activities with a focus on market-driven product innovation to maintain our competitive position and enable growth, as well as innovation in our manufacturing processes to increase productivity.

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 for environmental matters that we consider probable and for which a reasonable estimate of the probable liability could be made were $4.6 million and $0.5 million as of December 31, 2024 and 2023, respectively. 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 https://www.armstrongworldindustries.com. Information contained on our website is not incorporated into this document. Our annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, and all amendments to those reports and other information about us are available free of charge through this website. Documents filed with the SEC are available on our 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 https://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 a material 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 relationships 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 materially and 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. Future input cost volatility could occur because of our suppliers' exposure to tariffs or geopolitical events. 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 a material 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 materially and 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 Enterprises, Inc., is an important element in the success of this joint venture. In December 2023, Worthington Enterprises, Inc. (formerly known as Worthington Industries, Inc.) separated from Worthington Steel, Inc. into a separate, independent, publicly traded company (the "Worthington Separation"). Worthington Enterprises, Inc.'s investment in WAVE was not included in the assets and business transferred to Worthington Steel, Inc. If the Worthington Separation or any other change with respect to our partner adversely impacts our relationship, WAVE's performance could be materially and 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.

We continuously pursue productivity initiatives and periodically engage in cost-saving initiatives. Execution of these initiatives may result in interruptions in production and/or may result in lower-than-expected savings in our operating cost structure or may not improve our operating results.

We 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.

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 a material adverse effect on our financial condition, liquidity or results of operations.

We rely on our employees to manufacture and sell our products. Because most 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 180 employees at three U.S. plants will expire during 2025. 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, loss of productivity and reduced service levels to our customers.

Our success is also dependent upon attracting and retaining a qualified 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. The impact from our inability to attract and retain a sufficient number of employees could have a material adverse effect on our financial condition, liquidity or results of operations.

We are subject to certain regulatory, financial and other risks related to climate change, climate transition, and other sustainability matters. Should our efforts to address these risks fail to align with new regulations or stakeholder expectations, fail to achieve the anticipated benefits, or result in unanticipated costs, our corporate reputation, financial condition, liquidity or results of operations could be materially and adversely impacted.

Evolving and/or conflicting government, customer and societal views related to climate change, climate transition, responsible sourcing and supply chain transparency, resource stewardship, diversity, human rights, social responsibility and other sustainability matters and our efforts to manage and report on them, as well as accomplish our sustainability goals, present numerous operational, regulatory, reputational, financial, legal, and other risks, any of which could have a material adverse impact.

In May 2024, we published our annual Sustainability Report, which includes certain 2030 sustainability goals and describes our progress towards meeting those goals. We may not achieve the anticipated benefits we expect from these 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 sustainability goals.

Further, concerns related to climate change have resulted in domestic and foreign legislative or regulatory actions as well as changing customer preferences and policies, such as environmentally responsible building codes and standards. New legislation and regulations in local, state and federal jurisdictions in the U.S. and in the foreign countries in which we operate could impose restrictions, caps, taxes, or other controls on emissions of greenhouse gases, which could have a material adverse effect on our operations and financial results. While we have a comprehensive sustainability strategy, including, greenhouse gas reduction targets, transparent disclosures related to our sustainability impacts and product innovation to respond to these evolving codes, standards and customer preferences, there is no certainty we will be successful in our approach.

Overall, climate change, its effects, the impacts of government regulation, and consumer, investor and business preferences are inherently difficult to predict and could have a material adverse impact our business by increasing our energy costs, result in substantial, additional capital expenditures and operating costs in the form of taxes, emissions allowances, carbon offsets, 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 product innovation and digitalization.

We continue to evaluate and may pursue strategic initiatives involving the development or use of new or innovative products, solutions and tools, including those related to Templok® energy saving ceiling tiles, as well as the expansion of our ecommerce platform, Kanopi™, and our automated design service, ProjectWorks®. 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 execute these initiatives or if we are unable to achieve the investment cases or realize expected competitive advantages from the initiatives in a timely and efficient manner.

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 a material 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 seven 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, increasing or decreasing the scope, geographic diversity and complexity of our operations and markets, and expanding into new ceiling and wall adjacencies and exterior metal architectural applications, offering products with new attributes and/or offering installation of products. Strategic transactions could involve payment by us of a substantial amount of cash, assumption of liabilities and indemnification obligations, subjecting us to new 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

We require a significant amount of liquidity to fund our operations, and our indebtedness may have a material adverse effect on 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; and
- make it more difficult for us to satisfy our obligations with respect to our indebtedness.

Additionally, the agreements that govern our indebtedness include 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. 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 ensure that we will continue to 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.

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 may seek to incur additional indebtedness, which could exacerbate the risks detailed above. In addition, to the extent that our indebtedness bears interest at floating rates, our sensitivity to interest rate fluctuations will increase. Further, we cannot guarantee financial institutions’ capacity in the future to provide credit, or alternatively access to capital markets, which may limit our ability to obtain new debt financing or refinance existing debt obligations.

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

We cannot guarantee 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.

In July 2016, our Board of Directors approved a share repurchase program authorizing us to repurchase up to $150.0 million of our outstanding shares of common stock (the "Program"). Since inception of the Program, we have been authorized to repurchase up to an aggregate of $1,700.0 million of our outstanding shares of common stock through December 31, 2026. 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 us 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.

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

We are subject to the tax laws of the various jurisdictions in which we operate. The tax laws are complex, and the manner in which they apply to our operations, results and tax planning strategies is sometimes open to interpretation. Our income tax expense (benefit) and reported net earnings 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 materially and 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 materially and adversely affected by changes in the valuation of deferred tax assets and liabilities. We have substantial deferred tax assets related to state net operating losses ("NOLs"), which are available to offset future state taxable income. However, our ability to utilize the current carrying value of these 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 the NOLs.

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. defined benefit pension plans were overfunded by $62.7 million as of December 31, 2024. Our unfunded postretirement plan liabilities were $39.4 million as of December 31, 2024. 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 refinance or obtain additional indebtedness.

As a result of our acquisition of Zahner, we contribute to a multi-employer defined benefit pension plan ("Multi-Employer Plan") under the terms of collective bargaining agreements that cover its union-represented employees. Assets contributed to the Multi-Employer Plan may be used to provide benefits to employees of other participating employers. If a participating employer stops contributing to the Multi-Employer Plan, the unfunded obligations of the plan may be borne by the remaining participating employers. In the event we choose to stop participating in the Multi-Employer Plan, we may be required to pay a withdrawal liability based on the underfunded status of the plan. Because we believe the Multi-Employer Plan is adequately funded at this time, and we have no current intention of withdrawing from the Multi-Employer Plan, we have not recorded a liability associated with this plan on our Consolidated Balance Sheets.

Risks Related to Legal and Regulatory Matters

Potential regulatory actions, product and service claims, environmental claims and other litigation could be costly and have a material 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.

We may be subject to liability under, and may make substantial future expenditures to comply with, environmental laws and regulations, which could have a material 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, per- and polyfluoroalkyl substances ("PFAS"), 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.

Our intellectual property rights may be infringed, misappropriated, invalidated or otherwise circumvented, which could have a material adverse impact on our financial condition, liquidity or results of operations.

We rely on our proprietary intellectual property, including numerous patents, trademarks, designs, copyrights and trade secrets, 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, designs, copyrights, trade secrets and other intellectual property and rely on the laws of the U.S. and other countries. Despite our efforts, the steps we have taken to protect our intellectual property may be inadequate. Existing trade secret, patent, design, trademark and copyright laws offer only limited protection. Our patents could be invalidated or circumvented. In addition, others may develop substantially equivalent or superseding proprietary technology, or competitors may offer similar competing products that do not infringe on our intellectual property rights, thereby substantially reducing the value of our intellectual property rights. Litigation may be necessary to defend and enforce our intellectual property rights. Engaging in litigation may cause us to incur substantial costs and divert resources, which could harm our business regardless of the outcome. Despite our efforts to protect and maintain our intellectual property rights, both in the U.S. and abroad, we may be unsuccessful in some matters. 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. All of the above could have a material adverse effect on our financial condition, liquidity or results of operations.

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

A portion of our net sales are generated in Canada and Latin America. While these sales are minor in comparison to our total consolidated net sales, they are subject to currency exchange fluctuations, trade regulations, import duties, logistics costs, delays and other related risks. Our Canadian and Latin American operations are also subject to various tax rates, tariffs, 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 U.S., 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 have a material adverse effect our business outside the U.S. and our financial condition, liquidity or results of operations.

Risks Related to General Economic and Other Factors

Unstable market and economic conditions could have a material 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, tariffs, availability and cost of capital, consumer spending rates, energy availability, the effects of government spending programs and the impacts of geopolitical events. Volatility in financial markets and softness or 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 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 a material 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 GDP, financing availability, 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, healthcare, transportation 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 impact our profitability. 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 have a material adverse effect on our financial condition, liquidity or results of operations.

Our customers consider product performance attributes, product styling, customer service and price when deciding whether to purchase our products. Failure to meet shifting consumer preferences in our highly competitive markets, whether for product performance attributes, such as acoustics, energy efficiency, sustainability, health attributes, or styling preferences, or our inability to develop and offer new competitive performance features could have a material 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 have a material adverse effect on our price realization. Any of the above factors could have a material adverse impact on 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 net sales, operating margins and profitability.

A number of our customers, including distributors and contractors, have consolidated in recent years and consolidation could continue, further concentrating an increasing portion of our net sales within a smaller group of key customers. 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 financial condition, liquidity or results of operations.

We rely on operating and information systems that may experience a failure, a compromise of security, or a violation of data privacy laws or regulations, which could interrupt or damage our operations and have a material adverse effect on our financial condition, liquidity or results of 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, 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.

We, along with third parties, may use data from our information systems and publicly available sources with artificial intelligence ("AI") technologies and tools. The use of AI may increase risks of data exposure, including unauthorized access, misuse, or unintentional disclosure of sensitive information. The evolving and broader use of AI tools and technologies may also impact the effectiveness of our cybersecurity, regulatory compliance and intellectual property protection programs.

Our business is dependent upon third-party vendors and suppliers whose failure to perform adequately could have a material 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, including international suppliers. 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 financial condition, liquidity 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. Our international suppliers may be impacted by tariffs or other trade matters. 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 financial condition, liquidity or results of operations.

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

We primarily operate in the U.S., 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 U.S., Canada and Latin America. While our operations are primarily in the U.S., Canada and Latin America, we are exposed to downstream risks from global events. 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 impact:

- our manufacturing capability if one of our facilities is affected by such an event;
- demand from our customers through changes in construction activity in the markets in which we operate;
- availability or increased costs of manufacturing inputs or sourced products from our vendors and suppliers; and
- our 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 financial condition, liquidity or results of operations.

Public health epidemics or pandemics could have a material adverse effect on our financial condition, liquidity or results of operations.

Public health epidemics or pandemics may impact our employees, operations, customers, suppliers and financial results. The extent of the impact will depend on numerous evolving factors that we may not be able to accurately predict, including: the duration and scope of an epidemic or pandemic; government actions taken in response to an epidemic or pandemic, including required shutdowns; the availability, acceptance, distribution and 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 1C. CYBERSECURITY

Our use of information systems for collecting, using, transmitting and storing data is a vital aspect of our business operations. Information systems are inherently vulnerable to a range of cybersecurity threats that could potentially have a material impact on our strategy, financial condition, liquidity or results of operations.

Cybersecurity Risk Management and Strategy. The Company actively maintains an enterprise risk management program. Management's role is to identify, mitigate, guide and review the efforts of our business units, consider whether the residual risks are acceptable, and approve plans to deal with serious risks. Cybersecurity is a key risk management category within our enterprise risk management program.

The Vice President and Chief Information Officer ("CIO"), who also serves as a member of the Company's enterprise risk council, works closely with key business leaders and functions to develop and enhance the Company's cybersecurity strategy. Our cybersecurity program is designed to safeguard against an evolving threat landscape through effective prevention, detection, response and recovery processes. Our cybersecurity risk management processes include frequent assessment of our top cyber risks and mitigations.

Our cybersecurity risk program is a comprehensive framework designed to safeguard our organization and stakeholders from evolving threats. Central to this approach is our commitment to threat and vulnerability management, where we proactively identify, prioritize, and address potential cybersecurity gaps to strengthen our overall security posture. We emphasize identity and access management by implementing access controls and robust authentication methods to protect user identities and secure information technology systems. Data protection and privacy is in place to ensure sensitive information is protected from exfiltration. Our cybersecurity defenses leverage systems and technologies, including firewalls, network access, endpoint protection, privileged access management, user behavior analytics, multi-factor authentication, intrusion detection systems and continuous monitoring. The purpose of these systems and technologies is to stay ahead of potential threats. To prepare for and respond to potential cybersecurity events, we conduct regular incident response exercises, ensuring our readiness and resilience. Additionally, we invest in employee training and awareness programs to promote a culture of security mindfulness and reduce risks associated with human error. Recognizing the importance of third-party relationships, we maintain a vendor risk management program that includes monitoring the cybersecurity practices of our vendors, and if applicable, performing user access reviews and evaluating System and Organization Controls reports at both inception and on an ongoing basis. Together, these efforts reflect our dedication to building a secure and compliant environment that protects our operations, data, and the trust of our stakeholders.

Our program incorporates an Incident Response Plan to guide the evaluation, response, and escalation of cybersecurity incidents. This plan is overseen by our CIO and executed by a cross-functional Cybersecurity Incident Response Team. The incident response plan establishes clear protocols for incident identification, impact assessment, containment and resolution, with defined escalation paths based on incident severity. Cybersecurity incidents above a defined threshold of criticality are evaluated for materiality to determine reporting and disclosure requirements. To enhance our response capabilities, we conduct periodic assessments, including third-party reviews, and simulate incidents through regular tabletop exercises.

Our cybersecurity program's effectiveness is periodically evaluated against established quantifiable goals and other external benchmarks, including the National Institute of Standards and Technology security framework. This evaluation is carried out through internal and external risk assessments and compliance audits. We regularly engage third parties to help conduct these evaluations, assessments and audits, advise us on the effectiveness of our cybersecurity processes and assist the Company in remediating any identified vulnerabilities.

We do not believe that risks from cybersecurity threats, individually or in the aggregate, including any previous cybersecurity incidents, have materially affected, or are reasonably likely to materially affect, our strategy, financial condition, liquidity or results of operations. For additional information on how cybersecurity risk may affect our business, refer to Item 1A. Risk Factors of this Form 10-K under the heading "We rely on operating and information systems that may experience a failure, a compromise of security, or a violation of data privacy laws or regulations, which could interrupt or damage our operations and have a material adverse effect on our financial condition, liquidity or results of operations."

Governance. Our Board of Directors has responsibility for oversight of management's cybersecurity risk program and receives regular updates from our CIO. These updates, provided on a semi-annual basis, cover a range of topics, including the performance of our cybersecurity program against established goals and external standards, insights into the evolving cybersecurity landscape, current events and recent cybersecurity threats, and progress in enhancing the Company's cybersecurity posture. Pursuant to its charter, the Audit Committee of our Board of Directors is responsible for reviewing management's cybersecurity incident reporting process, methodology and tools. In addition, the Audit Committee is responsible for reviewing management's materiality assessments of cybersecurity incidents identified as significant by management.

Our CIO holds an advanced degree in Information Technology with over 20 years of experience, including senior leadership roles in technology at various companies. The CIO oversees a cybersecurity team, comprised of internal and external subject matter experts who work collaboratively to achieve our cybersecurity objectives. In addition, our CIO leads the Information Security Steering Committee, a group comprised of key information technology employees and business leaders, including our Senior Vice President, Chief Financial Officer and Senior Vice President, General Counsel and Chief Compliance Officer. This committee meets regularly to review and discuss the Company's cybersecurity strategies and developments, ensuring a comprehensive approach to managing cybersecurity risk.

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, 2024, we operated 20 manufacturing plants, including 18 plants located within the U.S. and two plants in Canada.

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

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

Operating Segment	Number of Plants	Location of Principal Facilities
Mineral Fiber	5	U.S. (Florida, Georgia, Ohio, Pennsylvania and West Virginia)
Architectural Specialties	15	U.S. (California (3), Illinois (2), Missouri (2), Ohio (3), North Carolina, Texas, Utah), and Canada (Quebec and Ontario)

Sales and administrative offices are leased and/or owned, and leased facilities are used 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" subheading under "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 19, 2025, there were 159 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 $1.148 per share in 2024. On February 19, 2025, our Board of Directors declared a dividend of $0.308 per common share outstanding. The dividend will be paid on March 20, 2025, to shareholders of record as of the close of business on March 6, 2025. 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

Period	Total Number of Shares Purchased [1]	Average Price Paid per Share	Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs	Maximum Approximate Value of Shares that may yet be Purchased under the Plans or Programs
October 1 – 31, 2024	112,929	$ 136.73	109,694	$ 661,795,002
November 1 – 30, 2024	56	$ 140.59	-	$ 661,795,002
December 1 – 31, 2024	-	$ -	-	$ 661,795,002
Total	112,985		109,694	

(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 a share repurchase program authorizing us to repurchase up to $150.0 million of our outstanding shares of common stock (the "Program"). Since inception of the Program, we have been authorized to repurchase up to an aggregate of $1,700.0 million of our outstanding shares of common stock through December 31, 2026. We had $661.8 million remaining under the Board's repurchase authorization as of December 31, 2024.

Repurchases of our common stock 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 2024, we repurchased 0.5 million shares under the Program for a total cost of $55.0 million, excluding commissions and taxes, or an average price of $119.03 per share. Since inception through December 31, 2024, we have repurchased 14.6 million shares under the Program for a total cost of $1,038.2 million, excluding commissions and taxes, or an average price of $70.89 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 an Americas leader in the design, innovation and manufacture of interior and exterior architectural applications including ceilings, specialty walls and exterior metal solutions. Our products primarily include mineral fiber, fiberglass, metal, felt, wood, resin, wood fiber and glass-reinforced-gypsum. We also manufacture ceiling suspension system (grid) products through a joint venture with Worthington Enterprises, Inc. called Worthington Armstrong Venture (“WAVE”).

Acquisitions

In December 2024, we acquired all the issued and outstanding stock of A. Zahner Company (“Zahner”), based in Kansas City, Missouri. Zahner is a designer and manufacturer of exterior metal architectural solutions. The operations, assets and liabilities of Zahner are included in our Architectural Specialties segment.

In April 2024, we acquired all the issued and outstanding membership interests in 3form, LLC (“3form”), based in Salt Lake City, Utah from Hunter Douglas, Inc. 3form is a designer and manufacturer of architectural resin and glass products used for specialty walls, partitions and ceilings. The operations, assets and liabilities of 3form are included in our Architectural Specialties segment.

In January 2024, we entered into a strategic partnership and equity investment in Overcast Innovations LLC (“Overcast”) with McKinstry Essention, LLC whereby we contributed $5.5 million in exchange for a 19.5% ownership interest in Overcast, with future rights to increase our ownership interest. Overcast is a solutions company offering prefabricated ceiling cloud systems, modular grid platforms and engineering design services to reduce waste and inefficiencies in the built environment. Our investment and equity earnings in Overcast are included in our Unallocated Corporate segment.

In October 2023, we acquired a portion of the business and certain assets of Insolcorp, LLC (“Insolcorp”), based in Albemarle, North Carolina. Insolcorp develops, tests and manufactures energy saving products deployed in building and roofing installations. The acquired operations, assets and liabilities of Insolcorp are included in our Mineral Fiber segment.

In July 2023, we acquired all the issued and outstanding stock of BOK Modern, LLC (“BOK”), based in San Rafael, California. BOK is a designer of exterior metal architectural solutions. The operations, assets and liabilities of BOK are included in our Architectural Specialties segment.

In November 2022, we acquired the business of GC Products, Inc. (“GC Products”), based in Lincoln, California. GC Products is a designer and manufacturer of glass-reinforced-gypsum, glass-reinforced-cement, molded ceiling and specialty wall products. The operations, assets and liabilities of GC Products are included in our Architectural Specialties segment.

Manufacturing Plants

As of December 31, 2024, we operated 20 manufacturing plants, including 18 plants located within the U.S. and two plants in Canada.

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 fiberglass ceiling systems. Our mineral fiber products offer various performance attributes such as acoustical control, rated fire protection, and energy efficiency, along with other health and sustainability features and aesthetic appeal. Ceiling products are primarily 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 system 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, Pennsylvania 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 – designs, produces and sources specialty ceilings, walls, and other interior and exterior architectural applications primarily for use in commercial settings. Products are available in numerous materials, such as metal, felt, wood, resin, wood fiber and glass-reinforced-gypsum in various colors, shapes and designs. These products offer a range of design options and performance attributes such as acoustical control, rated fire protection, light, aesthetic appeal, energy conservation and building performance. We sell standard, premium and customized products, a portion of which are sourced from third-party producers. Architectural Specialties products are sold primarily to resale distributors and direct customers, primarily ceiling systems contractors. This segment’s revenues are primarily project driven, which can lead to more variability in sales patterns. 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, our Overcast investment and related equity earnings/losses, 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.

Factors Affecting Revenues

For information on our segments’ 2024 net sales by geography and disaggregated expenses, see Note 3 to the Consolidated Financial Statements included in this Form 10-K. For information on our segments’ 2024 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 markets of the Americas. We closely monitor publicly available macroeconomic data and 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 tariffs and geopolitical events, including but not limited to, conflicts in Ukraine and the Middle East; none of which had a material direct impact on our financial condition, liquidity or results of operations during 2024 or 2023.

Several factors and trends within our markets affected our business performance during 2024 compared to 2023. During 2024, increased sales volumes contributed $89 million to the increase in net sales versus the prior year, due primarily to our December 2024 acquisition of 3form, Zahner and BOK, which collectively contributed $84 million and $11 million of net sales in 2024 and 2023, respectively. Net sales volumes also benefitted from growth in custom project revenues within our Architectural Specialties segment.

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.

Favorable AUV contributed approximately $62 million to our total consolidated net sales for the year ended December 31, 2024 compared to the same period in 2023. Our Architectural Specialties segment revenues are primarily generated by individual contracts that include a mix of products, both manufactured by us and sourced from third parties, that varies by project. As such, we do not track AUV performance for this segment but rather attribute all changes in net sales to volume, including gross to net sales adjustments.

During the first and third quarters of 2024, we implemented price increases on Mineral Fiber ceiling products. During the first and second quarters of 2024, WAVE implemented price increases on grid products. In the fourth quarter of 2024, we announced price increases on Mineral Fiber ceiling products and WAVE announced price increases on grid products that became effective in the first quarter of 2025. We may implement future pricing actions based on numerous factors, namely the rate and pace of inflation and its impact on our business.

Seasonality. Historically, 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 projects.

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 clays, felt, pigment, resin, wood and wood fiber. We manufacture substantially all of our mineral wool at one of our manufacturing facilities. We use aluminum and steel in the production of metal building products by us and by WAVE. Finally, natural gas and packaging materials also represent significant input costs. Fluctuations in the prices of these inputs impact our financial results. In 2024, lower energy and freight costs were partially offset by higher raw material costs, resulting in a $6 million benefit to operating income compared to 2023.

Acquisition-Related Expenses and Losses

In connection with our acquisitions of Zahner, 3form, Insolcorp, BOK and Arktura LLC ("Arktura") acquired in December 2020, we recorded certain acquisition-related expenses and losses to operating income for the years ended December 31, 2024, 2023, and 2022, summarized as follows (dollar amounts in millions):

	2024	2023	2022	Affected Line Item in the Consolidated Statements of Earnings and Comprehensive Income
Inventory	$ 0.3	$ -	$ -	Cost of goods sold
Acquisition costs	1.8	-	-	SG&A expenses
Deferred cash and restricted stock expenses	-	10.7	7.9	SG&A expenses
Loss related to change in fair value of contingent consideration	1.6	0.1	11.0	Loss related to change in fair value of contingent consideration
Net negative impact to operating income	$ 3.7	$ 10.8	$ 18.9	

The inventory amounts above reflect the post-acquisition expenses associated with recording inventory at fair value as part of purchase accounting for the 3form acquisition. Acquisition costs above reflect certain contingent third-party professional fees incurred due to the Zahner and 3form acquisitions. Expenses related to the deferred cash and restricted stock awards were for Arktura's former owners and employees that were recorded over their respective service periods, as such payments were subject to the awardees' continued employment with AWI. The change in fair value of contingent consideration is related to our BOK and Insolcorp acquisitions and was remeasured quarterly during each acquisition's respective earn-out periods. See Note 19 to the Consolidated Financial Statements for further information.

Depreciation and amortization of fixed and intangible assets acquired have been excluded from the table above. See Note 5 to the Consolidated Financial Statements for further information.

RESULTS OF OPERATIONS

The following discussion includes year-to-year comparisons between 2024 and 2023. Discussions of year-to-year comparisons between 2023 and 2022 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, 2023. 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.

CONSOLIDATED RESULTS FROM CONTINUING OPERATIONS

(dollar amounts in millions)

	2024	2023	Change is Favorable
Total consolidated net sales	$ 1,445.7	$ 1,295.2	11.6%
Operating income	$ 374.3	$ 323.7	15.6%

Consolidated net sales for 2024 increased 11.6% due to higher sales volumes of $89 million and favorable AUV of $62 million.

Mineral Fiber net sales increased $54 million, while Architectural Specialties net sales increased $97 million. The increase in Mineral Fiber net sales was primarily driven by improved AUV, as a result of increased like-for-like pricing and favorable mix, partially offset by lower sales volumes. Architectural Specialties net sales improved primarily due to contributions from the acquisitions of Zahner, 3form and BOK, in addition to increased custom project net sales.

Cost of goods sold during 2024 was 59.8% of net sales, compared to 61.6% for 2023. The year-over-year decrease in cost of goods sold as a percentage of net sales was driven primarily by favorable AUV margin benefit, improved manufacturing productivity and lower input costs.

SG&A expenses in 2024 were $308.5 million, or 21.3% of net sales, compared to $262.5 million, or 20.3% of net sales, in 2023. The year-over-year increase in SG&A expenses was primarily driven by a $32 million increase related to the acquisitions of Zahner, 3form and BOK, an $8 million increase in selling expenses, primarily due to higher employee costs, a $7 million increase in incentive compensation and a $6 million decrease in company-owned officer life insurance gains related to deferred compensation plans. These increases were partially offset by a $9 million decrease in acquisition-related expenses.

In 2024, we recorded $1.6 million of remeasurement losses for changes in the fair value of contingent consideration related to the acquisitions of BOK and Insolcorp. In the same period in 2023, we recorded $0.1 million of remeasurement losses for changes in the fair value of contingent consideration related to the acquisition of BOK. See Note 19 to the Consolidated Financial Statements for further information.

Losses on sales of fixed assets, net were $0.6 million in 2024, which was comprised of a $5.2 million loss on sale for undeveloped land adjacent to our Corporate headquarters, partially offset by a $4.6 million gain on the sale of our idled Mineral Fiber plant in St. Helens, Oregon.

Equity earnings from unconsolidated subsidiaries were $103.4 million in 2024, compared to $89.3 million in 2023. In 2024, WAVE equity earnings were $104.3 million, while Overcast equity losses were $0.9 million. The increase in WAVE earnings was primarily driven by the benefits of favorable AUV, higher volumes and lower steel costs, partially offset by higher employee costs. See Note 11 to the Consolidated Financial Statements for further information.

Interest expense was $39.8 million in 2024 compared to $35.3 million in 2023. The increase in interest expense was primarily due to higher average effective interest rates, partially offset by lower average debt balances.

Other non-operating income, net was $12.6 million during 2024 compared to $9.9 million during 2023. Other non-operating income, net, is primarily comprised of the non-service cost components of pension and postretirement net periodic benefit costs and interest income. The increase in other non-operating income was primarily due to an increase in amortization of pension and postretirement credits.

Income tax expense was $82.2 million in 2024 compared to $74.5 million in 2023. The effective tax rate was 23.7% in 2024 compared to 25.0% in 2023. The effective tax rate for 2024 was lower compared to 2023 primarily due to the benefits recognized from a reduction in our valuation allowance for capital loss carryforwards, in addition to statute closures.

Total Other Comprehensive Loss ("OCL") was $5.5 million in 2024 compared to $4.6 million in 2023. The change in OCL was primarily driven by changes in pension and postretirement adjustments and foreign currency translation adjustments, partially offset by lower interest rate swap derivative losses in 2024 compared to 2023. Pension and postretirement adjustments represent the 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. Foreign currency translation adjustments during 2024 and 2023 were driven primarily by changes in the Canadian dollar. Derivative gain/loss represents the mark-to-market value adjustments of our derivative assets and liabilities, and the recognition of gains and losses previously deferred in accumulated OCI.

REPORTABLE SEGMENT RESULTS

Mineral Fiber

(dollar amounts in millions)

	2024	2023	Change is Favorable
Total segment net sales	$ 986.0	$ 932.4	5.7%
Operating income	$ 322.5	$ 285.7	12.9%

Mineral Fiber net sales increased $54 million due to $62 million of favorable AUV, partially offset by $8 million of lower sales volumes. The increase in AUV was driven by positive like-for-like pricing and favorable mix. The decrease in volumes for 2024 was driven primarily within our home center customer channel, most notably due to prior-year first quarter inventory level increases that did not repeat in the current-year period, partially offset by two additional shipping days in 2024 and the positive contribution from our growth initiatives compared to the prior-year period.

Mineral Fiber cost of goods sold during 2024 was $586 million, 59.5% of net sales, compared to $574 million, 61.6% for 2023. Gross profit increased $42 million, or 11.6%, compared to 2023. The year-over-year increase in gross profit was driven primarily by a $39 million benefit from favorable AUV benefit and an $8 million decrease in manufacturing costs due to improved manufacturing productivity and input costs, partially offset by a $5 million negative impact from lower sales volumes and a $3 million increase in depreciation and amortization expense.

Mineral Fiber SG&A expenses were $181 million, or 18.3% of net sales in 2024 compared to $162 million, or 17.4% of net sales for 2023. The year-over-year increase in SG&A expenses was primarily driven by a $6 million decrease in company-owned officer life insurance gains related to deferred compensation plans, a $5 million increase in incentive compensation, a $4 million increase in selling expense, partially due to higher employee costs, and a $2 million increase in depreciation and amortization expense.

Equity earnings from our WAVE joint venture were $104.3 million in 2024, compared to $89.3 million in 2023. The increase in WAVE earnings was primarily driven by the benefits of favorable AUV, higher volumes and lower steel costs, partially offset by higher employee costs.

Architectural Specialties
(dollar amounts in millions)

	2024	2023	Change is Favorable
Total segment net sales	$ 459.7	$ 362.8	26.7%
Operating income	$ 55.3	$ 40.9	35.2%

Architectural Specialties net sales increased $97 million, driven primarily by a $73 million increase from the acquisitions of Zahner, 3form and BOK, in addition to increased custom project net sales.

Architectural Specialties cost of goods sold during 2024 was $276 million, 60.1% of net sales, compared to $222 million, 61.3% for 2023. Gross profit increased $43 million, or 30.6%, compared to 2023. The year-over-year increase in gross profit was driven primarily by a $58 million benefit from increased sales, driven by the acquisitions of Zahner, 3form and BOK, in addition to the benefit from improved custom project margins and better operating leverage. These benefits were partially offset by an increase in manufacturing costs due to the acquisitions of Zahner, 3form and BOK, in addition to the impact of growth investments, primarily in the form of higher rent expense due to recent years' facilities expansions, and an increase in employee costs.

Architectural Specialties SG&A expenses were $127 million, or 27.6% of net sales in 2024 compared to $99 million, or 27.4% of net sales for 2023. The year-over-year increase in SG&A expenses was primarily driven by a $32 million increase related to the acquisitions of Zahner, 3form and BOK, as well as a $4 million increase in selling expenses, due to higher employee costs. These increases were partially offset by a $9 million decrease in acquisition-related costs.

Unallocated Corporate

Unallocated Corporate operating loss was $4 million in 2024 compared to $3 million in 2023. The increase in operating loss was primarily due to $0.9 million of Overcast equity losses in 2024.

FINANCIAL CONDITION AND LIQUIDITY

Cash Flow

Operating activities for 2024 provided $266.8 million of cash, compared to $233.5 million in 2023. The favorable change in cash from operating activities was driven by higher cash earnings and a favorable change in accounts payable and accrued expenses due to timing-related benefits, primarily from our Mineral Fiber segment, and the impact of higher incentive compensation accruals. These positive operating cash flow benefits were partially offset by an unfavorable change in accounts receivables, driven primarily by timing-related increase in receivables, primarily due to custom projects within our Architectural Specialties segment, and an increase in cash paid for income taxes.

Net cash used for investing activities was $79.3 million for 2024, compared to $10.4 million in 2023. The unfavorable change in cash used in investing activities in 2024 compared to 2023 was primarily due to $124.0 million of cash paid for the 3form and Zahner acquisitions, partially offset by proceeds received from the sales of our idled St. Helens manufacturing plant and undeveloped land adjacent to our corporate headquarters in 2024 and an increase in proceeds received from company-owned life insurance policies.

Net cash used for financing activities was $177.6 million in 2024, compared to $258.6 million in 2023. The favorable change in cash was primarily due to a decrease in repurchases of outstanding common stock and lower payments of acquisition-related contingent consideration.

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.

We have a $950.0 million variable rate senior credit facility, which 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. As of December 31, 2024, the revolving credit facility and Term Loan A were priced at 1.375% over the Secured Overnight Financing Rate ("SOFR"), plus a 10 basis point adjustment. The revolving credit facility and Term Loan A mature in December 2027. We also have a $25.0 million bi-lateral letter of credit facility.

As of December 31, 2024, total borrowings outstanding under our senior credit facility were $427.5 million under Term Loan A and $100.0 million under the revolving credit facility.

The senior 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 consolidated cash 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, 2024, we were in compliance with all covenants of the senior credit facility.

We use interest rate swaps to minimize the fluctuations in earnings caused by interest rate volatility associated with our senior credit facility.

The Term Loan A is currently priced on a variable interest rate basis. The following tables summarize our interest rate swaps, including forward interest rate swaps (dollar amounts in millions):

Coverage Period	Notional Amount		Risk Coverage	Trade Date
March 2021 to March 2025	$	100.0	USD-SOFR	November 28, 2018
November 2023 to December 2025	$	50.0	USD-SOFR	October 23, 2023
March 2024 to June 2026	$	50.0	USD-SOFR	March 25, 2024
November 2023 to December 2026	$	50.0	USD-SOFR	October 10, 2023
March 2024 to June 2027	$	50.0	USD-SOFR	March 27, 2024
November 2023 to November 2027	$	50.0	USD-SOFR	September 29, 2023
June 2024 to June 2028	$	50.0	USD-SOFR	June 26, 2024

Under the terms of the interest rate swap with a November 28, 2018 trade date above, we pay a fixed rate monthly and receive a floating rate based on SOFR, inclusive of a 0% floor. Under the terms of all remaining interest rate swaps above, we pay a fixed rate monthly and receive a floating rate based on SOFR. These swaps are designated as cash flow hedges against changes in SOFR for a portion of our variable rate debt.

We use 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 companies 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):

	December 31, 2024					
Financing Arrangements	**Limit**		**Used**		**Available**	
Bi-lateral facility	$	25.0	$	7.7	$	17.3
Revolving credit facility		150.0		-		150.0
Total	$	175.0	$	7.7	$	167.3

The table below reflects scheduled future payments of long-term debt, excluding $2.4 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):

	2025	2026	2027	2028	2029	Thereafter	Total
Long-term debt	$ 22.5	$ 22.5	$ 482.5	$ -	$ -	$ -	$ 527.5
Scheduled interest payments	31.0	29.3	26.3	-	-	-	86.6

As of December 31, 2024, we had $79.3 million of cash and cash equivalents, $63.9 million in the U.S. and $15.4 million in various foreign jurisdictions, primarily Canada. As of December 31, 2024, we also had $400 million of borrowing capacity 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 2025, we expect to spend approximately $90 million to $100 million on capital expenditures and approximately $54 million on dividends.

In July 2016, our Board of Directors approved a share repurchase program authorizing us to repurchase up to $150.0 million of our outstanding shares of common stock (the "Program"). Since inception of the Program, we have been authorized to repurchase up to an aggregate of $1,700.0 million of our outstanding shares of common stock through December 31, 2026. We had $661.8 million remaining under the Board's repurchase authorization as of December 31, 2024.

Repurchases of our common stock 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, 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 and have discussed these 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, 2024 and 2023, we assumed discount rates of 5.68% and 5.01%, respectively, for our U.S. defined benefit pension plans. As of December 31, 2024 and 2023, we assumed discount rates of 5.61% and 4.96%, 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 2025 non-operating income by $0.3 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, 2024, the historical annualized return was approximately 2.43% compared to an average expected return of 5.73%. The actual loss on plan assets incurred for 2024 was 0.55%, 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 2024 U.S. pension cost was 6.00%. We have assumed a return on plan assets for 2025 of 6.00%. The 2025 expected return on assets was calculated in a manner consistent with 2024. Absent any other changes, a one-quarter percentage point increase or decrease in this assumption would impact 2025 non-operating income by $0.9 million.

Contributions to the unfunded pension plan were $2.5 million in 2024 and were made on a monthly basis to fund benefit payments. We estimate the 2025 contributions will be approximately $2.9 million. See Note 18 to the Consolidated Financial Statements for more information.

The estimated inflation in health care costs represents a 5 to 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
2023	7.8%	7.3%	19.9%	23.6%
2024	10.5%	7.8%	11.8%	12.0%
2025	12.0%	8.6%		

The difference between the actual and expected health care costs is amortized into earnings as described below. As of December 31, 2024, health care cost increases are estimated to decrease ratably until 2034, 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 decreased by $3.7 million in 2024 primarily due to changes in actuarial assumptions, including a 67-basis point increase in the discount rate, partially offset by the impact of demographic changes. The $3.7 million change in actuarial loss impacting our U.S. pension plans is reflected as a component of other comprehensive income in our Consolidated Statements of Earnings and Comprehensive Income along with actuarial gains and losses from our foreign pension plan and our postretirement benefit plans.

<u>Income Taxes</u> – 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 of these 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, 2024, we have recorded valuation allowances totaling $36.3 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, 2024, includes deferred income tax liabilities of $167.1 million, which is net of $106.8 million of deferred tax assets. We have established $36.3 million of valuation allowances consisting of $30.7 million for state deferred tax assets, primarily net operating loss carryforwards, and $5.6 million for federal and state 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, 2024, and 2023, we had $622.9 million and $646.7 million, respectively, of gross state NOL carryforwards expiring between 2025 and 2043. We estimate we will need to generate future U.S. taxable income of approximately $168.8 million for state income tax purposes during the respective realization periods (ranging from 2025 to 2043) to be able to fully realize the gross state NOL carryforwards offset by related valuation allowances.

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 are 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 used 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 2024, 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 2024, 2023 or 2022 related to intangible assets. We did not test tangible assets for impairment in 2024, 2023 or 2022 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 earnings 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 construction industry, 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 both 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 both our October 2006 Chapter 11 reorganization and separation with AFI 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 BOK and Insolcorp acquisitions in 2023 include the potential for future contingent earn-out payments based on the financial or operational performance of the acquired companies. We estimated the fair value of these contingent consideration liabilities upon acquisition and are required to measure these liabilities at fair value each reporting period until the contingencies are 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 include discount rates, royalty rates, future expected cash flows from sales attributed to the acquired company's developed technologies, trade names, trade secrets and customer relationships, as well as assumptions about the period of time such assets will continue to be used in the combined company's portfolio. The principal assumptions used in valuing contingent consideration include the probability of meeting the future revenue and EBITDA growth targets and discount rates.

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

See Note 2 to the Consolidated Financial Statements for further information.

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 use these derivative financial instruments as risk management tools and not for speculative trading purposes. In addition, our 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.

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, 2024 levels would increase 2025 interest expense by approximately $0.5 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, 2024, we had interest rate swaps outstanding with notional amounts of $400 million. We use interest rate swaps to minimize the fluctuations in earnings caused by interest rate volatility. Under the terms of these swaps, we receive floating rate SOFR and pay a fixed rate over the hedged period. The following table summarizes our interest rate swaps as of December 31, 2024 (dollar amounts in millions):

Coverage Period		Notional Amount	Risk Coverage	Trade Date
March 2021 to March 2025	$	100.0	USD-SOFR	November 28, 2018
November 2023 to December 2025	$	50.0	USD-SOFR	October 23, 2023
March 2024 to June 2026	$	50.0	USD-SOFR	March 25, 2024
November 2023 to December 2026	$	50.0	USD-SOFR	October 10, 2023
March 2024 to June 2027	$	50.0	USD-SOFR	March 27, 2024
November 2023 to November 2027	$	50.0	USD-SOFR	September 29, 2023
June 2024 to June 2028	$	50.0	USD-SOFR	June 26, 2024

These swaps are designated as cash flow hedges against changes in SOFR for a portion of our variable rate debt. The net liability measured at fair value was $1.5 million as of December 31, 2024.

The table below provides information about our long-term debt obligations as of December 31, 2024, 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.

Scheduled maturity date (dollar amounts in millions)	**2025**	**2026**	**2027**	**2028**	**2029**	**After 2029**	**Total**
Variable rate principal payments	$ 22.5	$ 22.5	$ 482.5	$ -	$ -	$ -	$ 527.5
Average interest rate	4.17%	4.11%	4.20%	-	-	-	4.20%

Variable rate principal payments reflected in the preceding table exclude $2.4 million of unamortized debt financing costs as of December 31, 2024.

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

SUPPLEMENTARY DATA

Quarterly Financial Information for the Quarter Ended December 31, 2024 (Unaudited)

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

Management's Report on Internal Control over Financial Reporting.

Reports of Independent Registered Public Accounting Firm.

Consolidated Statements of Earnings and Comprehensive Income for the Years Ended December 31, 2024, 2023 and 2022.

Consolidated Balance Sheets as of December 31, 2024 and 2023.

Consolidated Statements of Shareholders' Equity for the Years Ended December 31, 2024, 2023 and 2022.

Consolidated Statements of Cash Flows for the Years Ended December 31, 2024, 2023 and 2022.

Notes to Consolidated Financial Statements.

Schedule II for the Years Ended December 31, 2024, 2023 and 2022.

Fourth Quarter 2024 Compared to Fourth Quarter 2023

Consolidated fourth-quarter 2024 net sales of $367.7 million increased $55.4 million, or 17.7%, compared to the prior-year quarter. Mineral Fiber net sales increased 8.1% due to favorable AUV of $20 million, partially offset by a decrease in volumes of $2 million. Architectural Specialties net sales increased 40.8% primarily due to a $25 million increase from the acquisitions of Zahner, 3form and BOK, and partially due to improved custom project net sales.

For the fourth quarter of 2024, cost of goods sold was 60.9% of net sales, compared to 61.7% in the fourth quarter of 2023. The year-over-year decrease in cost of goods sold as a percent of net sales was driven primarily by favorable AUV margin benefit, improvements related to the acquisition of 3form, improved manufacturing productivity and lower input costs.

SG&A expenses in the fourth quarter of 2024 were $85.4 million, or 23.2% of net sales compared to $73.3 million, or 23.5% of net sales, in the fourth quarter of 2023. The increase in SG&A expenses was driven primarily by an $11 million increase due to the acquisitions of Zahner, 3form and BOK, a $5 million increase in selling expenses, primarily due to higher employee costs, and a $3 million decrease in company-owned life insurance gains related to deferred compensation plans. These impacts were partially offset by a $6 million decrease in acquisition-related expenses.

In the fourth quarter of 2024, we recorded $1.0 million of remeasurement losses for changes in the fair value of contingent consideration related to the acquisition of BOK and Insolcorp. In the same period in 2023, we recorded $0.1 million of remeasurement losses for changes in the fair value of contingent consideration related to the acquisition of BOK. See Note 19 to the Consolidated Financial Statements for further information.

In the fourth quarter of 2024 we recorded a $0.3 loss upon sale of undeveloped land adjacent to our Corporate headquarters.

Equity earnings from unconsolidated subsidiaries were $24.7 million in the fourth quarter of 2024, compared to $20.2 million in the fourth quarter of 2023. In the fourth quarter of 2024, WAVE equity earnings were $25.0 million, while Overcast equity losses were $0.3 million. The increase in WAVE earnings resulted primarily from favorable AUV, higher volumes and lower steel costs. See Note 11 to the Consolidated Financial Statements for further information.

As a result, operating income increased 23.5% to $81.9 million in the fourth quarter of 2024 compared to $66.3 million in the fourth quarter of 2023.

Interest expense in the fourth quarter of 2024 was $9.2 million compared to $8.6 million in the fourth quarter of 2023. The increase in interest expense was primarily due to higher average effective interest rates, partially offset by lower average debt balances.

Fourth-quarter income tax expense was $13.8 million in 2024 compared to $13.9 million in 2023. The effective tax rate was 18.2% for the fourth quarter of 2024 compared to 22.9% for the same period in 2023. The decrease in the effective tax rate was primarily due to a greater benefit recognized from a reduction in our valuation allowance for capital loss carryforwards as well as statute closures.

Basic and diluted earnings per share were $1.43 and $1.42, respectively, in the fourth quarter of 2024, compared to basic and diluted earnings per share of $1.06 in the fourth quarter of 2023.

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, 2024.

KPMG LLP, an independent registered public accounting firm, audited our internal control over financial reporting as of December 31, 2024, 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 25, 2025

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, 2024, 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, 2024, 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, 2024 and 2023, the related consolidated statements of earnings and comprehensive income, shareholders' equity, and cash flows for each of the years in the three-year period ended December 31, 2024, and the related notes and financial statement schedule II (collectively, the consolidated financial statements), and our report dated February 25, 2025 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 25, 2025

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, 2024 and 2023, the related consolidated statements of earnings and comprehensive income, shareholders' equity, and cash flows for each of the years in the three-year period ended December 31, 2024, 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, 2024 and 2023, and the results of its operations and its cash flows for each of the years in the three-year period ended December 31, 2024, 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, 2024, 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 25, 2025 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 Note 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 $319.2 million and $381.9 million, respectively, as of December 31, 2024, resulting in a funded status of $62.7 million. Additionally, the Company's U.S. accumulated postretirement benefit obligation was $38.8 million, which is an unfunded liability.

We identified the evaluation of the Company's measurement of the U.S. 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 25, 2025

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

	Years Ended December 31,		
	2024	2023	2022
Net sales	$ 1,445.7	$ 1,295.2	$ 1,233.1
Cost of goods sold	864.1	798.2	784.0
Gross profit	581.6	497.0	449.1
Selling, general and administrative expenses	308.5	262.5	237.0
Loss related to change in fair value of contingent consideration	1.6	0.1	11.0
Loss on sales of fixed assets, net	0.6	-	-
Equity (earnings) from unconsolidated affiliates, net	(103.4)	(89.3)	(77.6)
Operating income	374.3	323.7	278.7
Interest expense	39.8	35.3	27.1
Other non-operating (income), net	(12.6)	(9.9)	(6.0)
Earnings from continuing operations before income taxes	347.1	298.3	257.6
Income tax expense	82.2	74.5	57.7
Earnings from continuing operations	264.9	223.8	199.9
Earnings from discontinued businesses, net of tax (benefit) expense of $ -, $- and ($3.0)	-	-	3.0
Net earnings from discontinued operations	-	-	3.0
Net earnings	$ 264.9	$ 223.8	$ 202.9
Other comprehensive (loss) income, net of tax:			
Foreign currency translation adjustments	(3.2)	0.5	(1.8)
Derivative (loss) gain, net	(1.6)	(9.0)	18.6
Pension and postretirement adjustments	(0.7)	3.9	(7.3)
Total other comprehensive (loss) income	(5.5)	(4.6)	9.5
Total comprehensive income	$ 259.4	$ 219.2	$ 212.4
Earnings per share of common stock, continuing operations:			
Basic	$ 6.06	$ 5.00	$ 4.31
Diluted	$ 6.02	$ 4.99	$ 4.30
Earnings per share of common stock, discontinued operations:			
Basic	$ -	$ -	$ 0.07
Diluted	$ -	$ -	$ 0.07
Net earnings per share of common stock:			
Basic	$ 6.06	$ 5.00	$ 4.38
Diluted	$ 6.02	$ 4.99	$ 4.37
Average number of common shares outstanding:			
Basic	43.7	44.7	46.3
Diluted	44.0	44.8	46.4

See accompanying notes to consolidated financial statements beginning on page 44.

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

	December 31, 2024	December 31, 2023
Assets		
Current assets:		
Cash and cash equivalents	$ 79.3	$ 70.8
Accounts and notes receivable, net	134.4	111.0
Inventories, net	109.8	104.0
Income taxes receivable	3.9	0.8
Other current assets	21.5	26.4
Total current assets	348.9	313.0
Property, plant and equipment, net	598.8	566.4
Operating lease assets	36.6	26.6
Finance lease assets	34.6	25.2
Prepaid pension costs	88.3	84.6
Investment in unconsolidated affiliates	27.2	17.4
Goodwill	203.2	175.5
Intangible assets, net	455.0	412.4
Other non-current assets	50.1	51.3
Total assets	$ 1,842.7	$ 1,672.4
Liabilities and Shareholders' Equity		
Current liabilities:		
Current installments of long-term debt	$ 22.5	$ 22.5
Accounts payable and accrued expenses	215.3	159.9
Operating lease liabilities	8.1	6.8
Finance lease liabilities	3.8	3.0
Income taxes payable	-	2.3
Total current liabilities	249.7	194.5
Long-term debt, less current installments	502.6	564.3
Operating lease liabilities	29.7	20.4
Finance lease liabilities	33.2	23.4
Postretirement benefit liabilities	35.3	42.4
Pension benefit liabilities	24.6	26.9
Other long-term liabilities	28.4	26.8
Income taxes payable	15.0	15.0
Deferred income taxes	167.1	166.9
Total non-current liabilities	835.9	886.1
Shareholders' equity:		
Common stock, $0.01 par value per share, 200 million shares authorized, 63,176,007 shares issued and 43,561,649 shares outstanding as of December 31, 2024 and 63,054,340 shares issued and 43,902,061 shares outstanding as of December 31, 2023	0.6	0.6
Capital in excess of par value	604.0	591.7
Retained earnings	1,560.7	1,346.6
Treasury stock, at cost, 19,614,358 shares as of December 31, 2024 and 19,152,279 shares as of December 31, 2023	(1,298.0)	(1,242.4)
Accumulated other comprehensive (loss)	(110.2)	(104.7)
Total shareholders' equity	757.1	591.8
Total liabilities and shareholders' equity	$ 1,842.7	$ 1,672.4

See accompanying notes to consolidated financial statements beginning on page 44.

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

	Common Stock		Additional Paid-In	Retained	Treasury Stock		Accumulated Other Comprehensive	
	Shares	Amount	Capital	Earnings	Shares	Amount	(Loss)	Total
December 31, 2021	47,302,299	$ 0.6	$ 561.3	$ 1,011.4	15,472,856	$ (944.0)	$ (109.6)	$ 519.7
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	45,572,185	$ 0.6	$ 573.6	$ 1,169.9	17,364,635	$ (1,109.0)	$ (100.1)	$ 535.0
Stock issuance, net	115,701	-	0.1	-	1,819	(0.1)	-	-
Cash dividends - $1.042 per common share	-	-	-	(47.1)	-	-	-	(47.1)
Share-based employee compensation	-	-	18.0	-	-	-	-	18.0
Net earnings	-	-	-	223.8	-	-	-	223.8
Other comprehensive (loss)	-	-	-	-	-	-	(4.6)	(4.6)
Acquisition of treasury stock	(1,785,825)	-	-	-	1,785,825	(133.3)	-	(133.3)
December 31, 2023	43,902,061	$ 0.6	$ 591.7	$ 1,346.6	19,152,279	$ (1,242.4)	$ (104.7)	$ 591.8
Stock issuance, net	121,667	-	-	-	-	-	-	-
Cash dividends - $1.148 per common share	-	-	-	(50.8)	-	-	-	(50.8)
Share-based employee compensation	-	-	12.3	-	-	-	-	12.3
Net earnings	-	-	-	264.9	-	-	-	264.9
Other comprehensive (loss)	-	-	-	-	-	-	(5.5)	(5.5)
Acquisition of treasury stock	(462,079)	-	-	-	462,079	(55.6)	-	(55.6)
December 31, 2024	43,561,649	$ 0.6	$ 604.0	$ 1,560.7	19,614,358	$ (1,298.0)	$ (110.2)	$ 757.1

See accompanying notes to consolidated financial statements beginning on page 44.

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

	Years Ended December 31,		
	2024	2023	2022
Cash flows from operating activities:			
Net earnings	$ 264.9	$ 223.8	$ 202.9
Adjustments to reconcile net earnings to net cash provided by operating activities:			
Depreciation and amortization	103.2	89.2	83.7
Deferred income taxes	0.2	(0.8)	(1.6)
Share-based compensation	18.3	18.8	14.3
Equity earnings from unconsolidated affiliates, net	(103.4)	(89.3)	(77.6)
Loss on sales of fixed assets, net	0.6	-	-
Loss related to change in fair value of contingent consideration	1.6	0.1	11.0
Payments of contingent consideration in excess of acquisition date fair value	-	(5.0)	(1.9)
Write-off of debt refinancing fees	-	-	0.6
Other non-cash adjustments, net	(0.1)	(0.5)	0.3
Changes in operating assets and liabilities:			
Receivables	(24.6)	(1.6)	(12.4)
Inventories	1.9	6.1	(19.7)
Accounts payable and accrued expenses	27.3	8.0	(1.8)
Income taxes receivable and payable, net	(5.4)	3.2	(6.9)
Other assets and liabilities	(17.7)	(18.5)	(8.5)
Net cash provided by operating activities	266.8	233.5	182.4
Cash flows from investing activities:			
Purchases of property, plant and equipment	(82.8)	(83.8)	(74.8)
Return of investment from joint venture	97.8	96.9	104.5
Cash paid for acquisitions, net of cash acquired	(123.5)	(26.5)	(2.8)
Investment in unconsolidated affiliate	(5.5)	-	-
Proceeds from the sales of fixed assets	24.3	-	-
Proceeds from company-owned life insurance, net	10.4	3.0	1.3
Net cash (used for) provided by investing activities	(79.3)	(10.4)	28.2
Cash flows from financing activities:			
Proceeds from revolving credit facility	138.0	55.0	355.0
Payments of revolving credit facility	(178.0)	(120.0)	(315.0)
Proceeds from long-term debt	-	-	450.0
Payments of long-term debt	(22.5)	-	(468.7)
Financing costs	-	-	(3.1)
Payments for finance leases	(3.3)	(2.7)	(2.2)
Dividends paid	(50.6)	(46.9)	(44.2)
Payments from share-based compensation plans, net of tax	(4.9)	(1.8)	(2.0)
Payments of acquisition-related contingent consideration	-	(10.2)	(6.7)
Payments for treasury stock acquired	(55.0)	(132.0)	(165.0)
Payments of excise tax for treasury stock acquired, net	(1.3)	-	-
Net cash (used for) financing activities	(177.6)	(258.6)	(201.9)
Effect of exchange rate changes on cash and cash equivalents	(1.4)	0.3	(0.8)
Net increase (decrease) in cash and cash equivalents	8.5	(35.2)	7.9
Cash and cash equivalents at beginning of year	70.8	106.0	98.1
Cash and cash equivalents at end of year	$ 79.3	$ 70.8	$ 106.0
Supplemental Cash Flow Disclosures:			
Interest paid	$ 37.4	$ 33.9	$ 26.9
Income tax payments, net	87.6	72.1	63.2
Amounts in accounts payable for capital expenditures	4.9	2.4	2.8
Purchase of property, plant and equipment through vendor financing	1.1	-	-

See accompanying notes to consolidated financial statements beginning on page 44.

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 and Investments in Unconsolidated Affiliates

In December 2024, we acquired all the issued and outstanding stock of A. Zahner Company ("Zahner"), based in Kansas City, Missouri. Zahner is a designer and manufacturer of exterior metal architectural solutions. The operations, assets and liabilities of Zahner are included in our Architectural Specialties segment.

In April 2024, we acquired all the issued and outstanding membership interests in 3form, LLC ("3form"), based in Salt Lake City, Utah, from Hunter Douglas, Inc. 3form is a designer and manufacturer of architectural resin and glass products used for specialty walls, partitions and ceilings. The operations, assets and liabilities of 3form are included in our Architectural Specialties segment.

In January 2024, we entered into a strategic partnership and equity investment in Overcast Innovations LLC ("Overcast") with McKinstry Essention, LLC whereby we contributed $5.5 million in exchange for a 19.5% ownership interest in Overcast, with future rights to increase our ownership interest. Overcast is a solutions company offering prefabricated ceiling cloud systems, modular grid platforms and engineering design services to reduce waste and inefficiencies in the built environment. Our investment and equity earnings in Overcast are included in our Unallocated Corporate segment.

In October 2023, we acquired a portion of the business and certain assets of Insolcorp, LLC ("Insolcorp"), based in Albemarle, North Carolina. Insolcorp develops, tests and manufactures energy saving products deployed in building and roofing installations. The acquired operations, assets and liabilities of Insolcorp are included in our Mineral Fiber segment.

In July 2023, we acquired all the issued and outstanding stock of BOK Modern, LLC ("BOK"), based in San Rafael, California. BOK is a designer of exterior metal architectural solutions. The operations, assets and liabilities of BOK are included in our Architectural Specialties segment.

In November 2022, we acquired the business of GC Products, Inc. ("GC Products"), based in Lincoln, California. GC Products is a designer and manufacturer of glass-reinforced-gypsum, glass-reinforced-cement, molded ceiling and specialty wall products. The operations, assets and liabilities of GC Products are included in our Architectural Specialties segment.

See Note 5 for additional details.

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.

Reclassifications. Certain amounts in the prior year's Notes to Consolidated Financial Statements have been recast to conform to the 2024 presentation, most notably disaggregated expenditures for our operating segments. See the subheading, "Recently Adopted Accounting Standards" below and Note 3 for additional information.

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. 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. Revenue for such product sales are recognized over time. Custom project customer arrangements produce contract assets or liabilities that are not material to our Consolidated Financial Statements. The manufacturing cycle for most custom products is typically short.

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. See Note 25 to the Consolidated Financial Statements for additional details.

Research and Development Costs. We expense research and development costs, or product innovation costs, as they are incurred. See Note 25 to the Consolidated Financial Statements for additional details.

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. 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 Earnings and Comprehensive Income. Acquisition-related contingent consideration paid is 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 are classified as cash flows from operating activities in our Consolidated Statements of Cash Flows.

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 additional details.

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, 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.

See Note 16 to the Consolidated Financial Statements for additional details.

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, Foundation Building Materials, Inc. and GMS, Inc., individually exceeded 10% of our revenues in 2024, 2023 and 2022. Gross sales to these two customers totaled $735.6 million, $631.9 million and $547.8 million in 2024, 2023 and 2022, respectively, and were included within our Mineral Fiber and Architectural Specialties segments.

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 additional details.

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 for impairment in 2024, 2023 or 2022 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.

See Note 10 to the Consolidated Financial Statements for additional details.

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 13 years. Several leases include options for us to purchase leased items at fair value or renew for up to 10 years, or multiple 10-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.

See Note 12 to the Consolidated Financial Statements for additional details.

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.

Investments in Unconsolidated Affiliates. We account for investments in entities over which we have significant influence but do not control using the equity method of accounting. Under the equity method, our initial investment is recorded at cost and subsequently adjusted to recognize our share of the investee's earnings or losses, which are included as a component of our net earnings. The carrying amount of the investment is also adjusted for dividends received from the investee, which are recorded as a reduction in the carrying amount of the investment, as well as contributions made, which are recorded as an increase in the carrying amount of the investment.

Investments in unconsolidated affiliates as of December 31, 2024 reflected the equity interest in our 50% investment in our WAVE joint venture and our 19.5% equity interest in Overcast. Both the WAVE joint venture and Overcast investment are reflected within our Consolidated Financial Statements using the equity method of accounting. WAVE is reflected as a component of our Mineral Fiber segment while Overcast is included as a component of our Unallocated Corporate segment.

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 within cash flows from investing activities in our Consolidated Statements of Cash Flows for all years presented. Management regularly evaluates its investment in unconsolidated affiliates for impairment. Based on those evaluations, management concluded that its investments were not impaired in 2024, 2023 or 2022. See Note 11 to the Consolidated Financial Statements for additional details.

Goodwill and Intangible Assets. Our definite-lived intangible assets consist primarily of customer relationships (amortized over 2 to 20 years), developed technology (amortized over 10 to 20 years), acquired internally-developed software (amortized over 5 to 7 years), trademarks and brand names (amortized over 3 to 20 years), trade secrets (15 years) and non-compete agreements (amortized over 3 to 5 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 for impairment in 2024, 2023 or 2022 as no indicators of impairment existed.

Our indefinite-lived assets include goodwill, 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 for impairment during any interim periods during 2024, as no indicators of impairment existed. We completed our annual impairment test in the fourth quarter of 2024. No impairment charges were recorded in 2024, 2023 or 2022.

See Note 13 to the Consolidated Financial Statements for additional details.

Foreign Currency Transactions. Assets and liabilities of our subsidiaries operating outside the U.S. 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) income 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.

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.

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.

Recently Adopted Accounted Standards

In November 2023, the Financial Accounting Standards Board ("FASB") issued Accounting Standards Update ("ASU") 2023-07, *"Improvements to Reportable Segment Disclosures,"* which modifies reportable segment disclosure requirements. This ASU expands annual and interim reportable segment disclosures, including: disclosure of the title and position of our chief operating decision maker ("CODM"), interim and annual disclosure of significant reportable segment expenses that are components of segment profit or loss information provided to the CODM, and interim disclosure of all annual reportable segment profit or loss and asset data currently only required to be disclosed annually. Effective in the fourth quarter of 2024, we adopted this standard which resulted in changes to our disclosures. See Note 3 to the Consolidated Financial Statements for additional details.

Recently Issued Accounting Standards

In December 2023, the FASB issued ASU 2023-09, *"Improvements to Income Tax Disclosures,"* which modifies the disclosure requirements for income taxes. This ASU requires disclosure of tabular statutory to effective rate reconciliation in both percentages and dollars, additional disaggregated rate reconciliation categories and disaggregation of both income taxes paid and income tax expense by jurisdiction. This guidance is effective for annual periods beginning after December 15, 2024. We expect this ASU to only impact our disclosures with no impact to our result of operations, cash flows and financial condition.

In November 2024, the FASB issued ASU 2024-03, "*Income Statement - Reporting Comprehensive Income - Expense Disaggregation Disclosures*," which expands disclosure of significant costs and expenses. This ASU requires expanded disclosures of significant costs and expenditures within cost of goods sold and SG&A expenses, including amounts of inventory purchased, employee compensation, depreciation, amortization and selling expenses. This ASU also requires expanded qualitative disclosures, including a description of selling expenses and a description of non-disaggregated expenses. This guidance is effective for annual periods beginning after December 15, 2026 and interim periods within fiscal years beginning after December 15, 2027. Early adoption is permitted. We expect this ASU to only impact our disclosures with no impact to our result of operations, cash flows and financial condition.

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 fiberglass ceiling systems. Our mineral fiber products offer various performance attributes such as acoustical control, rated fire protection, and energy efficiency, along with other health and sustainability features and aesthetic appeal. Ceiling products are primarily 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 system 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, Pennsylvania 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 – designs, produces and sources specialty ceilings, walls, and other interior and exterior architectural applications primarily for use in commercial settings. Products are available in numerous materials, such as metal, felt, wood, resin, wood fiber and glass-reinforced-gypsum in various colors, shapes and designs. These products offer a range of design and performance attributes such as acoustical control, rated fire protection, light, aesthetic appeal, energy conservation and building performance. We sell standard, premium and customized products, a portion of which are sourced from third-party producers. Architectural Specialties products are sold primarily to resale distributors and direct customers, primarily ceiling systems contractors. This segment's revenues are primarily project driven, which can lead to more variability in sales patterns. 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, our Overcast investment and related equity earnings/losses, 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 CODM is our President and Chief Executive Officer. Segment operating income (loss) is the measure of segment profit or loss reviewed by the CODM. The following tables are presented at the level of disaggregation regularly reviewed by the CODM to evaluate operating performance and allocate resources to segments.

(dollar amounts in millions, except share data)

For the year ended 2024	Mineral Fiber	Architectural Specialties	Unallocated Corporate	Total
Net sales to external customers	$ 986.0	$ 459.7	$ -	$ 1,445.7
Cost of goods sold	586.2	276.3	1.6	864.1
Gross profit (loss)	399.8	183.4	(1.6)	581.6
SG&A expenses	180.8	126.7	1.0	308.5
Loss related to change in fair value of contingent consideration	0.2	1.4	-	1.6
Loss on sales of fixed assets, net	0.6	-	-	0.6
Equity (earnings) loss from unconsolidated affiliates, net	(104.3)	-	0.9	(103.4)
Segment operating income (loss)	$ 322.5	$ 55.3	$ (3.5)	$ 374.3
Segment assets	$ 1,063.8	$ 602.2	$ 176.7	$ 1,842.7
Investment in unconsolidated affiliates	22.6	-	4.6	27.2
Depreciation and amortization	80.2	23.0	-	103.2
Purchases of property, plant and equipment	64.3	18.5	-	82.8

For the year ended 2023	Mineral Fiber	Architectural Specialties	Unallocated Corporate	Total
Net sales to external customers	$ 932.4	$ 362.8	$ -	$ 1,295.2
Cost of goods sold	574.1	222.4	1.7	798.2
Gross profit (loss)	358.3	140.4	(1.7)	497.0
SG&A expenses	161.9	99.4	1.2	262.5
Loss related to change in fair value of contingent consideration	-	0.1	-	0.1
Equity (earnings) from unconsolidated affiliates, net	(89.3)	-	-	(89.3)
Segment operating income (loss)	$ 285.7	$ 40.9	$ (2.9)	$ 323.7
Segment assets	$ 1,091.9	$ 421.1	$ 159.4	$ 1,672.4
Investment in unconsolidated affiliates	17.4	-	-	17.4
Depreciation and amortization	75.3	13.9	-	89.2
Purchases of property, plant and equipment	67.2	16.6	-	83.8

For the year ended 2022	Mineral Fiber	Architectural Specialties	Unallocated Corporate	Total
Net sales to external customers	$ 887.4	$ 345.7	$ -	$ 1,233.1
Cost of goods sold	559.4	222.3	2.3	784.0
Gross profit (loss)	328.0	123.4	(2.3)	449.1
SG&A expenses	144.7	90.7	1.6	237.0
Loss related to change in fair value of contingent consideration	-	11.0	-	11.0
Equity (earnings) from unconsolidated affiliates, net	(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
Investment in unconsolidated affiliates	23.9	-	-	23.9
Depreciation and amortization	69.5	14.2	-	83.7
Purchases of property, plant and equipment	63.8	11.0	-	74.8

In 2024, we sold an idled Mineral Fiber plant in St. Helens, Oregon for total proceeds of $9.4 million, with a $4.6 million gain recorded upon sale. Also in 2024, we sold a parcel of undeveloped land adjacent to our corporate campus in Lancaster, Pennsylvania within our Mineral Fiber segment for total proceeds of $12.8 million. Upon classification to held for sale during the third quarter of 2024, we recognized an impairment loss of $4.9 million and during the fourth quarter of 2024 we recognized a $0.3 million loss upon sale. Finally, in 2024 we sold a building and related land of an Architectural Specialties design center in Chicago, Illinois for total proceeds of $2.1 million, with no gain or loss recorded upon sale. The impact of these transactions is recorded within loss on sales of fixed assets, net on our Consolidated Statements of Earnings and Comprehensive Income.

(dollar amounts in millions, except share data)

The sum of the segments' operating income (loss) equals the total consolidated operating income as reported on our Consolidated Statements of Earnings 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:

	2024	2023	2022
Total consolidated operating income	$ 374.3	$ 323.7	$ 278.7
Interest expense	39.8	35.3	27.1
Other non-operating (income), net	(12.6)	(9.9)	(6.0)
Earnings from continuing operations before income taxes	$ 347.1	$ 298.3	$ 257.6

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.

	2024	2023	2022
Geographic Areas			
Net sales			
Mineral Fiber:			
United States	$ 909.5	$ 854.2	$ 816.3
Canada	76.5	78.2	71.1
Total Mineral Fiber	986.0	932.4	887.4
Architectural Specialties:			
United States	448.8	349.3	322.1
Canada	10.9	13.5	23.6
Total Architectural Specialties	459.7	362.8	345.7
Total net sales	$ 1,445.7	$ 1,295.2	$ 1,233.1

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

	2024	2023
Property, plant and equipment, net as of December 31,		
Mineral Fiber:		
United States	$ 477.9	$ 494.9
Total Mineral Fiber	477.9	494.9
Architectural Specialties:		
United States	116.6	66.5
Canada	4.3	5.0
Total Architectural Specialties	120.9	71.5
Total property, plant and equipment, net	$ 598.8	$ 566.4

NOTE 4. REVENUE

Disaggregation of Revenues

Our Mineral Fiber and Architectural Specialties operating segments both manufacture and sell building products, predominately ceiling and wall systems (primarily mineral fiber, fiberglass, metal, felt, wood, resin, wood fiber and glass-reinforced-gypsum) 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.

(dollar amounts in millions, except share data)

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.

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, online customers, major facility owners, group purchasing organizations and maintenance, repair and operating entities and original product manufacturers. Geographically, this category includes sales throughout the U.S., 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, 2024, 2023 and 2022:

Mineral Fiber	2024	2023	2022
Distributors	$ 716.9	$ 682.3	$ 654.1
Home centers	107.0	103.5	99.1
Direct customers	60.5	57.1	61.0
Other	101.6	89.5	73.2
Total	$ 986.0	$ 932.4	$ 887.4

Architectural Specialties	2024	2023	2022
Distributors	$ 224.9	$ 192.7	$ 174.4
Direct customers	214.6	159.7	168.0
Other	20.2	10.4	3.3
Total	$ 459.7	$ 362.8	$ 345.7

NOTE 5. ACQUISITIONS

2024 ACQUISITIONS

Zahner

In December 2024, we acquired the issued and outstanding shares of Zahner for $30.0 million, net of $16.0 million of cash acquired, subject to customary post-closing adjustments for working capital. The total fair value of cash and other tangible assets acquired, less liabilities assumed, was $16.3 million. The fair value of significant classes of non-cash tangible assets acquired and liabilities assumed included accounts receivable of $10.9 million, property, plant and equipment of $8.7 million, operating ROU assets and lease liabilities of $2.9 million, finance ROU assets and lease liabilities of $8.9 million and accounts payable and accrued liabilities of $19.6 million. The total fair value of identifiable intangible assets acquired was $23.5 million, resulting in $6.2 million of goodwill. The following table summarizes the preliminary fair values of identifiable intangible assets acquired, and their estimated useful lives:

	Fair Value at Acquisition Date	Estimated Useful Life
Trademarks and brand names	$ 5.8	15 years
Developed technology	5.8	11 years
Trade secrets	5.3	15 years
Non-compete agreements	4.9	5 years
Customer relationships	1.2	9 years
Backlog	0.5	2 years
Total identifiable intangible assets	$ 23.5	

(dollar amounts in millions, except share data)

Goodwill from the Zahner acquisition relates to many factors, including the technical competencies and capabilities of the acquired workforce 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. Valuations for assets acquired and liabilities assumed are based on preliminary estimates that are subject to revisions and may result in adjustments to preliminary values as valuations are finalized.

3form

In April 2024, we acquired the issued and outstanding membership interests in 3form for $93.5 million, net of $0.5 million of cash acquired. The total fair value of cash and other tangible assets acquired, less liabilities assumed, was $34.5 million. The fair value of significant classes of non-cash tangible assets acquired and liabilities assumed included accounts receivable of $6.6 million, inventory of $7.9 million, property, plant and equipment of $35.0 million, operating ROU assets of $10.1 million, operating lease liabilities of $10.0 million and accounts payable and accrued liabilities of $16.3 million. The total fair value of identifiable intangible assets acquired was $37.6 million, resulting in $21.9 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
Trademarks and brand names	$ 11.6	15 years
Customer relationships	10.2	5 years
Developed technology	6.2	10 - 16 years
Non-compete agreements	5.1	5 years
Software	4.1	5 years
Backlog	0.4	1 year
Total identifiable intangible assets	$ 37.6	

Goodwill from the 3form acquisition relates to many factors, including the technical competencies and capabilities of the acquired workforce 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.

2024 Acquisitions: Proforma Financial Information

The following table summarizes aggregate unaudited as reported and pro forma information assuming the acquisitions of Zahner and 3form had occurred on January 1, 2022. The unaudited pro forma results include the depreciation and amortization associated with the acquired assets. The unaudited pro forma results do not include any expected benefits from the Zahner and 3form acquisitions. 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, 2022.

	2024	2023	2022
Net sales, pro forma	$ 1,586.2	$ 1,425.2	$ 1,365.9
Net sales, as reported	1,445.7	1,295.2	1,233.1
Earnings from continuing operations before income taxes, pro forma	352.8	300.2	254.4
Earnings from continuing operations before income taxes, as reported	347.1	298.3	257.6

For the year ended December 31, 2024, net sales of $69.6 million and operating income of $3.0 million, including $6.5 million of depreciation and amortization, from Zahner and 3form were included in our Consolidated Statements of Operations and Comprehensive Income since the acquisition dates.

2023 ACQUISITIONS

Insolcorp

In October 2023, we acquired a portion of the business of Insolcorp for $1.7 million of cash and additional contingent consideration payable upon the achievement of certain future performance obligations from 2024 through 2031. We, with the assistance of an independent, third-party valuation specialist, determined the estimated fair value of the contingent consideration of $0.7 million at the acquisition date, resulting in a purchase price of $2.4 million. The total fair value of tangible assets acquired less liabilities assumed was $0.1 million. The total fair value of identifiable intangible assets acquired was $2.1 million, resulting in $0.2 million of goodwill. Acquired intangible assets were comprised of in-process research and development of $1.7 million and amortizable trademarks of $0.4 million. All acquired intangible assets are being amortized on a straight-line basis over a life of 20 years. All of the acquired goodwill is deductible for tax purposes. See Note 19 to the Consolidated Financial Statements for further information regarding the acquisition-related contingent consideration liability for Insolcorp.

BOK

In July 2023, we acquired all of the issued and outstanding stock of BOK for $13.8 million and additional contingent consideration payable upon the achievement of certain future performance obligations in 2024 and 2025 not to exceed $3.3 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 of $0.8 million at the acquisition date, resulting in a purchase price of $14.6 million. The total fair value of tangible assets acquired less liabilities assumed was $1.4 million. The total fair value of identifiable intangible assets acquired was $5.4 million, resulting in $7.8 million of goodwill. Acquired intangible assets were comprised of amortizable patents of $1.9 million, amortizable trademarks of $1.8 million, amortizable customer relationships of $1.4 million, and non-compete agreements of $0.3 million, that are being amortized on a straight-line basis over a weighted-average life of 18, 15, 2 and 3 years, respectively. All of the acquired goodwill is deductible for tax purposes. See Note 19 to the Consolidated Financial Statements for further information regarding the acquisition-related contingent consideration liability for BOK.

Software-Related Intellectual Property

In May 2023, we acquired a co-ownership interest in certain software-related intellectual property for $11.0 million, of which $10.0 million was paid in the second quarter of 2023 and an additional $1.0 million was paid in the fourth quarter of 2023. As a result of this transaction, the total fair value of identifiable intangible assets acquired was $6.5 million of software and $4.5 million of developed technology, which are being amortized over a weighted-average life of 5 and 17 years, respectively.

2022 ACQUISITION

GC Products

In November 2022, we acquired the business 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 developed technology of $0.7 million, amortizable customer relationships of $0.6 million, and a non-compete agreement of $0.2 million, which are being amortized over a weighted-average life of 20, 6 and 3 years, respectively. All of the acquired goodwill is deductible for tax purposes.

NOTE 6. DISCONTINUED OPERATIONS

EMEA AND PACIFIC RIM BUSINESSES

In 2019, we completed the sale of certain subsidiaries comprising our businesses and operations in Europe, the Middle East and Africa (including Russia) (“EMEA”) and the Pacific Rim, including the corresponding businesses and operations conducted by WAVE (collectively, the “Sale”), to Knauf International GmbH (“Knauf”). In 2022, we recorded a $2.0 million tax benefit related to federal tax statute of limitation closures.

(dollar amounts in millions, except share data)

ARMSTRONG FLOORING, INC. ("AFI")

In 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.

Summarized Financial Information of Discontinued Operations

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

	EMEA and Pacific Rim Businesses	AFI	Total
2022			
Earnings from discontinued businesses before income tax	$ -	$ -	$ -
Income tax benefit	(2.0)	(1.0)	(3.0)
Net earnings from discontinued operations, net of tax	$ 2.0	$ 1.0	$ 3.0
Net earnings from discontinued operations	$ 2.0	$ 1.0	$ 3.0

NOTE 7. ACCOUNTS AND NOTES RECEIVABLE

	December 31, 2024	December 31, 2023
Customer receivables	$ 133.0	$ 102.1
Miscellaneous receivables	4.9	11.8
Less allowance for warranties, discounts and losses	(3.5)	(2.9)
Accounts and notes receivable, net	$ 134.4	$ 111.0

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.

NOTE 8. INVENTORIES

	December 31, 2024	December 31, 2023
Finished goods	$ 60.4	$ 55.1
Goods in process	7.4	5.1
Raw materials and supplies	68.5	66.7
Less LIFO reserves	(26.5)	(22.9)
Total inventories, net	$ 109.8	$ 104.0

Approximately 60% and 62% of our total inventory in 2024 and 2023, 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, 2024	December 31, 2023
U.S. locations	$ 41.8	$ 35.3
Canada locations	2.6	4.0
Total	$ 44.4	$ 39.3

Our U.S. locations 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.

(dollar amounts in millions, except share data)

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.

NOTE 9. OTHER CURRENT ASSETS

	December 31, 2024	December 31, 2023
Prepaid expenses	$ 19.8	$ 15.9
Assets held for sale	-	6.7
Fair value of derivative assets	0.3	1.1
Other	1.4	2.7
Total other current assets	$ 21.5	$ 26.4

As of December 31, 2023, assets held for sale included the land and property, plant and equipment of our idled Mineral Fiber plant in St. Helens, Oregon and the building and related land of an Architectural Specialties design center in Chicago, Illinois, both of which were sold in 2024.

NOTE 10. PROPERTY, PLANT AND EQUIPMENT

	December 31, 2024	December 31, 2023
Land	$ 21.2	$ 31.0
Buildings	294.7	273.3
Machinery and equipment	805.6	713.5
Computer software	86.7	85.1
Construction in progress	50.0	61.7
Less accumulated depreciation and amortization	(659.4)	(598.2)
Net property, plant and equipment	$ 598.8	$ 566.4

NOTE 11. INVESTMENTS IN UNCONSOLIDATED AFFILIATES

The following table presents equity (earnings) loss from our unconsolidated affiliates:

	2024	2023	2022
WAVE	$ (104.3)	$ (89.3)	$ (77.6)
Overcast	0.9	-	-
Equity (earnings) from unconsolidated affiliates, net	$ (103.4)	$ (89.3)	$ (77.6)

As of December 31, 2024 and 2023, our investment in our WAVE joint venture was $22.6 million and $17.4 million, respectively. As of December 31, 2024 our investment in Overcast was $4.6 million.

The following table presents combined condensed financial data for our unconsolidated affiliates:

	December 31, 2024	December 31, 2023
Current assets	$ 111.5	$ 88.9
Non-current assets	98.9	87.2
Current liabilities	33.6	33.0
Non-current liabilities	376.6	363.9

	2024	2023	2022
Net sales	$ 492.7	$ 449.0	$ 458.2
Gross profit	296.9	263.2	231.1
Net earnings	211.1	187.2	163.7

(dollar amounts in millions, except share data)

Information reflected in the preceding table reflects combined financial data for WAVE and Overcast as of and for the year ended December 31, 2024 and financial data for WAVE as of December 31, 2023 and for the years ended 2023 and 2022.

Distributions from WAVE in 2024, 2023 and 2022, were $97.8 million, $96.9 million, and $104.5 million, respectively. We did not receive any distributions from Overcast in 2024.

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 $49.1 million, $47.2 million and $47.3 million for the years ended 2024, 2023 and 2022, respectively.

Our recorded investment in WAVE was higher than our 50% share of the carrying values reported in WAVE's consolidated financial statements by $123.6 million as of December 31, 2024 and $127.9 million as of December 31, 2023. These differences are due to our 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:

	December 31, 2024	December 31, 2023
Property, plant and equipment	$ 0.4	$ 0.4
Other intangibles	92.8	97.1
Goodwill	30.4	30.4
Total	$ 123.6	$ 127.9

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

See Note 26 to the Consolidated Financial Statements for additional information.

NOTE 12. LEASES

The following table presents our lease costs:

	2024	2023	2022
Operating lease cost	$ 10.0	$ 8.5	$ 7.0
Finance lease cost:			
Amortization of leased assets	$ 4.2	$ 3.1	$ 2.4
Interest on lease liabilities	1.4	0.9	0.6
Total finance lease cost	$ 5.6	$ 4.0	$ 3.0

Short-term lease expense and variable lease cost were not material for the years ended December 31, 2024, 2023 and 2022 and are excluded from the table above. As of December 31, 2024, we did not have any material leases that have not yet commenced.

(dollar amounts in millions, except share data)

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

	2024	2023	2022
Cash paid for amounts included in the measurement of lease liabilities			
Operating cash flows from operating leases	$ 9.6	$ 8.0	$ 6.8
Operating cash flows from finance leases	1.3	0.8	0.6
Financing cash flows from finance leases	3.3	2.7	2.2
ROU assets obtained in exchange for lease liabilities			
Operating leases [1]	$ 19.0	$ 15.8	$ 3.9
Finance leases [2]	13.6	12.3	-

(1) During 2024, increases in ROU assets included $13.0 million from the acquisitions of 3form and Zahner and a $4.7 million increase from modifications that did not involve obtaining a new ROU asset. During 2023, increases in ROU assets included a decrease of $1.0 million due to a change in lease classification upon modification and an increase of $0.6 million resulting from modifications that did not involve obtaining a new ROU asset. During 2022, increases in ROU assets included $1.0 million resulting from modifications that did not involve obtaining a new ROU asset. Modifications for all years presented resulted primarily from changes in the terms of existing leases.

(2) During 2024, increases in ROU assets included $8.9 million from the acquisition of Zahner and a $1.1 million decrease from modifications that did not involve obtaining a new ROU asset. During 2023, increases in ROU assets included $8.6 million due to a change in lease classification upon modification for an existing manufacturing facility within our Architectural Specialties segment that had a modified expected lease term of 13 years, in addition to an increase of $3.7 million for a lease modification that did not involve obtaining a new ROU asset.

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

	December 31, 2024	December 31, 2023
Weighted average remaining lease term (in years)		
Operating leases	5.7	4.8
Finance leases	11.4	9.5
Weighted average discount rate		
Operating leases	5.6%	5.7%
Finance leases	5.1%	4.7%

Undiscounted future minimum lease payments as of December 31, 2024, by year and in the aggregate, having non-cancelable lease terms in excess of one year are as follows:

	Operating Leases	Finance Leases
Maturity of lease liabilities		
2025	$ 10.0	$ 5.6
2026	8.7	6.1
2027	7.9	5.2
2028	6.0	3.6
2029	2.7	2.8
Thereafter	9.2	28.0
Total lease payments	44.5	51.3
Less interest	(6.7)	(14.3)
Present value of lease liabilities	$ 37.8	$ 37.0

(dollar amounts in millions, except share data)

NOTE 13. GOODWILL AND INTANGIBLE ASSETS

The following table details amounts related to our goodwill and intangible assets as of December 31, 2024 and 2023:

		December 31, 2024		December 31, 2023	
	Estimated Useful Life	Gross Carrying Amount	Accumulated Amortization	Gross Carrying Amount	Accumulated Amortization
Amortizing intangible assets					
Customer relationships	2-20 years	$ 194.7	$ 163.9	$ 183.6	$ 152.1
Developed technology	10-20 years	114.8	85.9	101.4	84.4
Software	5-7 years	19.7	7.8	15.6	4.6
Trademarks and brand names	3-20 years	23.6	4.3	6.2	3.4
Non-compete agreements	3-5 years	15.9	5.6	6.1	3.8
Trade secrets	15 years	5.3	-	-	-
Other	Various	3.7	0.5	2.8	0.2
Total		$ 377.7	$ 268.0	$ 315.7	$ 248.5
Non-amortizing intangible assets					
Trademarks and brand names	Indefinite	345.3		345.2	
Total intangible assets		$ 723.0		$ 660.9	
Goodwill	Indefinite	$ 203.2		$ 175.5	

The increase in goodwill as of December 31, 2024 compared to December 31, 2023 resulted from the acquisitions of 3form and Zahner, partially offset by foreign exchange movements.

	2024	2023	2022
Amortization expense	$ 19.9	$ 15.3	$ 16.3

The expected annual amortization expense for the years 2025 through 2029 are as follows:

2025	$ 24.0
2026	19.8
2027	12.8
2028	10.6
2029	6.5

NOTE 14. OTHER NON-CURRENT ASSETS

	December 31, 2024	December 31, 2023
Cash surrender value of company-owned life insurance policies	$ 37.6	$ 40.3
Investment in employee deferred compensation plans	11.0	8.3
Fair value of derivative assets	-	1.8
Other	1.5	0.9
Total other non-current assets	$ 50.1	$ 51.3

NOTE 15. ACCOUNTS PAYABLE AND ACCRUED EXPENSES

	December 31, 2024	December 31, 2023
Payables, trade and other	$ 132.4	$ 91.0
Employment costs	42.4	33.6
Current portion of pension and postretirement liabilities	7.2	8.0
Acquisition-related contingent consideration	1.5	-
Other	31.8	27.3
Total accounts payable and accrued expenses	$ 215.3	$ 159.9

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 2022 through 2024, 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, 2024 and 2023, we had $622.9 million and $646.7 million, respectively, of gross state net operating loss ("NOL") carryforwards expiring between 2025 and 2043. As of December 31, 2024 and 2023, we had capital loss carryforwards of $5.6 million that expire between 2025 and 2036.

As of December 31, 2024 and 2023, we had valuation allowances of $36.3 million and $49.1 million, respectively. As of December 31, 2024, our valuation allowance consisted of $27.8 million for state deferred tax assets related to net operating loss carryforwards, $5.6 million for federal and state deferred tax assets related to capital loss carryforwards and $2.9 million for state deferred tax assets related to state tax credits.

We estimate we will need to generate future taxable income of approximately $168.8 million for state income tax purposes during the respective realization periods (ranging from 2025 to 2043) 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 $22.6 million to fully realize our federal capital loss carryforwards before they expire between 2025 and 2026. We estimate we will need to generate capital gain income of $168.1 million to fully realize our state capital loss carryforwards before they expire between 2025 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.

(dollar amounts in millions, except share data)

	December 31, 2024	December 31, 2023
Deferred income tax assets (liabilities)		
Net operating losses	$ 30.0	$ 32.2
Postretirement benefits	11.0	13.1
Pension benefit liabilities	7.3	8.1
Deferred compensation	4.5	6.8
State tax credit carryforwards	3.7	4.4
Capital loss carryforwards	5.6	18.8
Capitalized research expenses	20.5	15.3
Lease liabilities	14.3	9.5
Other	9.9	9.0
Total deferred income tax assets	106.8	117.2
Valuation allowances	(36.3)	(49.1)
Net deferred income tax assets	70.5	68.1
Intangibles	(83.9)	(84.7)
Partnerships and investments	(23.7)	(25.4)
Accumulated depreciation	(87.1)	(87.3)
Prepaid pension costs	(22.5)	(21.6)
Inventories	(3.6)	(4.4)
Lease assets	(15.1)	(9.9)
Other	(1.7)	(1.7)
Total deferred income tax liabilities	(237.6)	(235.0)
Net deferred income tax liabilities	$ (167.1)	$ (166.9)

	2024	2023	2022
Details of taxes			
Earnings from continuing operations before income taxes			
Domestic	$ 342.0	$ 291.9	$ 251.7
Foreign	5.1	6.4	5.9
Total	$ 347.1	$ 298.3	$ 257.6
Income tax expense (benefit):			
Current:			
Federal	$ 64.0	$ 59.8	$ 46.3
Foreign	1.2	1.7	1.3
State	16.3	13.9	11.3
Total current	81.5	75.4	58.9
Deferred:			
Federal	(0.9)	(3.2)	(1.9)
Foreign	(0.1)	(0.2)	(0.2)
State	1.7	2.5	0.9
Total deferred	0.7	(0.9)	(1.2)
Total income tax expense	$ 82.2	$ 74.5	$ 57.7

(dollar amounts in millions, except share data)

The unremitted earnings of our foreign subsidiaries are not permanently reinvested. Accordingly, as of December 31, 2024 and 2023, we have recorded deferred income taxes for foreign withholding taxes of $0.9 million on approximately $18.2 million and $17.5 million of net undistributed earnings of foreign subsidiaries, respectively.

	2024	2023	2022
Reconciliation to U.S. statutory tax rate			
Continuing operations tax expense at statutory rate	$ 72.9	$ 62.6	$ 54.1
State income tax expense, net of federal impact	15.5	13.7	11.0
Expiration of deferred income tax assets	9.3	0.2	0.7
(Decrease) increase in valuation allowances on deferred income tax assets	(12.1)	0.3	(1.7)
Statute closures	(2.7)	(0.6)	(5.1)
Excess tax benefits on share-based compensation	(1.0)	(0.1)	(0.5)
U.S. permanent differences	(0.3)	(2.6)	(0.8)
Other	0.6	1.0	-
Tax expense at effective rate	$ 82.2	$ 74.5	$ 57.7

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 for which we are 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 $24.5 million of Unrecognized Tax Benefits ("UTB") as of December 31, 2024, $11.6 million ($10.5 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 $0.8 million related to state statutes expiring.

We account for all interest and penalties on uncertain income tax positions as income tax expense. We have $2.8 million and $2.3 million of interest and penalties accrued in non-current income tax payable in the Consolidated Balance Sheets as of December 31, 2024 and 2023, respectively.

We had the following activity for UTB's for the years ended December 31, 2024, 2023 and 2022:

	2024	2023	2022
Unrecognized tax benefits balance as of January 1,	$ 26.9	$ 27.3	$ 35.6
Gross change for current-year positions	0.5	0.4	0.4
Increase for prior period positions	0.2	0.2	0.2
Decrease for prior period positions	(0.2)	(0.5)	(1.4)
Decrease due to statute expirations	(2.9)	(0.5)	(7.5)
Unrecognized tax benefits balance as of December 31,	$ 24.5	$ 26.9	$ 27.3

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 U.S. 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 2021, with the exception of our 2018 and 2019 returns, whose statutes of limitations have been extended to November 30, 2025 due to ongoing audits. With few exceptions, the statute of limitations is no longer open for state or non-U.S. income tax examinations for years before 2020. Excluding the statute of limitation extensions for our 2018 and 2019 U.S. federal income tax returns, 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.

(dollar amounts in millions, except share data)

	2024	2023	2022
Other taxes			
Payroll taxes	$ 23.9	$ 20.8	$ 18.3
Property, franchise and capital stock taxes	4.8	5.4	4.5

NOTE 17. DEBT

	December 31, 2024	December 31, 2023
Revolving credit facility (due 2027)	$ 100.0	$ 140.0
Term loan A (due 2027)	427.5	450.0
Principal debt outstanding	527.5	590.0
Unamortized debt financing costs	(2.4)	(3.2)
Long-term debt	525.1	586.8
Less current installments of long-term debt	22.5	22.5
Long-term debt, less current installments	$ 502.6	$ 564.3

We have a $950.0 million variable rate senior secured credit facility, which 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 revolving credit facility and Term Loan A are currently priced at 1.375% over the Secured Overnight Financing Rate ("SOFR"), plus a 10 basis point adjustment. We also have a $25.0 million bi-lateral letter of credit facility. The revolving credit facility and Term Loan A mature in December 2027.

On December 7, 2022, we amended and restated our senior secured credit facility, extending 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 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 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, 2024, 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:

2025	$ 22.5
2026	22.5
2027	482.5

We use 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 companies 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:

	December 31, 2024		
Financing Arrangements	Limit	Used	Available
Bi-lateral facility	$ 25.0	$ 7.7	$ 17.3
Revolving credit facility	150.0	-	150.0
Total	$ 175.0	$ 7.7	$ 167.3

(dollar amounts in millions, except share data)

Other Commitments

In the ordinary course of business, and primarily due to our December 2024 acquisition of Zahner, we provided corporate guarantees and obtained surety bonds in support of underlying contractual commitments to our customers. As of December 31, 2024, $21.9 million of surety bonds is outstanding associated with custom manufacturing projects that were issued by reputable surety providers. In the event of our non-performance, we may be required to reimburse surety providers to cover qualifying financial loss up to the bond amounts. We believe the risk of financial loss associated with our outstanding guarantees and surety bonds is remote and as such, have recorded no liability associated with such commitments on our Consolidated Balance Sheets.

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 $12.7 million in 2024, $10.4 million in 2023 and $8.4 million in 2022.

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.

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 $2.1 million and $2.0 million as of December 31, 2024 and 2023, respectively.

As a result of our acquisition of Zahner, we are required to make regular contributions to a multi-employer defined benefit pension plan (“Multi-Employer Plan”) under the terms of collective bargaining agreements that cover union-represented employees and that expire during 2025. Assets contributed to the Multi-Employer Plan may be used to provide benefits to employees of other participating employers. If a participating employer stops contributing to the Multi-Employer Plan, the unfunded obligations of the plan may be borne by the remaining participating employers. In the event we choose to stop participating in the Multi-Employer Plan, we may be required to pay a withdrawal liability based on the underfunded status of the plan. Because we believe the Multi-Employer Plan is adequately funded at this time, and we have no current intention of withdrawing from the Multi-Employer Plan, we have not recorded a liability associated with this plan on our Consolidated Balance Sheets. Our contributions to the Multi-Employer Plan for the year ended December 31, 2024 were $0.2 million.

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.

	2024	2023
Change in benefit obligations:		
Benefit obligations as of beginning of period	$ 356.5	$ 337.1
Service cost	2.5	2.6
Interest cost	16.9	16.9
Actuarial (gain) loss	(25.1)	13.7
Benefits paid	(31.6)	(13.8)
Benefit obligations as of end of period	$ 319.2	$ 356.5

(dollar amounts in millions, except share data)

	2024	2023
Change in plan assets:		
Fair value of plan assets as of beginning of period	$ 413.4	$ 391.7
Actual return on plan assets	(2.4)	32.7
Employer contributions	2.5	2.8
Benefits paid	(31.6)	(13.8)
Fair value of plan assets as of end of period	$ 381.9	$ 413.4
Funded status	$ 62.7	$ 56.9

	2024	2023
Weighted-average assumptions used to determine benefit obligations at end of period:		
Discount rate	5.68%	5.01%
Rate of compensation increase	3.33%	3.33%
Weighted-average assumptions used to determine net periodic benefit cost for the period:		
Discount rate	5.01%	5.21%
Expected return on plan assets	6.00%	6.50%
Rate of compensation increase	3.33%	3.33%

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 derive 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 6.00% and 6.50% for the years ended December 31, 2024 and 2023, respectively.

The accumulated benefit obligation for the U.S. defined benefit pension plans was $318.1 million and $355.2 million as of December 31, 2024 and 2023, respectively. In 2024, the largest contributor to the net actuarial gain affecting the benefit obligations for the defined benefit pension plans was an increase in discount rate, partially offset by changes in census data. In 2023, the largest contributor to the net actuarial loss affecting the benefit obligations for the defined benefit pension plans was a decrease in discount rate and changes in census data.

	2024	2023
U.S. pension plans with benefit obligations in excess of assets		
RBEP Projected benefit obligation, December 31	$ 25.6	$ 27.7
RBEP Accumulated benefit obligation, December 31	25.6	27.7

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

	2024	2023	2022
Service cost of benefits earned during the period	$ 2.5	$ 2.6	$ 3.7
Interest cost on projected benefit obligation	16.9	16.9	10.5
Expected return on plan assets	(24.3)	(25.0)	(18.4)
Amortization of net actuarial loss	5.2	5.4	4.2
Net periodic pension cost (credit)	$ 0.3	$ (0.1)	$ -

For 2024, 2023 and 2022, actuarial gains and losses were amortized over the remaining life expectancy of plan participants, which was approximately 24 years for 2024, 26 years for 2023 and 26 years for 2022 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.

(dollar amounts in millions, except share data)

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, 2024 and 2023 positions for each asset class:

Asset Class	Target Weight at December 31, 2024	Position as of December 31, 2024	Position as of December 31, 2023
Long duration bonds	90.0%	90.0%	90.0%
Equities, real estate and private equity	10.0%	10.0%	10.0%

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.

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:

	Value as of December 31, 2024			
Description	Level 1	Level 2	Level 3	Total
Collective trust funds - bonds	$ -	$ 342.3	$ -	$ 342.3
Collective trust funds - equities	-	32.0	-	32.0
Cash, other short-term investments and payables, net	(0.5)	4.7	-	4.2
Net assets measured at fair value	$ (0.5)	$ 379.0	$ -	$ 378.5
Investments measured at net asset value as a practical expedient				3.4
Net assets				$ 381.9

	Value as of December 31, 2023			
Description	Level 1	Level 2	Level 3	Total
Collective trust funds - bonds	$ -	$ 371.5	$ -	$ 371.5
Collective trust funds - equities	-	34.3	-	34.3
Cash, other short-term investments and payables, net	(0.3)	3.8	-	3.5
Net assets measured at fair value	$ (0.3)	$ 409.6	$ -	$ 409.3
Investments measured at net asset value as a practical expedient				4.1
Net assets				$ 413.4

The RIP has investments in alternative investment funds as of December 31, 2024 and 2023 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, 2024, there were no restrictions on redemption of these investments.

(dollar amounts in millions, except share data)

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

	Value as of December 31, 2024			
Description	**Fair Value**	**Unfunded Commitments**	**Redemption Frequency**	**Redemption Notice Period**
Real estate	$ 3.4	$ 2.2	Quarterly	60 days

	Value as of December 31, 2023			
Description	**Fair Value**	**Unfunded Commitments**	**Redemption Frequency**	**Redemption Notice Period**
Real estate	$ 4.1	$ 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.

Collective trust funds – equities: Represents collective trust 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 liquidated investment positions 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.

(dollar amounts in millions, except share data)

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 our postretirement benefit pension plans, 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.

	2024	2023
Change in benefit obligations:		
Benefit obligation as of beginning of period	$ 47.6	$ 61.9
Interest cost	2.2	2.9
Plan participants' contributions	1.5	1.7
Actuarial gain	(5.0)	(11.6)
Benefits paid	(6.9)	(7.3)
Benefit obligations as of end of period	$ 39.4	$ 47.6

	2024	2023
Change in plan assets:		
Fair value of plan assets as of beginning of period	$ -	$ -
Employer contributions	5.4	5.6
Plan participants' contributions	1.5	1.7
Benefits paid	(6.9)	(7.3)
Fair value of plan assets as of end of period	$ -	$ -
Funded status	$ (39.4)	$ (47.6)

	2024	2023
Weighted-average discount rate used to determine benefit obligations at end of period	5.59%	4.96%
Weighted-average discount rate used to determine net periodic benefit cost for the period	4.96%	5.13%

In 2024, the largest contributor to the actuarial gains affecting the benefit obligation for the postretirement plans was an update to the per capita claims assumption and an increase in the discount rate, partially offset by updated healthcare cost trend rates. In 2023, the largest contributor to the actuarial gains affecting the benefit obligation for the postretirement plans was an update to the per capita claims assumption and updated healthcare cost trend rates, partially offset by a decrease in discount rate.

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

	2024	2023	2022
Interest cost on accumulated postretirement benefit obligation	$ 2.2	$ 2.9	$ 1.5
Amortization of prior service (credit)	(0.2)	(0.3)	(0.3)
Amortization of net actuarial gain	(8.6)	(5.9)	(2.8)
Net periodic postretirement benefit (credit)	$ (6.6)	$ (3.3)	$ (1.6)

For measurement purposes, an average rate of annual increase in the per capita cost of covered health care benefits of 7.8% for pre-65 retirees and 10.5% for post-65 retirees was assumed for 2024, decreasing ratably to an ultimate rate of 4.5% in 2034.

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	
	2024	2023	2024	2023	2024	2023
Prepaid pension costs	$ 88.3	$ 84.6	$ -	$ -	$ -	$ -
Accounts payable and accrued expenses	(2.9)	(2.7)	(0.2)	(0.1)	(4.1)	(5.2)
Postretirement benefit liabilities	-	-	-	-	(35.3)	(42.4)
Pension benefit liabilities	(22.7)	(25.0)	(1.9)	(1.9)	-	-
Net amount recognized	$ 62.7	$ 56.9	$ (2.1)	$ (2.0)	$ (39.4)	$ (47.6)

(dollar amounts in millions, except share data)

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	
	2024	2023	2024	2023
Net actuarial (loss) gain	$ (168.7)	$ (172.4)	$ 25.4	$ 28.9
Prior service credit	-	-	0.7	0.9
Accumulated other comprehensive (loss) income	$ (168.7)	$ (172.4)	$ 26.1	$ 29.8

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 (1)	Retiree Health and Life Insurance Benefits, Net
2025	$ 20.8	$ 4.1
2026	21.5	4.1
2027	22.3	4.0
2028	23.2	3.7
2029	23.6	3.6
2030 - 2034	122.5	14.9

(1) We were not required and did not make contributions to the RIP during 2024, 2023 or 2022 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 funded by the Company.

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, 2024		December 31, 2023	
	Carrying amount	Estimated fair value	Carrying amount	Estimated fair value
Liabilities, net				
Total long-term debt, including current portion	$ (525.1)	$ (525.1)	$ (586.8)	$ (586.8)
Interest rate swap contracts	(1.5)	(1.5)	(0.4)	(0.4)
Acquisition-related contingent consideration	(3.2)	(3.2)	(1.6)	(1.6)

The carrying amounts of cash and cash equivalents, receivables and accounts payable approximate fair value because of the short-term maturity of these instruments. The fair value estimates of long-term debt are based on data for our Term Loan A debt provided by a major financial institution. The fair value estimates for interest rate swap contracts are estimated with the assistance of an independent, third-party valuation expert and verified by obtaining quotes from major financial institutions. We engaged an independent, third-party valuation specialist to determine the fair value estimates for acquisition-related contingent consideration payable based on performance, which were measured primarily using a Monte Carlo simulation. As of December 31, 2024, $1.5 million of acquisition-related contingent consideration liabilities payable, related to the final achievement of certain financial and performance milestones through December 31, 2024 for the BOK acquisition, was classified as accounts payable and accrued expenses on our Consolidated Balance Sheet and was equal to fair value as milestone achievements were known. As of December 31, 2024 and 2023, acquisition-related contingent consideration liabilities of $1.7 and $1.6 million, respectively, related to future financial and performance milestones for the BOK and Insolcorp acquisitions and were classified as long-term liabilities on our Consolidated Balance Sheets.

(dollar amounts in millions, except share data)

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, 2024		December 31, 2023	
	Fair value based on		Fair value based on	
	Other observable inputs	Other unobservable inputs	Other observable inputs	Other unobservable inputs
	Level 2	Level 3	Level 2	Level 3
Liabilities, net:				
Interest rate swap contracts	$ (1.5)	$ -	$ (0.4)	$ -
Acquisition-related contingent consideration	-	(1.7)	-	(1.6)

Acquisition-related contingent consideration of $1.7 million and $1.6 million as of December 31, 2024 and 2023, respectively, 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 Earnings and Comprehensive Income.

The following table summarizes the weighted-average of the significant unobservable inputs as of December 31, 2024:

	BOK	Insolcorp
Unobservable input		
Volatility	25.5%	23.4%
Discount rates	4.2%	4.3%

The changes in fair value of the acquisition-related contingent consideration liabilities for the years ended December 31, 2024, 2023 and 2022 were as follows:

	Fair Value of Contingent Consideration
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
Cash consideration paid	(15.2)
Acquisition date fair value of BOK contingent consideration	0.8
Acquisition date fair value of Insolcorp contingent consideration	0.7
Loss related to change in fair value of contingent consideration	0.1
Balance as of December 31, 2023	$ 1.6
Loss related to change in fair value of contingent consideration	1.6
Balance as of December 31, 2024	$ 3.2

As of December 31, 2024 and 2023, the acquisition-related contingent consideration liabilities represented the additional cash consideration payable related to our acquisition of BOK and Insolcorp that will be paid upon the achievement of certain financial and performance milestones.

During 2024, the change in fair value was due to changes in BOK actual and projected results over the earn out period and changes in Insolcorp projected results over the earn out period. During 2023, the change in fair value was due to changes in Monte Carlo simulation inputs for BOK. During 2022, the change in fair value was due to changes in actual and projected results over the earn out period for TURF Design, Inc. ("Turf"), acquired in July 2020.

During 2023, we paid $15.2 million of additional cash consideration for the acquisition of Turf, which represented the final achievement of certain financial and performance milestones through December 31, 2022. During 2022, we paid $8.6 million of additional cash consideration for the acquisitions of Moz Design, Inc. ("Moz"), acquired in October 2020, and Turf, which represented the final achievement of certain financial and performance milestones through December 31, 2021.

(dollar amounts in millions, except share data)

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 use interest rate swaps to minimize the fluctuations in earnings caused by interest rate volatility. In March 2023, we amended our interest rate swaps outstanding in accordance with ASU 2020-04, "Facilitation of the Effects of Reference Rate Reform on Financial Reporting," changing our hedged interest rate from the discontinued London Interbank Offered Rate, or LIBOR, to SOFR.

These swaps are designated as cash flow hedges against changes in the SOFR for a portion of our variable rate debt. The following table summarizes our interest rate swaps as of December 31, 2024:

Coverage Period		Notional Amount	Risk Coverage	Trade Date
March 2021 to March 2025	$	100.0	USD-SOFR	November 28, 2018
November 2023 to December 2025	$	50.0	USD-SOFR	October 23, 2023
March 2024 to June 2026	$	50.0	USD-SOFR	March 25, 2024
November 2023 to December 2026	$	50.0	USD-SOFR	October 10, 2023
March 2024 to June 2027	$	50.0	USD-SOFR	March 27, 2024
November 2023 to November 2027	$	50.0	USD-SOFR	September 29, 2023
June 2024 to June 2028	$	50.0	USD-SOFR	June 26, 2024

Under the terms of the interest rate swap with a November 28, 2018 trade date above, we pay a fixed rate monthly and receive a floating rate based on SOFR, inclusive of a 0% floor. Under the terms of all remaining interest rate swaps above, we pay a fixed rate monthly and receive a floating rate based on SOFR.

(dollar amounts in millions, except share data)

Financial Statement Impacts

The following tables detail amounts related to our derivatives as of December 31, 2024 and 2023. We did not have any derivative assets or liabilities not designated as hedging instruments as of December 31, 2024 or 2023. The derivative asset and liability amounts below are shown gross and have not been netted.

	Derivative Assets			Derivative Liabilities		
		Fair Value			Fair Value	
	Balance Sheet Location	December 31, 2024	December 31, 2023	Balance Sheet Location	December 31, 2024	December 31, 2023
Interest rate swap contracts	Other current assets	$ 0.3	$ 1.1	Accounts payable and accrued expenses	$ 0.3	$ 0.1
Interest rate swap contracts	Other non-current assets	-	1.8	Other long-term liabilities	1.5	3.2

	Amount of Gain (Loss) Recognized in AOCI			Location of Gain (Loss) Reclassified from AOCI into Net Earnings	Gain Reclassified from AOCI into Net Earnings		
	2024	2023	2022		2024	2023	2022
Derivatives in cash flow hedging relationships							
Interest rate swap contracts	$ 3.3	$ (0.6)	$ 26.9	Interest expense	$ 5.5	$ 11.5	$ 2.0

As of December 31, 2024, the amount of existing losses in AOCI expected to be recognized in earnings over the next twelve months was $0.4 million.

NOTE 21. OTHER LONG-TERM LIABILITIES

	December 31, 2024	December 31, 2023
Long-term deferred compensation arrangements	$ 12.9	$ 12.3
Fair value of derivative liabilities	1.5	3.2
Long-term environmental liabilities	4.2	0.5
Environmental insurance recoveries received in excess of cumulative expenses incurred	-	2.6
Acquisition-related contingent consideration	1.7	1.6
Other	8.1	6.6
Total other long-term liabilities	$ 28.4	$ 26.8

NOTE 22. SHARE-BASED COMPENSATION PLANS

The 2022 Equity and Cash Incentive Plan ("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, and expires on June 15, 2032, after which time no further awards may be made. As of December 31, 2024, 2,427,008 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 and expires on July 8, 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, 2024, 125,310 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, 2024, 8,903 shares were available for future grants under the 2020 Inducement Plan. As of December 31, 2024 and 2023 there were no shares outstanding under the 2020 Inducement Plan.

(dollar amounts in millions, except share data)

The following table presents stock option activity for the year ended December 31, 2024:

	Number of shares (thousands)	Weighted-average exercise price
Option shares outstanding, December 31, 2023	6.2	$ 48.86
Option shares exercised	(6.2)	$ 48.86
Option shares outstanding, December 31, 2024	-	$ -
Option shares exercisable, vested and expected to vest, December 31, 2024	-	$ -

The following table presents information related to stock option exercises:

	2024	2023	2022
Total intrinsic value of stock options exercised	$ 0.3	$ 1.3	$ 1.3
Cash proceeds received from stock options exercised	1.4	0.2	1.8
Tax deduction realized from stock options exercised	0.1	0.3	0.1

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.

In 2024 we also granted non-vested stock awards in the form of Restricted Stock Units ("RSUs") and Performance Stock Units ("PSUs"). A summary of the 2024 activity related to the RSUs and PSUs is as follows:

	Non-Vested Stock Awards			
	RSUs		PSUs	
	Number of shares (thousands)	Weighted-average fair value at grant date	Number of shares (thousands)	Weighted-average fair value at grant date
December 31, 2023	205.4	$ 75.56	308.5	$ 98.44
Granted	68.8	124.10	65.7	140.44
Performance adjustments	-	-	(0.2)	(102.16)
Vested	(33.7)	(82.29)	(103.9)	(104.75)
Forfeited	(8.7)	(89.80)	(9.1)	(100.83)
December 31, 2024	231.8	$ 88.46	261.0	$ 108.09

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 prescribed service period is fulfilled and 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.

RSUs and PSUs 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 2024 and 2023, we granted 31,118 and 48,073 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.

	2024	2023
Weighted-average grant date fair value of market-based PSUs granted (dollars per award)	$ 164.22	$ 121.69
Assumptions		
Risk-free rate of return	4.4%	4.5%
Expected volatility	27.7%	38.7%
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 for 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.

(dollar amounts in millions, except share data)

As of December 31, 2024 and 2023, there were 31,472 and 53,938 RSUs, respectively, outstanding under the 2016 Directors Stock Unit Plan not reflected in the non-vested stock awards table above. In 2024 and 2023, we granted 7,041 and 13,086 RSUs, respectively, to non-employee directors. These awards generally have a vesting period of one year, and as of December 31, 2024 and 2023, 24,431 and 40,852 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 $18.3 million ($13.7 million net of tax benefit) in 2024, $18.8 million ($14.1 million net of tax benefit) in 2023, and $14.3 million ($10.8 million net of tax benefit) in 2022.

As of December 31, 2024, there was $23.1 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 1.8 years.

NOTE 23. EMPLOYEE COSTS

	2024	2023	2022
Wages, salaries and incentive compensation	$ 320.2	$ 282.1	$ 259.7
Payroll taxes	23.9	20.8	18.3
Defined contribution and defined benefit pension plan expense, net	13.1	10.4	8.5
Insurance and other benefit costs	37.0	32.5	29.9
Share-based compensation	18.3	18.8	14.3
Total	$ 412.5	$ 364.6	$ 330.7

NOTE 24. SHAREHOLDERS' EQUITY

Common Stock Repurchase Plan

On July 29, 2016, our Board of Directors approved a share repurchase program authorizing us to repurchase up to $150.0 million of our outstanding shares of common stock (the "Program"). Since inception of the Program, we have been authorized to repurchase up to an aggregate of $1,700.0 million of our outstanding shares of common stock through December 31, 2026. We had $661.8 million remaining under the Board's repurchase authorization as of December 31, 2024.

Repurchases of our common stock 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 2024, we repurchased 0.5 million shares under the Program for a total cost of $55.0 million, excluding commissions and taxes, or an average price of $119.03 per share. Since inception, we have repurchased 14.6 million shares under the Program for a total cost of $1,038.2 million, excluding commissions and taxes, or an average price of $70.89 per share.

Dividends

In February, April and July 2024, our Board of Directors declared $0.28 per share quarterly dividends, which were paid to shareholders in March, May and August 2024. In October 2024, our Board of Directors declared a $0.308 per share quarterly dividend, which was paid to shareholders in November 2024. On February 19, 2025, our Board of Directors declared a $0.308 per share quarterly dividend to be paid in March 2025.

(dollar amounts in millions, except share data)

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, 2024	December 31, 2023
Foreign currency translation adjustments	$ (2.2)	$ 1.0
Derivative (loss) gain, net	(1.1)	0.5
Pension and postretirement adjustments	(106.9)	(106.2)
Accumulated other comprehensive (loss)	$ (110.2)	$ (104.7)

The amounts and related tax effects allocated to each component of other comprehensive income (loss) for 2024, 2023, and 2022 are presented in the tables below.

	Pre-tax Amount	Tax (Expense) Benefit	After-tax Amount
2024			
Foreign currency translation adjustments	$ (3.9)	$ 0.7	$ (3.2)
Derivative (loss), net	(2.2)	0.6	(1.6)
Pension and postretirement adjustments	(0.7)	-	(0.7)
Total other comprehensive (loss)	$ (6.8)	$ 1.3	$ (5.5)

	Pre-tax Amount	Tax (Expense) Benefit	After-tax Amount
2023			
Foreign currency translation adjustments	$ 0.5	$ -	$ 0.5
Derivative (loss), net	(12.1)	3.1	(9.0)
Pension and postretirement adjustments	5.2	(1.3)	3.9
Total other comprehensive (loss)	$ (6.4)	$ 1.8	$ (4.6)

	Pre-tax Amount	Tax Benefit (Expense)	After-tax Amount
2022			
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	$ 13.5	$ (4.0)	$ 9.5

(dollar amounts in millions, except share data)

The following table summarizes the activity, by component, related to the change in AOCI for December 31, 2024 and 2023:

	Foreign Currency Translation Adjustments		Derivative (Loss) Gain [1]		Pension and Postretirement Adjustments [1]		Total Accumulated Other Comprehensive (Loss) Income [1]	
Balance, December 31, 2022	$	0.5	$	9.5	$	(110.1)	$	(100.1)
Other comprehensive income (loss) before reclassifications, net of tax (expense) benefit of $-, $0.2, ($1.5) and ($1.3)		0.5		(0.4)		4.5		4.6
Amounts reclassified from accumulated other comprehensive (loss)		-		(8.6)		(0.6)		(9.2)
Net current period other comprehensive income (loss)		0.5		(9.0)		3.9		(4.6)
Balance, December 31, 2023		1.0		0.5		(106.2)		(104.7)
Other comprehensive (loss) income before reclassifications, net of tax benefit (expense) of $0.7, ($0.8), ($0.8) and ($0.9)		(3.2)		2.5		2.1		1.4
Amounts reclassified from accumulated other comprehensive (loss)		-		(4.1)		(2.8)		(6.9)
Net current period other comprehensive (loss)		(3.2)		(1.6)		(0.7)		(5.5)
Balance, December 31, 2024	$	(2.2)	$	(1.1)	$	(106.9)	$	(110.2)

(1) Amounts are net of tax and include our 50% share of AOCI components from our WAVE joint venture.

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

	Amounts Reclassified from Accumulated Other Comprehensive (Loss)				Affected Line Item in the Consolidated Statements of Earnings and Comprehensive Income
	2024		2023		
Derivative Adjustments:					
Interest rate swap contracts, before tax	$	(5.5)	$	(11.5)	Interest expense
Tax impact		1.4		2.9	Income tax expense
Total (income), net of tax		(4.1)		(8.6)	
Pension and Postretirement Adjustments:					
Prior service credit amortization		(0.2)		(0.3)	Other non-operating (income), net
Amortization of net actuarial (gain)		(3.4)		(0.5)	Other non-operating (income), net
Total (income), before tax		(3.6)		(0.8)	
Tax impact		0.8		0.2	Income tax expense
Total (income), net of tax		(2.8)		(0.6)	
Total reclassifications for the period	$	(6.9)	$	(9.2)	

NOTE 25. SUPPLEMENTAL FINANCIAL INFORMATION

	2024		2023		2022	
Selected operating expense						
Maintenance and repair costs	$	52.4	$	48.3	$	42.7
Product innovation costs		15.7		14.5		14.9
Advertising costs		9.1		8.9		9.2
Other non-operating (income), net						
Interest income	$	(3.8)	$	(3.5)	$	(0.5)
Pension and postretirement (credits)		(8.7)		(5.9)		(5.3)
Other		(0.1)		(0.5)		(0.2)
Total	$	(12.6)	$	(9.9)	$	(6.0)

NOTE 26. RELATED PARTIES

For some customers, we purchase grid products from WAVE for resale to customers. The total amount of these purchases was $34.4 million in 2024, $32.6 million in 2023 and $34.5 million in 2022. We also provide certain selling, promotional and administrative processing services to WAVE for which we receive reimbursement. Those services amounted to $26.5 million in 2024, $27.8 million in 2023, and $29.1 million in 2022. The net amount due to WAVE from us for all of our relationships was $3.8 million as of December 31, 2024 and $1.9 million as of December 31, 2023. 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.

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, Georgia site and the Elizabeth City, North Carolina 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 into 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 recorded as reductions to cost of goods sold and SG&A expenses, reflecting the same income statement categories where environmental expenditures were historically recorded. From 2020 through the third quarter of 2024, 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. Excess recoveries are released to offset additional reserves for potential liabilities incurred on the respective environmental sites. As of December 31, 2023 insurance recoveries in excess of cumulative expenses were $2.6 million. 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 and separation with AFI 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, Georgia, 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. AWI has been conducting operation and maintenance activities of the completed remedy since 2017 consistent with the approved Post-Removal Control Plan.

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 a Remedial Investigation and Feasibility Study ("RI/FS") with respect to the remainder of the Superfund site, which included the other landfill on our property, as well as areas on and adjacent to our property and Rocky Creek ("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 an 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 a Site Characterization Summary Report ("SCSR") for Operable Unit 2 to the EPA. The purpose of the SCSR was to demonstrate that the available data for Operable Unit 2 was adequate for the risk assessment and for the development of remedial action objectives. In the second half of 2022, the EPA and the PRPs agreed to separate all non-groundwater aspects of the site; the groundwater investigation is ongoing. In August 2022, the PRPs submitted a Human Health Baseline Risk Assessment to the EPA, and in December 2022, the PRPs submitted a final Baseline Ecological Risk Assessment for all non-groundwater aspects of Operable Unit 2 to the EPA. Both risk assessments served as exhibits to the Remedial Investigation Report ("RIR"), which the EPA approved in July 2023.

Based on findings in the RIR, the PRPs developed a draft Feasibility Study ("FS") to identify and evaluate potential remedial alternatives for all non-groundwater elements of Operable Unit 2. The draft FS was submitted to the EPA in August 2023. The EPA and the State of Georgia provided comments in October 2023 and a revised FS was submitted in November 2023. The EPA conditionally approved the FS in April 2024 and issued a Proposed Remedial Action Plan ("Proposed Plan") for the non-groundwater elements at the site in May 2024. The EPA held a public meeting in May 2024 to explain the Proposed Plan and start the thirty-day period for public comment, which closed on June 30, 2024. The EPA's Proposed Plan included a total cost estimate for the non-groundwater elements at the site of approximately $8 million. In August 2024, the EPA signed the Record of Decision, selecting the remedy outlined in the Proposed Plan. The portion of these remediation costs that AWI will bear for all non-groundwater elements of Operable Unit 2 will not be known until the PRPs resolve the final allocation of costs.

It is probable that we will incur field investigation, engineering and oversight costs associated with designing and implementing the remedy for all non-groundwater elements of Operable Unit 2 and for completing an RI/FS for all groundwater elements of Operable Unit 2 (now designated "Operable Unit 3" by the EPA). We may also ultimately incur costs in remediating contamination discovered during the RI/FS for Operable Unit 3 and 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, which became Armstrong Wood Products, Inc. ("AWP"), and is now known as AHF Products, LLC. 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 an RI/FS work plan for the site in August 2011. In January 2014, we submitted draft RI 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 U.S. on behalf of the Navy for the remedial design and remedial action for the interim remedy. Because the U.S. does not conduct work as a PRP at Superfund sites, similar to the 2007 agreement, the U.S. 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 ("RDWP") 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 EPA approved the revised RDWP in February 2023 and in June 2023, the parties submitted a Pre-Design Investigation Work Plan. The EPA provided comments on the Pre-Design Investigation Work Plan in November 2023 and the revised document was submitted to the EPA in December 2023. In March 2024, the EPA issued a conditional approval of the Pre-Design Investigation Work Plan, subject to the Company and Paramount addressing the EPA comments on a component of the Work Plan within 60 days. In May 2024 and August 2024, AWI and Paramount submitted revisions to the Pre-Design Investigation Work Plan to address additional comments received from the EPA. In December 2024, the EPA approved the Pre-Design Investigation Work Plan and related Quality Assurance Project Plan, allowing for the start of the Pre-Design Investigation, which will likely commence in March 2025. The current estimate of future liability at this site includes only our estimated share of the costs of implementing the interim remedial action under the IROD. 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 one 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 $4.6 million and $0.5 million as of December 31, 2024 and 2023, respectively, were recorded for environmental matters that we consider probable and for which a reasonable estimate of the probable liability could be made. As of December 31, 2024 and 2023, $4.2 million and $0.5 million, respectively, of environmental liabilities were reflected within other long-term liabilities on the Consolidated Balance Sheets. As of December 31, 2024, $0.4 million of environmental liabilities were reflected within accounts payable and accrued expenses on the Consolidated Balance Sheets. During 2024, 2023 and 2022, we recorded $4.5 million, $0.5 million, and $1.3 million, respectively, of additional reserves for potential environmental liabilities. As noted above, expenses associated with the additional reserves recorded in 2023 and 2022 were offset through the release of a portion of the balance of insurance recoveries in excess of cumulative expenses. During 2024, we recorded $4.5 million of additional reserves for potential environmental liabilities, of which, $2.6 million was offset through a release of our remaining environmental insurance recoveries in excess of cumulative expenses, and $1.9 million was recorded as a component of SG&A expenses on our Consolidated Statements of Earnings and Comprehensive Income. 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 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 to earnings attributable to common shares used in our basic and diluted Earnings (Loss) Per Share ("EPS") calculations for the years ended December 31, 2024, 2023 and 2022. EPS components may not add due to rounding.

	2024	2023	2022
Earnings from continuing operations	$ 264.9	$ 223.8	$ 199.9
(Earnings) allocated to participating vested share awards	-	(0.1)	(0.3)
Earnings from continuing operations attributable to common shares	$ 264.9	$ 223.7	$ 199.6

The following table is a reconciliation of basic shares outstanding to diluted shares outstanding for the years ended December 31, 2024, 2023 and 2022 (shares in millions):

	2024	2023	2022
Basic shares outstanding	43.7	44.7	46.3
Dilutive effect of common stock equivalents	0.3	0.1	0.1
Diluted shares outstanding	44.0	44.8	46.4

Anti-dilutive stock awards excluded from the computation of dilutive EPS for 2024, 2023 and 2022 were 9,052, 46,846 and 19,134, respectively.

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, 2024. 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, 2024 that have materially affected or are reasonably likely to materially affect our 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

Trading Arrangements of Directors and Executive Officers

During the three months ended December 31, 2024, no director or officer of the Company adopted or terminated a "Rule 10b5-1 trading arrangement" or "non-Rule 10b5-1 trading arrangement," as each term is defined in item 408(a) of Regulation S-K.

ITEM 9C. DISCLOSURE REGARDING FOREIGN JURISDICTIONS THAT PREVENT INSPECTIONS

Not applicable.

PART III

ITEM 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

Information regarding individuals who serve as our executive officers required by Item 10 is incorporated by reference to the section entitled "Executive Officers" in the Company's proxy statement for its 2025 annual meeting of shareholders to be filed no later than April 30, 2025.

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 https://investors.armstrongworldindustries.com/governance/governance-documents/default.aspx 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 "Investor Relations" page of our website. There were no waivers or exemptions from the Code of Business Conduct in 2024 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 2025 annual meeting of shareholders to be filed no later than April 30, 2025.

Insider Trading Policy

We have adopted an insider trading policy (the "Insider Trading Policy") governing the purchase, sale, and/or other dispositions of Company securities by our employees, officers, directors, consultants, agents, contractors, temporary workers, and the Company itself. We believe the Insider Trading Policy is reasonably designed to promote compliance with relevant insider trading laws, rules and regulations, and any listing standards applicable to us. A copy of the Insider Trading Policy is filed with this Annual Report on Form 10-K as Exhibit 19.

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," "2024 Summary Compensation Table," "Grants of Plan-Based Awards," "Outstanding Equity Awards at Fiscal Year-End," "Options Exercised and Stock Vested," "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 2025 annual meeting of shareholders to be filed no later than April 30, 2025.

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 2025 annual meeting of shareholders to be filed no later than April 30, 2025.

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 2025 annual meeting of shareholders to be filed no later than April 30, 2025.

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 2025 annual meeting of shareholders to be filed no later than April 30, 2025.

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 2024 Annual Report on Form 10-K is listed in the "Index to Financial Statements and Schedules" on Page 34.

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, 2024, 2023, and 2022 (filed herewith as Exhibit 99.1).

3. The following exhibits are filed as part of this 2024 Annual Report on Form 10-K:

Exhibit No.	Description
3.1	Amended and Restated Articles of Incorporation of Armstrong World Industries, Inc. are incorporated by reference from the Quarterly 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 July 30, 2024, 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	Trademark License Agreement, dated as of April 1, 2016, by and between Armstrong World Industries, Inc., AWI Licensing LLC and Armstrong Flooring, Inc. and subsequently partially transferred to AHF Products in North America, to Zhejiang GIMIG Tech Co., Ltd. in China and to Braeside Mills Investments Pty Ltd in Australia/New Zealand, is incorporated by reference from the Current Report on Form 8-K filed on April 4, 2016, wherein it appeared as Exhibit 10.4.
10.4	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.
10.5	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.
10.6	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.*
10.7	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.*
10.8	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.*

10.9	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.*‡
10.10	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.*
10.11	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.*
10.12	Nonqualified Deferred Compensation Plan effective January 2005, as amended July 23, 2010 and January 1, 2014.*†
10.13	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.*
10.14	Form of Long-Term Performance-Based Restricted Stock Unit Grant for 2022 under the 2022 Equity and Cash Incentive Plan, is incorporated by reference from the Annual Report on Form 10-K filed on February 21, 2023, wherein it appeared as Exhibit 10.17.*
10.15	Form of Long-Term Time-Based Restricted Stock Unit Grant for 2022 under the 2022 Equity and Cash Incentive Plan, is incorporated by reference from the Annual Report on Form 10-K filed on February 21, 2023, wherein it appeared as Exhibit 10.18.*
10.16	Form of Long-Term Performance-Based Restricted Stock Unit Grant for 2023 and 2024 under the 2022 Equity and Cash Incentive Plan.*†
10.17	Form of Long-Term Time- Based Restricted Stock Unit Grant for 2023 and 2024 under the 2022 Equity and Cash Incentive Plan.*†
10.18	Form of 2023 Long-Term Time-Based Restricted Stock Unit Grant—Tier 1 (CEO) under the Armstrong World Industries, Inc. Equity and Cash Incentive Plan is incorporated by reference from the Current Report on Form 8-K filed on May 2, 2023, wherein it appeared as Exhibit 10.1.*
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, August 5, 2010 and April 29, 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 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.*
10.22	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.*
10.23	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.*
10.24	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.*
10.25	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.*
10.26	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.*
10.27	Offer Letter to Christopher Calzaretta dated June 9, 2022, is incorporated by reference from the Annual Report on Form 10-K filed on February 21, 2023, wherein it appeared as Exhibit 10.28.*
10.28	Offer Letter to Monica Maheshwari dated January 20, 2023, in incorporated by reference from the Annual Report on Form 10-K filed on February 20, 2024 wherein it appeared as Exhibit 10.30.*

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.*
10.31	Release Agreement with Monica Maheshwari dated February 20, 2024.* †
10.32	Offer Letter to Dawn Kirchner-King date March 22, 2024.*†
10.33	Offer Letter to Jill Crager Dated November 14, 2021.*†
14	The Armstrong Code of Business Conduct.†
19	Trading in Company Securities By Employees, Officers and Directors.*†
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-14(a) or 15d-14(a) of the Securities Exchange Act.†
31.2	Certification of Chief Financial Officer required by Rule 13a-14(a) or 15d-14(a) 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.††
97	Armstrong World Industries, Inc. Incentive Compensation Recoupment Policy is incorporated by reference from the Annual Report on Form 10-K, filed on February 20, 2024, wherein it appeared as Exhibit 97.*
99.1	Worthington Armstrong Venture consolidated financial statements as of December 31, 2024 and 2023 and for the years ended December 31, 2024, 2023 and 2022.†
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, 2024 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 25, 2025

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.

Signature	Title	Date
/s/ Victor D. Grizzle Victor D. Grizzle	Director, President and Chief Executive Officer (Principal Executive Officer)	February 25, 2025
/s/ Christopher P. Calzaretta Christopher P. Calzaretta	Senior Vice President and Chief Financial Officer (Principal Financial Officer)	February 25, 2025
/s/ James T. Burge James T. Burge	Vice President and Controller (Principal Accounting Officer)	February 25, 2025
/s/ Richard D. Holder Richard D. Holder	Director	February 25, 2025
/s/ Barbara L. Loughran Barbara L. Loughran	Director	February 25, 2025
/s/ William H. Osborne William H. Osborne	Director	February 25, 2025
/s/ Wayne R. Shurts Wayne R. Shurts	Director	February 25, 2025
/s/ Roy W. Templin Roy W. Templin	Director	February 25, 2025
/s/ Cherryl T. Thomas Cherryl T. Thomas	Director	February 25, 2025

SCHEDULE II

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

	Balance at beginning of year	Additions charged to earnings	Deductions	Balance at end of year
2022				
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
2023				
Provision for bad debts	$ 0.4	$ 0.4	$ (0.4)	$ 0.4
Provision for discounts	2.1	26.4	(26.4)	2.1
Provision for warranties	0.7	5.4	(5.7)	0.4
Provision for inventory obsolescence	0.3	-	(0.3)	-
2024				
Provision for bad debts	$ 0.4	$ 1.8	$ (1.4)	$ 0.8
Provision for discounts	2.1	28.7	(28.8)	2.0
Provision for warranties	0.4	5.8	(5.5)	0.7
Provision for inventory obsolescence	-	0.7	(0.4)	0.3

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Forward-Looking Statements

Certain information in this report and in our other public documents contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995, including without limitation, those relating to future financial and operational results and market and broader economic conditions. 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," "target," "predict," "may," "will," "would," "could," "should," "seek,"* 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 Form 10-K and Form 10-Q filed with the U.S. Securities and Exchange Commission ("SEC"), including our annual report for the year ended December 31, 2024. 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 in the United States (GAAP) financial measures within the meaning of U.S. Securities and Exchange Commission 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*. All dollar and shares outstanding figures below are in millions, except per share data.

Adjusted EBITDA Reconciliation

Year Ended December 31	2020	2021	2022	2023	2024
Net (loss) earnings	($99)	$183	$203	$224	$265
Less: Net (loss) earnings from discontinued operations	(15)	(2)	3	-	-
(Loss) earnings from continuing operations	($84)	$185	$200	$224	$265
Add: Income tax (benefit) expense	(43)	57	58	75	82
(Loss) earnings from continuing operations before income taxes	($127)	$243	$258	$298	$347
Add: Interest/other income and expense, net	382	17	21	25	27
Operating Income	$255	$260	$279	$324	$374
Add: RIP expense[1]	6	5	4	3	2
Add: Cost reduction initiatives and other	-	-	-	3	-
(Less)/Add: Net environmental (recoveries) expenses	(6)	-	-	-	2
Add: Charitable contribution – AWI Foundation[2]	10	-	-	-	-
(Less)/Add: (Gain) loss on sales of fixed assets, net[3]	(21)	-	-	-	1
Add: Acquisition-related impacts[4]	3	10	19	11	4
Adjusted Operating Income	$246	$275	$301	$340	$383
Add: Depreciation and amortization	84	97	84	89	103
Adjusted EBITDA	$330	$372	$385	$430	$486

[1] 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.

[2] Endowment level donation to the AWI Foundation.

[3] 2024 includes the impact of a loss on sale of an undeveloped parcel of land adjacent to our corporate headquarters, partially offset by a gain on sale of our idled Mineral Fiber plant in St. Helens, Oregon. 2020 includes the impact of a gain on sale of our idled China plant facility.

[4] Represents the impact of acquisition-related adjustments for the fair value of acquired inventory and deferred revenue, contingent third-party professional fees, changes in fair value of contingent consideration, deferred compensation and restricted stock expenses.

Adjusted Diluted EPS Reconciliation

Year Ended December 31	2020	2021	2022	2023	2024
Net (loss) earnings	($99)	$183	$203	$224	$265
Less: Net (loss) earnings from discontinued operations	(15)	(2)	3	-	-
(Loss) earnings from continuing operations	($84)	$185	$200	$224	$265
(Less)/Add: Income tax (benefit) expense	(43)	57	58	75	82
(Loss) earnings from continuing operations before income taxes	($127)	$243	$258	$298	$347
Add/(Less): RIP expense (credit)[1]	368	-	(1)	(1)	(1)
(Less)/Add: Net environmental (recoveries) expenses	(6)	-	-	-	2
Add: Cost reduction initiatives and other	-	-	-	3	-
(Less)/Add: (Gain) loss on sales of fixed assets, net[2]	(21)	-	-	-	1
Add: Accelerated depreciation from St. Helen's facility	3	-	-	-	-
Add: Charitable contribution – AWI Foundation[3]	10	-	-	-	-
Add: Acquisition-related impacts[4]	3	10	19	11	4
Add: Acquisition-related amortization[5]	7	21	8	6	11
Adjusted earnings from continuing operations before income taxes	$236	$274	$283	$318	$364
(Less): Adjusted income tax expense[6]	(56)	(65)	(63)	(79)	(86)
Adjusted earnings from continuing operations	$180	$209	$220	$238	$277
Diluted shares outstanding[7]	48.2	47.9	46.4	44.8	44.0
Tax Rate	24%	24%	22%	25%	24%
Per Diluted Share from continuing operations	**2020**	**2021**	**2022**	**2023**	**2024**
As Reported	($1.76)	$3.86	$4.30	$4.99	$6.02
Adjusted	$3.74	$4.36	$4.74	$5.32	$6.31

[1] U.S. Retirement Income Plan ("RIP") expense (credit) represents the entire actuarial net periodic pension expense (credit) 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.

[2] 2024 includes the impact of a loss on sale of an undeveloped parcel of land adjacent to our corporate headquarters, partially offset by a gain on sale of our idled Mineral Fiber plant in St. Helens, Oregon. 2020 includes the impact of a gain on sale of our idled China plant facility.

[3] Endowment level donation to the AWI Foundation.

[4] Represents the impact of acquisition-related adjustments for the fair value of acquired inventory and deferred revenue, contingent third-party professional fees, changes in fair value of contingent consideration, deferred compensation and restricted stock expenses.

[5] Represents the intangible amortization related to acquired entities, including customer relationships, developed technology, software, trademarks and brand names, non-compete agreements and other intangibles.

[6] Adjusted income tax expense is calculated using the tax rate multiplied by the adjusted earnings from continuing operations before income taxes.

[7] 2020 dilutive shares outstanding include anti-dilutive common stock equivalents which are excluded from U.S. GAAP accounting.

Adjusted Free Cash Flow Reconciliation

Year Ended December 31	2020	2021	2022	2023	2024
Net cash provided by operating activities	$219	$187	$182	$234	$267
Net cash (used for) provided by investing activities	($141)	($14)	$28	($10)	($79)
Net cash provided by operating and investing activities	$78	$173	$211	$223	$188
Add: Acquisitions, net	165	1	3	27	129
(Less)/Add: (Proceeds) payments related to sale of international, net[1]	(20)	12	-	-	-
(Less)/Add: Net environmental (recoveries) expenses	(12)	(1)	1	1	-
Add: Net payments to WAVE for portion of proceeds from sale of international business	13	-	-	-	-
(Less): Proceeds from sales of facilities[2]	(22)	-	-	-	(24)
Add: Charitable contribution - AWI Foundation[3]	10	-	-	-	-
Add: Arktura deferred compensation[4]	-	5	5	8	6
Add: Contingent consideration in excess of acquisition-date fair value[5]	-	-	2	5	-
Adjusted Free Cash Flow	$212	$190	$221	$263	$298

[1] Includes related income tax payments for 2020.

[2] 2024 includes proceeds related to the sale of an Architectural Specialties design center, our idled Mineral Fiber plant in St. Helens, Oregon and undeveloped land adjacent to our corporate headquarters. 2020 includes proceeds related to the sale of our idled China plant facility.

[3] Endowment level donation to the AWI Foundation.

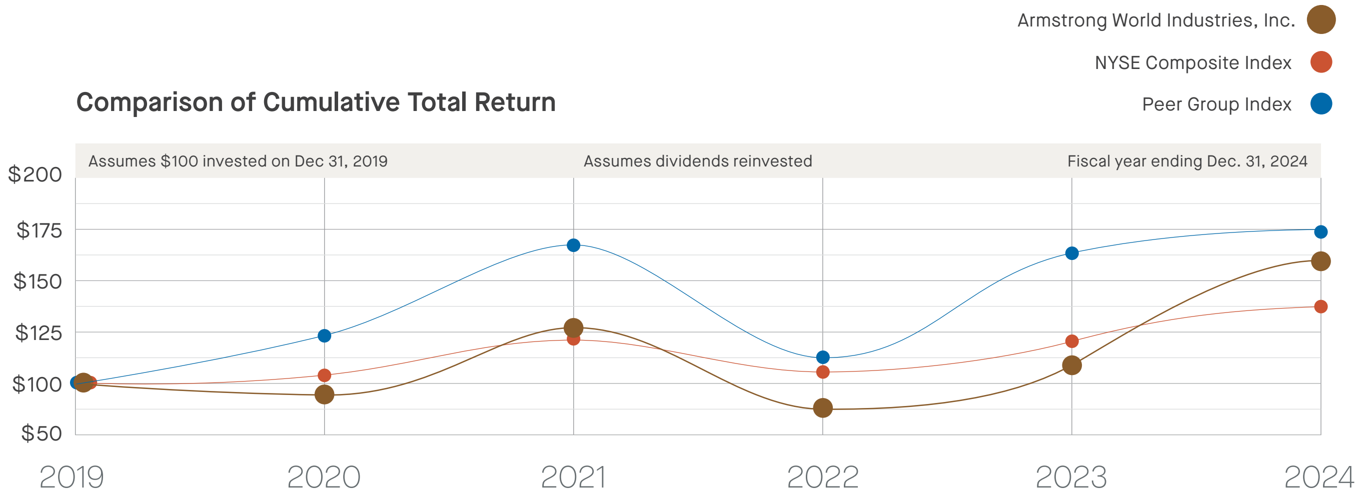
[4] Deferred compensation payments related to 2020 acquisitions recorded as components of net cash provided by operating activities.

[5] Contingent compensation payments related to 2020 acquisitions recorded as a component of net cash provided by operating activities.

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, 2019 to December 31, 2024. 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, 2019, with dividends reinvested, and it should not be considered indicative of future performance.

Comparison of Cumulative Total Return



Company/Market/Peer Group	Period Ending 12/31/19	12/31/20	12/31/21	12/31/22	12/31/23	12/31/24
Armstrong World Industries, Inc.	$100.00	$80.05	$126.07	$75.18	$109.42	$158.27
NYSE Composite Index	$100.00	$104.39	$123.37	$109.09	$121.13	$137.13
Peer Group Index	$100.00	$121.54	$169.02	$113.91	$164.38	$174.59

The performance peer group is composed of the following companies:

(Market Cap is the base year)

Company	% of Total Market Cap
Allegion PLC	8%
A.O. Smith Corporation	5%
Apogee Enterprises, Inc.	1%
Acuity Brands, Inc.	4%
Masonite International Corp.	1%
Fortune Brands Home & Security, Inc.	6%
James Hardie Industries	6%

Company	% of Total Market Cap
Lennox International, Inc.	7%
Masco Corporation	9%
Mohawk Industries, Inc.	7%
Owens Corning	5%
Sherwin-Williams Company	38%
Simpson Manufacturing Co., Inc.	2%
Interface, Inc.	1%
	100%

Corporate Information

Transfer Agent and Registrar

Equiniti Trust Company, LLC
55 Challenger Road, Floor 2
Ridgefield Park, NJ 07660
www.equiniti.com

Annual Meeting of Shareholders

The 2025 Annual Meeting of Shareholders of Armstrong World Industries, Inc. will be held virtually on June 12, 2025, 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 2024 Annual Report on Form 10-K. In addition, in 2024 our Chief Executive Officer provided the required annual certification to the New York Stock Exchange.

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.

Executive Management

Victor D. Grizzle
President and CEO
Member of the Board

Christopher P. Calzaretta
Senior Vice President and CFO

Mark A. Hershey
Senior Vice President
and Chief Operating Officer

Jill A. Crager
Senior Vice President,
Sales Operations

Austin K. So
SVP General Counsel,
Head of Government Relations
and Chief Sustainability Officer

James T. Burge
Vice President and Controller

Independent Members of the Board of Directors

Roy W. Templin
Chairman

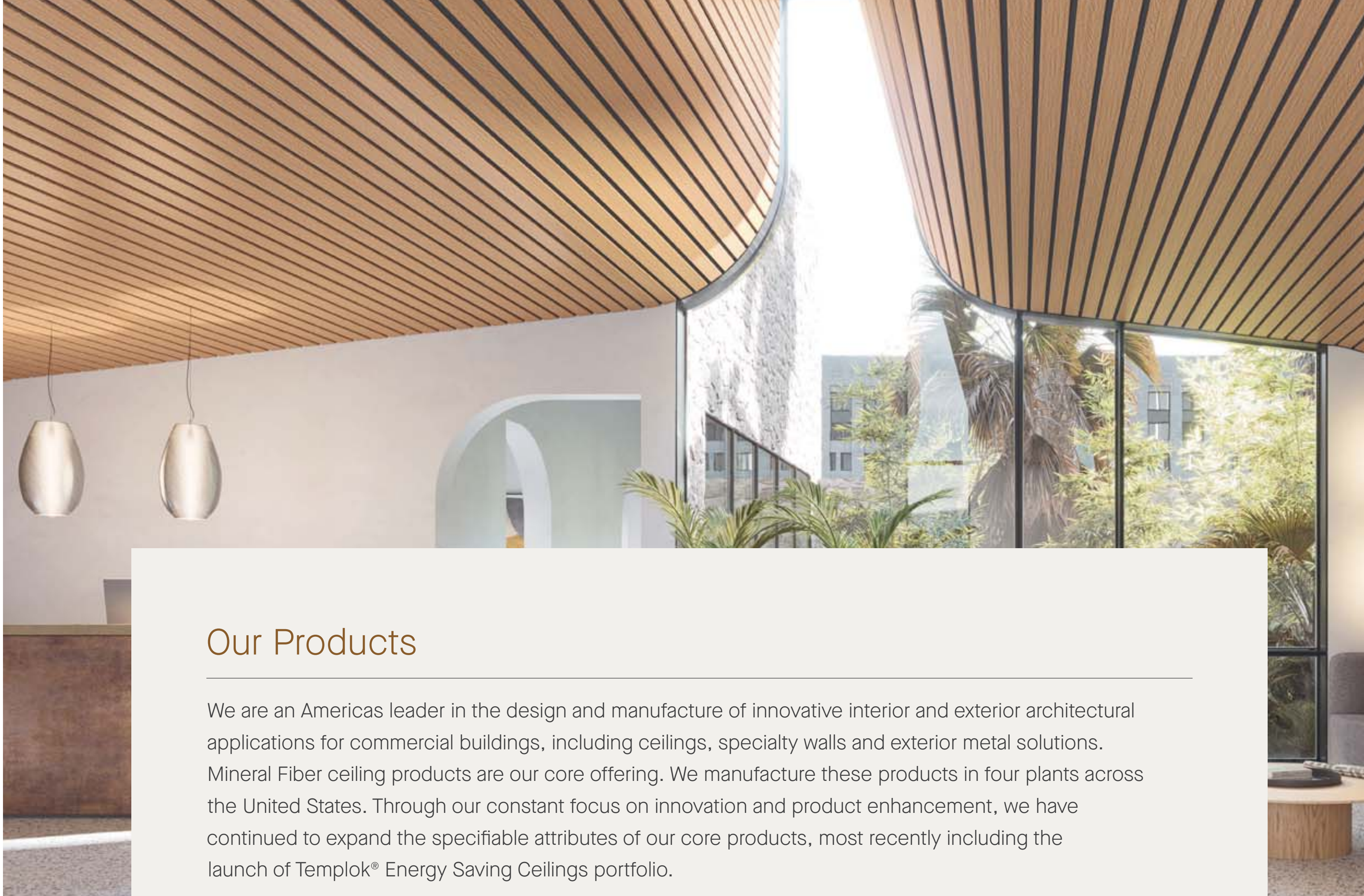
Richard D. Holder

Barbara L. Loughran

William H. Osborne

Wayne R. Shurts

Cherryl T. Thomas

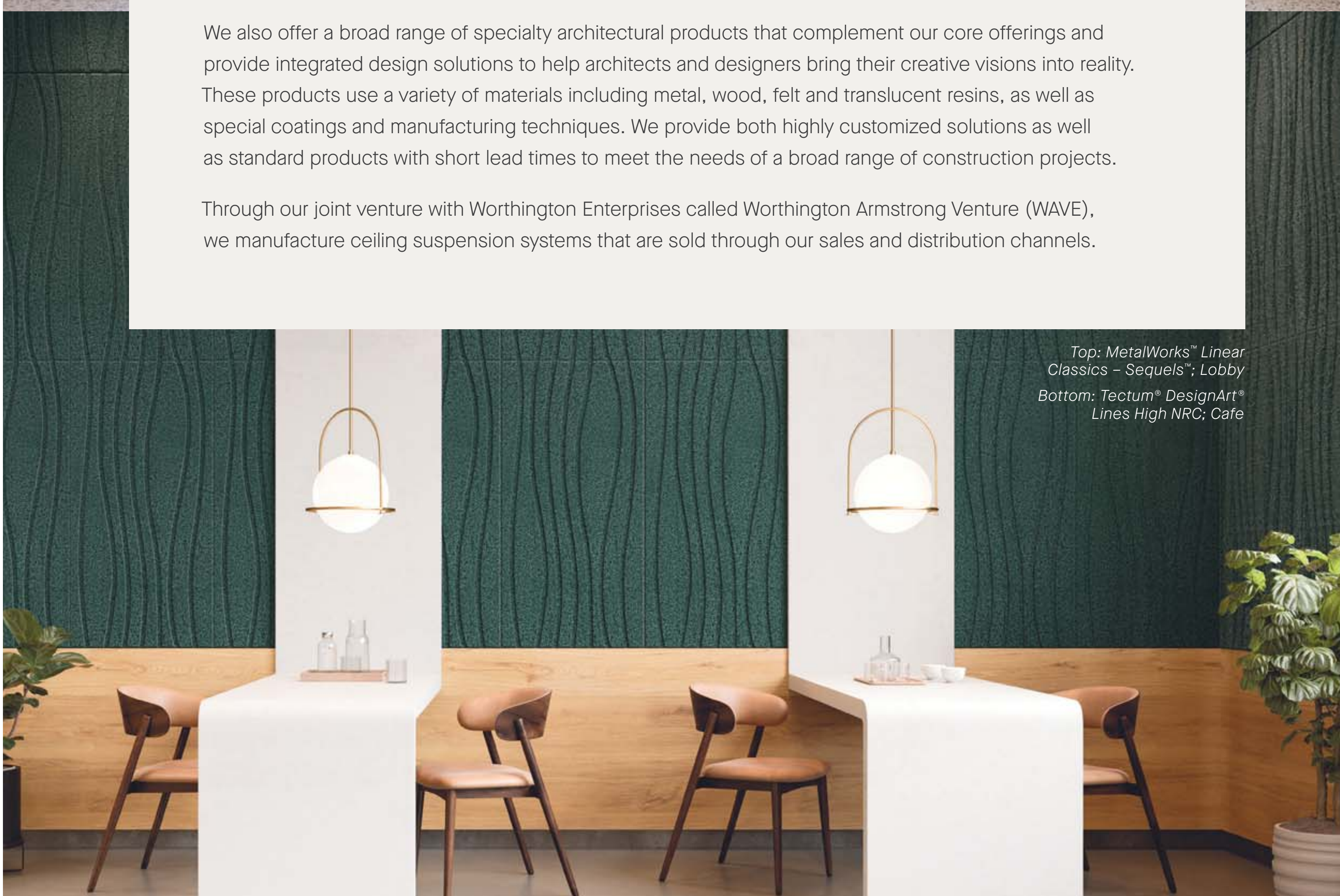


Our Products

We are an Americas leader in the design and manufacture of innovative interior and exterior architectural applications for commercial buildings, including ceilings, specialty walls and exterior metal solutions. Mineral Fiber ceiling products are our core offering. We manufacture these products in four plants across the United States. Through our constant focus on innovation and product enhancement, we have continued to expand the specifiable attributes of our core products, most recently including the launch of Templok® Energy Saving Ceilings portfolio.

We also offer a broad range of specialty architectural products that complement our core offerings and provide integrated design solutions to help architects and designers bring their creative visions into reality. These products use a variety of materials including metal, wood, felt and translucent resins, as well as special coatings and manufacturing techniques. 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 Enterprises called Worthington Armstrong Venture (WAVE), we manufacture ceiling suspension systems that are sold through our sales and distribution channels.



Top: MetalWorks™ Linear Classics – Sequels™; Lobby

Bottom: Tectum® DesignArt® Lines High NRC; Cafe

Experience, Above All™

Armstrong World Industries, Inc.

2500 Columbia Avenue

Lancaster, PA 17603

Additional information about Armstrong is available without charge to shareholders by directing a request to Investor Relations:

Theresa L. Womble: tlwomble@armstrongceilings.com

Corporate Website: www.armstrongworldindustries.com

Armstrong® World Industries

Cover Images:

Circle: Cassels Brock & Blackwell; CastWorks® Metaphors™, Pinnacle design; Gensler; Toronto, ON

Detail: Federal Communications Commission Headquarters; WoodWorks® ACGI Custom Wood Grille; SmithGroup; Washington DC