ARMSTRONG WORLD INDUSTRIES INC
Form 10-K
February 22, 2016
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UNITED STATES

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM 10-K

(Mark One)

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

For the fiscal year ended December 31, 2015

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
Common Stock ($0.01 par value)

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 x 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 x

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 x No ¨

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted 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 and post such files). Yes x No ¨

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K (§229.405 of this chapter) is not contained herein, and will not be contained, to the best of registrant s knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. x

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

Large accelerated filer x	Accelerated filer ¨
Non-accelerated filer ¨	Smaller reporting company ¨

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

The aggregate market value of the Common Stock of Armstrong World Industries, Inc. held by non-affiliates based on the closing price ($53.28 per share) on the New York Stock Exchange (trading symbol AWI) of June 30, 2015 was approximately $2,941 million. As of February 16, 2016, the number of shares outstanding of registrant s Common Stock was 55,396,836.

Documents Incorporated by Reference

Certain sections of Armstrong World Industries, Inc. s definitive Proxy Statement for use in connection with its 2016 annual meeting of shareholders, to be filed no later than April 29, 2016 (120 days after the last day of our 2015 fiscal year), are incorporated by reference into Part III of this Form 10-K Report where indicated.

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When we refer to we, our and us , we are referring to Armstrong World Industries, Inc. and its subsidiaries.

CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

Certain statements in this Annual Report on Form 10-K and the documents incorporated by reference may constitute forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. Those forward-looking statements are subject to various risks and uncertainties and include all statements that are not historical statements of fact and those regarding our intent, belief or expectations, including, but not limited to, our expectations concerning our residential and commercial markets and their effect on our operating results; our expectations regarding the payment of dividends, and our ability to increase revenues, earnings and EBITDA (as such terms are defined by documents incorporated by reference herein). Words such as anticipate, expect, intend, plan, target, project, predict, believe, may, will, would, could, should, seek, estimate and similar exp 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:

- global economic conditions;
- construction activity;
- our announced plan to separate our flooring business from our ceilings (buildings products) business, and our ability to successfully complete such separation;
- competition;
- key customers;
- availability and costs of raw materials and energy;
- international operations;
- covenants in our debt agreements;
- our indebtedness;

our liquidity;

our WAVE joint venture;

environmental matters;

strategic transactions;

plant construction projects;

negative tax consequences;

defined benefit plan obligations;

claims and litigation;

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labor;

our intellectual property rights;

costs savings and productivity initiatives; 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 and in the documents incorporated by reference.

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.

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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.

We are a leading global producer of flooring products and ceiling systems for use primarily in the construction and renovation of residential, commercial and institutional buildings. We design, manufacture and sell flooring products (primarily resilient and wood) and ceiling systems (primarily mineral fiber, fiberglass and metal) around the world.

On February 23, 2015, we announced that our board of directors unanimously approved a plan to separate our Resilient Flooring and Wood Flooring segments from our Building Products (Ceilings) segment. The separation will be effected by allocating the assets and liabilities related primarily to the Resilient Flooring and Wood Flooring segments to Armstrong Flooring, Inc. (AFI) and then distributing the common stock of AFI to AWI s shareholders. The separation and distribution will result in AWI and AFI becoming two independent, publicly-traded companies, with AFI owning and operating the Resilient Flooring and Wood Flooring segments and AWI continuing to own and operate the Building Products (Ceilings) segment. In 2015, we recorded $34.3 million of separation costs, primarily related to outside professional services and employee compensation and severance accruals. We expect the effective date of the separation to be near the end of the first quarter of 2016.

In October 2006, the Armstrong World Industries, Inc. Asbestos Personal Injury Settlement Trust (Asbestos PI Trust) was created to address AWI s personal injury (including wrongful death) asbestos-related liability and received a distribution of 37,000,000 shares of our common stock. All present and future asbestos-related personal injury claims against AWI, including contribution claims of co-defendants but excluding certain foreign claims against subsidiaries, arising directly or indirectly out of AWI s pre-filing use of, or other activities involving, asbestos are channeled to the Asbestos PI Trust.

From the fourth quarter of 2012 through the fourth quarter of 2014, the Asbestos PI Trust sold 20,448,362 shares of our common stock. In 2015, the Asbestos Trust sold 4,281,884 shares of our common stock. We did not sell any shares and did not receive any proceeds from these transactions. As a result of these transactions, the Asbestos PI Trust currently holds approximately 9% of our outstanding shares as of December 31, 2015.

Reportable Segments

We operate four business segments - Building Products, Resilient Flooring, Wood Flooring and Unallocated Corporate. See Note 3 to the Consolidated Financial Statements and Management s Discussion and Analysis of Financial Condition and Results of Operations in Item 7 of this Form 10-K for additional financial information on our reportable segments.

Markets

We are well positioned in the industry segments and markets in which we operate - often holding a leadership or significant market share position. The major markets in which we compete are:

North American Residential. Our Building Products, Resilient Flooring and Wood Flooring segments sell products for use in single and multi-family housing. Our ceiling products compete against mineral fiber and fiberglass products

from other manufacturers, as well as drywall. Homeowners, builders, and property management firms can choose from our innovative resilient and wood flooring products, for which we are North America s largest provider, or from our laminate flooring products. We compete directly with other domestic and international suppliers of these products. Our flooring products also compete with carpet, stone and ceramic products, which we do not offer.

Our products are used in new home construction and existing home renovation work. We estimate that existing home renovation (also known as replacement / remodel) work represents the majority of the total North American residential 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. We believe there is some longer-term correlation between

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these statistics and our revenue after reflecting a lag period of several months between a change in construction activity and our operating results. However, we believe that consumers preferences for product type, style, color, availability, affordability and ease of installation also significantly affect our revenue. Further, changes in inventory levels and/or product focus at national home centers and independent building materials distributors can significantly affect our revenue.

North American Commercial. Many of our products, primarily ceilings and resilient flooring, are used in commercial and institutional buildings. Our revenue opportunities come from new construction as well as renovation of existing buildings. Renovation work is estimated to represent the majority of the total North American commercial market opportunity. Most of our revenue comes from four major segments of commercial building office, education, retail and healthcare. We monitor U.S. construction starts and follow project activity. Our revenue from new construction can lag behind construction starts by as much as 18 to 24 months. We also monitor office vacancy rates, gross domestic product (GDP) and general employment levels, which can indicate movement in renovation and new construction opportunities. We believe that these statistics, taking into account the time-lag effect, provide a reasonable indication of our future revenue opportunity from commercial renovation and new construction. However, we believe that consumers preferences for product type, style, color, availability, affordability and ease of installation also affect our revenue.

Outside of North America. About 20% of our 2015 consolidated sales were in Europe and the Pacific Rim and almost all were commercial in nature. For the countries in which we have significant revenue, we monitor various national statistics (such as GDP) as well as construction data (starts and project-related information). Revenues come primarily from new construction and renovation work.

The following table provides an estimate of our segments 2015 net sales, by major markets.

(Estimated percentages of individual segment s sales)	North American Residential		North American Commercial		Outside of North America		
	New	Renovation	New	Renovation	New	Renovation	Total
Building Products		5%	10%	50%	20%	15%	100%
Resilient Flooring	5%	40%	5%	40%	5%	5%	100%
Wood Flooring	35%	65%					100%

Management has used estimates in creating the table above because the end-use of our products is not easily determinable.

Geographic Areas

See Note 3 to the Consolidated Financial Statements and Management s Discussion and Analysis of Financial Condition and Results of Operations in Item 7 of this Form 10-K for additional financial information by geographic areas.

Customers

We use our reputation, capabilities, service and brand recognition to develop long-standing relationships with our customers. We principally sell products through independent building materials distributors, who re-sell our products to retailers, builders, contractors, installers and others. In the commercial sector, we also sell to several contractors and to subcontractors alliances, large architect and design firms, and major facility owners. In the North American retail channel, which sells to end-users in the residential and light commercial segments, we have important relationships with national home centers such as The Home Depot, Inc. and Lowe s Companies, Inc. In the North American residential sector, we have important relationships with major home builders and retail buying groups. Additionally, when market conditions and available capacity warrant, we also provide resilient and wood flooring products on an original equipment manufacturer (OEM) basis to other flooring companies.

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Approximately two-thirds of our consolidated net sales are to distributors. Sales to large home centers account for approximately 15% of our consolidated sales. Our remaining sales are to contractors and retailers.

No customer accounted for 10% or more of our total consolidated net sales during the last three years.

Working Capital

We produce goods for inventory and sell on credit to our customers. Generally, our distributors carry inventory as needed to meet local or rapid delivery requirements. We sell the vast majority of 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. Our wood flooring business generally purchases green lumber which is held in inventory during the drying process for approximately three months.

Competition

We face strong competition in all of our businesses. Principal attributes of competition include product performance, product styling, service and price. Competition in North America comes from both domestic and international manufacturers. Additionally, some of our products compete with alternative products or finishing solutions. Our ceiling products compete with drywall and exposed structure (also known as open plenum) and our resilient, laminate and wood flooring products compete with carpet, stone and ceramic products. There is excess industry capacity for certain products in some geographies, which tends to increase price competition. The following companies are our primary competitors:

Building Products CertainTeed Corporation (a subsidiary of Saint-Gobain), Chicago Metallic Corporation (owned by Rockwool International), Georgia-Pacific Corporation, Knauf AMF GmbH & Co. KG, Lafarge SA, Odenwald Faserplattenwerk GmbH, Rockfon A/S (owned by Rockwool International), Saint-Gobain and USG Corporation.

Flooring segments Beaulieu International Group, N.V., Boa-Franc, Inc., Congoleum Corporation, Forbo Holding AG, Gerflor Group, IVC Group, Krono Holding AG, Lauzon Ltd, LG Floors, Mannington Mills, Inc., Mercier Wood Flooring, Inc., Metroflor Corporation, Mirage Hardwood Floors (a division of Boa-Franc Inc.), Mohawk Industries, Inc., Mullican Flooring, L.P., Nora Systems GmbH, Pfleiderer AG, Shaw Industries, Inc., Somerset Hardwood Flooring, Tarkett AG and USFloors, Inc.

Raw Materials

We purchase raw materials from numerous suppliers worldwide in the ordinary course of business. The principal raw materials used in each business include the following:

Business	Principal Raw Materials
Building Products	Mineral fiber, fiberglass, perlite, waste paper, pigments, clays, starches and steel, which is used in the production of metal ceilings and by WAVE, our joint venture that manufactures ceiling grid
Resilient Flooring	Polyvinylchloride (PVC) resins and films, plasticizers, fiberglass and felt backings, limestone, pigments, inks and stabilizers
Wood Flooring	Hardwood lumber, veneer, coatings and stains

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 businesses. 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.

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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 that we sell are sourced from third parties. Our primary sourced products include various flooring products (laminate, wood, vinyl sheet, and luxury vinyl tile LVT products), specialty ceiling products and installation-related products, as well as accessories for some of our manufactured products. We purchase some of our sourced products from suppliers that are located outside of the U.S., primarily from the Pacific Rim and Europe. Sales of sourced products represented approximately 15% of our total consolidated revenue in each of 2015, 2014, and 2013.

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

Seasonality

Generally, our sales in North America and Europe tend to be stronger in the second and third quarters of our fiscal year due to more favorable weather conditions, customer business cycles, the timing of renovation, home sales and new construction. We see similar patterns with respect to our sales in the Pacific Rim, though the timing of the Chinese New Year can affect buying behaviors.

Patent and Intellectual Property Rights

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

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

Certain of our trademarks, including without limitation, , Armstrong®, Alterna®, American Scrape®, BBT®, BioBased Tile®, BioGuard , Bruce®, Cirrus®, Cortega®, Diamond 10 , Dundee®, Dune , Excelon®, Huiyi , Humiguard®, Imperial®, Initiator , Inspiring Great Spaces®, Laurel , Lock & Fold®, Luxe Plank®, Manchester®, Medintech®, Memories , MetalWorks , Natural Creations®, Optima®, Perla , Plano®, Stonetex®, Station Square , StrataMax®, Timberline®, ToughGuard®, Ultima®, Vivero , and WoodWorks®, are important to our business because of their significant brand name recognition. Trademark protection continues in some countries as long as the mark is used, and continues in other countries as long as the mark is registered. Registrations are generally for fixed, but renewable, terms.

We review the carrying value of trademarks 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.

Employees

As of December 31, 2015, we had approximately 7,600 full-time and part-time employees worldwide. Approximately 53% of our 3,500 production and maintenance employees in the U.S. are represented by labor unions. Outside the U.S., most of our production employees are covered by either industry-sponsored and/or state-sponsored collective bargaining mechanisms. We believe that our relations with our employees are satisfactory.

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Research & Development

Research and development (R&D) activities are important and necessary in helping us improve our products competitiveness. Principal R&D functions include the development and improvement of products and manufacturing processes. We spent $31.1 million in 2015, $30.6 million in 2014 and $29.3 million in 2013 on R&D activities worldwide.

Sustainability and Environmental Matters

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

We expect that there will be increased demand over time for products, systems and services that meet evolving regulatory and customer sustainability standards and preferences and decreased demand for products that produce significant greenhouse gas emissions. We also believe that our ability to continue to provide these products, systems and services to our customers will be necessary to maintain our competitive position in the marketplace. We are committed to complying with all environmental laws and regulations that are applicable to our operations.

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 or international Superfund and similar type environmental laws governing several domestically- and internationally owned, formerly owned and non-owned locations allegedly resulting from past industrial activity. In a few cases, we are one of several potentially responsible parties (PRPs) 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. Most of our manufacturing and certain of our research 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 are involved in various lawsuits, claims, investigations and other legal matters from time to time that arise in the ordinary course of conducting business, including matters involving our products, intellectual property, relationships with suppliers, distributors, relationships with competitors, employees and other matters. For example, we are currently a party to various litigation matters that involve product liability, tort liability and other claims under a wide range of allegations, including illness due to exposure to certain chemicals used in the workplace; or medical conditions arising from exposure to product ingredients or the presence of trace contaminants. In some cases, these allegations involve multiple defendants and relate to legacy products that we and other defendants purportedly manufactured or sold. We believe these claims and allegations to be without merit and intend to defend them vigorously. While complete assurance cannot be given to the outcome of these proceedings, we do not believe that any of these matters, individually or in the aggregate, will have a material adverse effect on our financial condition, liquidity or results of operations.

We have not experienced a material adverse effect upon our capital expenditures or competitive position as a result of environmental control legislation and regulations. Liabilities of $6.0 million and $4.4 million at December 31, 2015 and December 31, 2014, respectively, were recorded for potential environmental liabilities, on a global basis, that we consider probable and for which a reasonable estimate of the probable liability could be made. See Note 27 to the Consolidated Financial Statements and Risk Factors in Item 1A of this Form 10-K, for information regarding the possible effects that compliance with environmental laws and regulations may have on our businesses and operating results.

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Website

We maintain a website at http://www.armstrong.com. Information contained on our website is not incorporated into this document. Reference in this Form 10-K to our website is an inactive text reference only. Annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, all amendments to those reports and other information about us are available free of charge through this website as soon as reasonably practicable after the reports are electronically filed with the SEC. These materials are also available from the SEC s website at www.sec.gov.

ITEM 1A. RISK FACTORS

Worldwide economic conditions could have a material adverse impact on our financial condition, liquidity or results of operations.

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

- the financial stability of our customers or suppliers may be compromised, which could result in additional bad debts for us or non-performance by suppliers;
- commercial and residential 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 product;
- the net asset value of the investment funds underlying our defined benefit pension plans may decline, which could result in negative plan investment performance and additional charges which may involve significant cash contributions to such plans, 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. Downturns in construction activity could adversely affect our financial condition, liquidity or results of operations.

Our businesses have greater sales opportunities when construction activity is strong and, conversely, have fewer opportunities when such activity declines. The cyclical nature of commercial and residential construction activity, including construction activity funded by the public sector, tends to be influenced by prevailing economic conditions,

including the rate of growth in gross domestic product, prevailing interest rates, government spending patterns, business, investor and consumer confidence and other factors beyond our control. Prolonged downturns in construction activity could have a material adverse effect on our financial condition, liquidity or results of operations.

Our plan to separate into two independent publicly-traded companies is subject to various risks and uncertainties and may not be completed in accordance with the expected plans or anticipated timeline, or at all, and will involve significant time and expense, which could disrupt or adversely affect our business.

On February 23, 2015, we announced that our board of directors unanimously approved a plan to separate our Resilient Flooring and Wood Flooring segments from our Building Products (Ceilings) segment. The separation will be effected by allocating the assets and liabilities related primarily to the Resilient Flooring and Wood Flooring segments to Armstrong Flooring, Inc. (AFI) and then distributing the common stock of AFI to AWI s shareholders. The separation and distribution will result in AWI and AFI becoming two independent, publicly-traded companies, with AFI owning and operating the Resilient Flooring and Wood Flooring segments and AWI continuing to own and operate the Building Products (Ceilings) segment. Completion of the separation will be contingent upon customary closing conditions, including, among other things, authorization and approval of our board of directors of the final terms of the separation, receipt of a

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legal opinion regarding the tax-free status of the transaction, execution of intercompany agreements, the effectiveness of a registration statement on Form 10 with the SEC, and market and certain other conditions. For these and other reasons, the separation may not be completed during the first quarter of 2016, as currently anticipated, if at all.

Regardless of whether or not the separation is completed, our ongoing businesses may be adversely affected and we may be subject to certain risks and consequences, including, among others, the following:

- execution of the separation will require significant time and attention from management, which may distract management from the operation of our businesses and the execution of other initiatives that may have been beneficial to us;

- we may experience unanticipated competitive developments, including changes in the conditions of our flooring and ceilings business s respective markets;

- we may experience increased difficulties in attracting, retaining and motivating employees during the pendency of the separation and following its completion;

- we will be required to pay certain costs and expenses relating to the transaction, such as legal, accounting and other professional fees, and may be required to pay certain non-U.S. tax costs resulting from internal restructurings whether or not the spinoff is completed; and

- we may experience negative reactions from the financial markets if we fail to complete the transaction.

Any of these factors could have a material adverse effect on our business, financial condition, results of operations and the price of our common stock.

The separation may not be beneficial.

We may not realize strategic, financial, operational or other benefits from the separation. As independent publicly-traded companies, the Company and AFI will be smaller, less diversified companies with a narrower business focus and may be more vulnerable to changing market conditions, which could materially and adversely affect their respective business, financial condition and results of operations.

Further, there can be no assurance that the combined value of the common stock of the two publicly-traded companies will be equal to or greater than what the value of our common stock would have been had the separation not occurred.

The separation may result in disruptions to, and negatively impact our relationships with, our customers and other business partners and the relationships with the customers and other business partners of AFI.

Uncertainty related to the separation may lead customers and other parties with which we currently do business or with which we and AFI may do business in the future to terminate or attempt to negotiate changes in existing business relationships, or consider entering into business relationships with parties other than us or AFI. These disruptions could have a material and adverse effect on our or AFI s businesses, financial condition, results of operations and

prospects. The effect of such disruptions could be exacerbated by any delays in the completion of the separation.

If the separation and distribution fails to qualify as a tax-free transaction for U.S. federal income tax purposes, then AFI, AWI and AWI s shareholders could be subject to significant tax liability or tax indemnity obligations.

It is a condition to the distribution that we receive an opinion from our special tax counsel, on the basis of certain facts, representations, covenants and assumptions set forth in such opinion, substantially to the effect that, for U.S. federal income tax purposes, the separation and distribution should qualify as a transaction that generally is tax-free to us and our shareholders, for U.S. federal income tax purposes, under Sections 355 and 368(a)(1)(D) of the Code.

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Notwithstanding the tax opinion, the Internal Revenue Service (IRS) could determine on audit that the distribution should be treated as a taxable transaction if it determines that any of the facts, assumptions, representations or covenants set forth in the tax opinion is not correct or has been violated, or that the distribution should be taxable for other reasons, including as a result of a significant change in stock or asset ownership after the distribution, or if the IRS were to disagree with the conclusions of the tax opinion. If the distribution is ultimately determined to be taxable, the distribution could be treated as a taxable dividend to each U.S. holder of our common shares who receives shares of AFI in connection with the spinoff for U.S. federal income tax purposes, and such shareholders could incur significant U.S. federal income tax liabilities. In addition, we and/or AFI could incur significant U.S. federal income tax liabilities or tax indemnification obligations, whether under applicable law or the tax matters agreement that we will enter into with AFI, if it is ultimately determined that certain related transactions undertaken in anticipation of the distribution are taxable.

Our markets are highly competitive. Competition can reduce demand for our products or cause us to lower prices. Failure to compete effectively by meeting consumer preferences and maintaining market share could adversely affect our results.

Our markets are highly competitive. Competition can reduce demand for our products, negatively affect our product sales mix or cause us to lower prices. Failure to compete effectively by meeting consumer preferences and maintaining market share could have a material adverse effect on our financial condition, liquidity or results of operations. Our customers consider our products performance, product styling, customer service and price when deciding whether to purchase our products. Shifting consumer preference in our highly competitive markets, from residential resilient products to other flooring products, for example, whether for performance or styling preferences or our inability to develop and offer new competitive performance features could have an adverse effect on our sales. In addition, excess industry capacity for certain products in several geographic markets could lead to industry consolidation and/or increased price competition. We are also subject to potential increased price competition from overseas competitors which may have lower cost structures.

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

Some of our business lines and markets are dependent on a few key customers, including independent distributors. We generally do not enter into written or long-term agreements with our independent distributors. The loss, reduction, or fluctuation of sales to one of these major customers, or any adverse change in our business relationship with any one of them, could have a material adverse effect on our financial condition, liquidity or results of operations.

If the availability of raw materials or energy decreases, or the costs increase, and we are unable to pass along increased costs, our financial condition, liquidity or results of operations could be adversely affected.

The availability and cost of raw materials, packaging materials, energy and sourced products are critical to our operations. For example, we use substantial quantities of natural gas, petroleum-based raw materials and hardwood lumber in our manufacturing operations. The cost of some of these items has been volatile in recent years and availability has been limited at times. We source some materials from a limited number of suppliers, which, among other things, increases the risk of unavailability. Limited availability could cause us to reformulate products or limit our production. Decreased access to raw materials and energy or significant increased cost to purchase these items and any corresponding inability to pass along such costs through price increases could have a material adverse effect on our financial condition, liquidity or results of operations.

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

A significant portion of our products move in international trade, with approximately 20% of our revenues from operations outside the United States and Canada in 2015. See Note 3 to the Consolidated Financial Statements for further information. Our international trade is subject to currency exchange fluctuations, trade regulations, import duties, logistics costs, delays and other related risks. Our international operations are also subject to various tax rates, credit risks in emerging markets, political risks, uncertain legal

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systems, high costs in repatriating profits to the United States from some countries, and loss of sales to local competitors following currency devaluations in countries where we import products for sale. In addition, our international growth strategy depends in part on our ability to expand our operations in certain emerging markets. However, some emerging markets have greater political and economic volatility and greater vulnerability to infrastructure and labor disruptions than established markets.

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

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

The agreements that govern our indebtedness include covenants that, among other things, may impose significant operating and financial restrictions, including restrictions on our ability to engage in activities that may be in our best long-term interests. These covenants may restrict our ability to:

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

Under the terms of our senior secured credit facility, we are required to maintain specified leverage and interest coverage ratios. Our ability to meet these ratios could be affected by events beyond our control, and we cannot assure that we will meet them. A breach of any of the restrictive covenants or ratios would result in a default under the senior secured credit facility. If any such default occurs, the lenders under the senior secured credit facility may be able to elect to declare all outstanding borrowings under our facilities, 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 indebtedness may adversely affect our cash flow and our ability to operate our business, make payments on our indebtedness and declare dividends on our capital stock.

Our level of indebtedness and degree of leverage could:

make it more difficult for us to satisfy our obligations with respect to our indebtedness;

make us more vulnerable to adverse changes in general economic, industry and competitive conditions and adverse changes in government regulation;

limit our flexibility in planning for, or reacting to, changes in our business and the industry in which we operate;

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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 exploiting;

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 our capital stock; and

adversely affect our credit ratings.

We may also incur additional indebtedness, which could exacerbate the risks described above. In addition, to the extent that our indebtedness bears interest at floating rates, our sensitivity to interest rate fluctuations will increase.

Any of the above listed factors could materially adversely affect our financial condition, liquidity or results of operations.

We require a significant amount of liquidity to fund our operations, and borrowing has increased our vulnerability to negative unforeseen events.

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

Our WAVE joint venture is important to our financial results, and if there is a change with respect to our partner that adversely impacts its relationship with us, WAVE s performance could be adversely impacted.

Our equity investment in our WAVE joint venture remains important to our financial results. We believe an important element in the success of this joint venture is the relationship with our partner, Worthington Industries, Inc. If there is a change in ownership, a change of control, a change in management or management philosophy, a change in business strategy or another event with respect to our partner that adversely impacts our relationship, WAVE s performance could be adversely impacted. In addition, our partner may have 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.

We may be subject to liability under and may make substantial future expenditures to comply with environmental laws and regulations, which could materially adversely affect our financial condition, liquidity or results of operations.

We are involved with environmental investigation and remediation activities for which our ultimate liability may exceed the currently estimated and accrued amounts. It is possible that we could become subject to additional environmental matters and corresponding liabilities in the future. See Note 27 to the Consolidated Financial Statements for further information related to our environmental matters.

The building materials industry has been subject to claims relating to raw materials such as silicates, polychlorinated biphenyl (PCB), PVC, formaldehyde, fire-retardants and claims relating to other issues such as mold and toxic fumes,

as well as claims for incidents of catastrophic loss, such as building fires. We have not received any significant claims involving our raw materials or our product performance; however, product liability insurance coverage may not be available or adequate in all circumstances to cover claims that may arise in the future.

In addition, our operations are subject to various domestic and foreign environmental, health, and safety laws and regulations. These laws and regulations not only govern our current operations and products, but also impose potential liability on us for our past operations. Our costs to comply with these laws and regulations may increase as these requirements become more stringent in the future, and these increased costs may materially adversely affect our financial condition, liquidity or results of operations.

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We may pursue strategic transactions that could create risks and present unforeseen integration obstacles or costs, any of which could materially adversely affect our financial condition, liquidity or results of operations.

We have evaluated, and expect to continue to evaluate, potential strategic transactions as opportunities arise. We routinely engage in discussions with third parties regarding potential transactions, including joint ventures, which could be significant. Any such strategic transaction involves a number of risks, including potential disruption of our ongoing business and distraction of management, difficulty with integrating or separating personnel and business operations and infrastructure, and increasing or decreasing the scope, geographic diversity and complexity of our operations. Strategic transactions could involve payment by us of a substantial amount of cash, assumption of liabilities and indemnification obligations, regulatory requirements, incurrence of a substantial amount of debt or issuance of a substantial amount of equity. Certain strategic opportunities may not result in the consummation of a transaction or may fail to realize the intended benefits and synergies. If we fail to consummate and integrate our strategic transactions in a timely and cost-effective manner, our financial condition, liquidity or results of operation could be materially and adversely affected.

Our plant construction projects may adversely impact our results.

We recently completed several large plant construction projects, including two resilient flooring plants and one mineral fiber ceilings plant in China and, in the first quarter of 2015, a mineral fiber ceilings plant in Russia. In addition, we are adding manufacturing capability to our Lancaster, PA flooring plant to manufacture LVT in North America. Economic and competitive advantages and returns expected from these projects may not fully materialize as a result of changes in market conditions. In addition, there can be no assurance that the actual cost of building and operating our LVT plant in North America will not exceed our projections, and we may experience delays in this project for many reasons, including unavailability of raw materials, labor or equipment or regulatory matters.

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

We are subject to the tax laws of the many jurisdictions in which we operate. The tax laws are complex, and the manner in which they apply to our operations and results is sometimes open to interpretation. Because our income tax expense for any period depends heavily on the mix of income derived from the various taxing jurisdictions, our income tax expense and reported net income may fluctuate significantly, and may be materially different than forecasted or experienced in the past. Our financial condition, liquidity, results of operations or tax liability could be adversely affected by changes in the effective tax rate as a result of a change in the mix of earnings in countries with differing statutory tax rates, changes in our overall profitability, changes in tax legislation and rates, changes in the amount of earnings permanently reinvested offshore, the results of examinations of previously filed tax returns, and ongoing assessments of our tax exposures.

Our financial condition, liquidity, results of operations or tax liability could also be adversely affected by changes in the valuation of deferred tax assets and liabilities. We have substantial deferred tax assets related to United States domestic foreign tax credits, or FTCs, and state net operating losses, or NOLs, which are available to reduce our U.S. income tax liability and to offset future state taxable income. However, our ability to utilize the current carrying value of these deferred tax assets may be impacted as a result of certain future events, such as changes in tax legislation and insufficient future taxable income prior to expiration of the FTCs and 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 throughout the world, with the most significant plans located 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 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 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.

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Our pension plans were underfunded by approximately $104.0 million as of December 31, 2015. Our unfunded postretirement plan liabilities were approximately $190.3 million as of December 31, 2015. In recent years, the declining interest rates and changes to mortality assumptions have negatively impacted the funded status of our pension and postretirement plans. In addition, volatile asset performance, most notably since 2008, has also negatively impacted the funded status of our pension plans. Funding requirements for our pension plans may become more significant. If our cash flows and capital resources are insufficient to fund our pension and postretirement plans obligations, we could be forced to reduce or delay investments and capital expenditures, seek additional capital, or restructure or refinance our indebtedness.

Adverse judgments in regulatory actions, product claims, environmental claims and other litigation could be costly. 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 comply with applicable government regulatory standards and internal requirements, and that our products perform effectively and safely, customers from time to time could claim that our products do not meet warranty or contractual requirements, and users could claim to be harmed by use or misuse of our products. 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. For example, we are currently a party to various litigation matters that involve product liability, tort liability and other claims under a wide range of allegations, including illness due to exposure to certain chemicals used in the workplace; or medical conditions arising from exposure to product ingredients or the presence of trace contaminants. In some cases, these allegations involve multiple defendants and relate to legacy products that we and other defendants purportedly manufactured or sold. 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 impact. We cannot assure that the outcome of all current or future litigation will not have a material adverse effect on our financial condition, liquidity or results of operations.

Increased costs of labor, labor disputes, work stoppages or union organizing activity could delay or impede production and could have a material adverse effect on our financial condition, liquidity or results of operations.

Increased costs of U.S. and international labor, including the costs of employee benefits plans, labor disputes, work stoppages or union organizing activity could delay or impede production and have a material adverse effect on our financial condition, liquidity or results of operations. As the majority of our manufacturing employees are represented by unions and covered by collective bargaining or similar agreements, we often incur costs attributable to periodic renegotiation of those agreements, which may be difficult to project. We are also subject to the risk that strikes or other conflicts with organized personnel may arise or that we may become the subject of union organizing activity at our facilities that do not currently have union representation. Prolonged negotiations, conflicts or related activities

could also lead to costly work stoppages and loss of productivity.

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

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

Our cost saving initiatives may not achieve expected savings in our operating costs or improved operating results.

We aggressively look for ways to make our operations more efficient and effective. We reduce, move and expand our plants and operations as needed. 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, or if other unforeseen events occur, our financial condition, liquidity or results of operations could be materially and adversely affected.

ITEM 1B. UNRESOLVED STAFF COMMENTS

None.

ITEM 2. PROPERTIES

Our world headquarters is in Lancaster, Pennsylvania. We own a 100-acre, multi-building campus comprising the site of our corporate headquarters, most of our operational headquarters, our U.S. R&D operations and marketing, and customer service headquarters.

We produce and market Armstrong products and services throughout the world, operating 32 manufacturing plants in nine countries as of December 31, 2015. Four of our plants are leased and the remaining 28 are owned. We operate 20 plants located throughout the United States. In addition, our WAVE joint venture operates 10 additional plants in five countries.

Business Segment	Number of Plants	Location of Principal Facilities
Building Products	15	U.S. (Florida, Georgia, Ohio, Oregon, Pennsylvania and West Virginia), Austria, Canada, China, France, Germany, Russia and the U.K.

Resilient Flooring	9	U.S. (California, Illinois, Mississippi, Oklahoma and Pennsylvania), Australia and China
Wood Flooring	8	U.S. (Arkansas, Kentucky, Mississippi, Missouri, Pennsylvania, Tennessee and West Virginia)

During the first quarter of 2015 we completed the construction of a mineral fiber ceiling plant in Russia. During the fourth quarter of 2015, we decided to idle one of our Buildings Products facilities in China in 2016.

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

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

ITEM 3. LEGAL PROCEEDINGS

See the Specific Material Events section of the Environmental Matters section of Note 27 to the Consolidated Financial Statements, which is incorporated herein by reference, for a description of our significant legal proceedings.

ITEM 4. MINE SAFETY DISCLOSURES

Not applicable.

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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 17, 2016, there were approximately 320 holders of record of AWI s common stock.

	First	Second	Third	Fourth	Total Year
2015					
Price range of common stock - high	$ 58.42	$ 58.96	$ 60.70	$ 52.33	$ 60.70
Price range of common stock - low	$ 48.60	$ 52.94	$ 46.47	$ 44.43	$ 44.43
2014					
Price range of common stock - high	$ 61.90	$ 58.00	$ 59.90	$ 56.03	$ 61.90
Price range of common stock - low	$ 51.31	$ 50.98	$ 48.35	$ 44.00	$ 44.00

The above figures represent the high and low intra-day sale prices for our common stock as reported by the New York Stock Exchange.

There were no dividends declared during 2015 or 2014.

Dividends are paid 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. 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[2]	Maximum Number of Shares that may yet be Purchased under the Plans or Programs
October 1 31, 2015	158	$ 51.17		
November 1 30, 2015				
December 1 31, 2015				
Total	158		N/A	N/A

[1] 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 the 2011 Long Term Incentive Plan.

[2] The Company does not presently have a share buy-back program.

For more information regarding securities authorized for issuance under our equity compensation plans, see Note 21 to the Consolidated Financial Statements included in this Form 10-K.

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ITEM 6. SELECTED FINANCIAL DATA

The following selected historical consolidated financial data should be read in conjunction with our audited consolidated financial statements, the accompanying notes and Management s Discussion and Analysis of Financial Condition and Results of Operations included in this Form 10-K. The selected historical consolidated financial data for the periods presented have been derived from our audited consolidated financial statements.

	2015	2014	2013	2012	2011
(amounts in millions, except for per-share data)					
Income statement data					
Net sales	$ 2,420.0	$ 2,515.3	$ 2,527.4	$ 2,428.7	$ 2,482.9
Operating income	187.4	239.1	265.6	284.9	268.5
Earnings from continuing operations	52.6	102.0	127.3	158.6	141.6
Per common share - basic (a)	$ 0.95	$ 1.85	$ 2.19	$ 2.67	$ 2.41
Per common share - diluted (a)	$ 0.94	$ 1.83	$ 2.17	$ 2.65	$ 2.39
Dividends declared per share of common stock				$ 8.55	
Balance sheet data (end of period)					
Total assets	$ 2,691.9	$ 2,606.2	$ 2,916.6	$ 2,854.3	$ 2,994.7
Long-term debt	950.9	1,003.0	1,042.6	1,038.0	822.9
Total shareholders equity	768.8	649.1	673.2	719.1	1,130.2

Notes:

(a) See definition of basic and diluted earnings per share in Note 2 to the Consolidated Financial Statements.

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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

We are a leading global producer of flooring products and ceiling systems for use primarily in the construction and renovation of residential, commercial and institutional buildings. We design, manufacture and sell flooring products (primarily resilient and wood) and ceiling systems (primarily mineral fiber, fiberglass and metal) around the world.

On February 23, 2015, we announced that our board of directors unanimously approved a plan to separate our Resilient Flooring and Wood Flooring segments from our Building Products (Ceilings) segment. The separation will be effected by allocating the assets and liabilities related primarily to the Resilient Flooring and Wood Flooring segments to Armstrong Flooring, Inc. (AFI) and then distributing the common stock of AFI to AWI s shareholders. The separation and distribution will result in AWI and AFI becoming two independent, publicly-traded companies, with AFI owning and operating the Resilient Flooring and Wood Flooring segments and AWI continuing to own and operate the Building Products (Ceilings) segment. The effective date of the separation is expected to be near the end of the first quarter of 2016.

On December 4, 2014, our Board of Directors approved the cessation of funding to our former DLW subsidiary, which was our former European Resilient Flooring business. This decision followed a comprehensive evaluation of the strategic alternatives for the business. As a result of this decision, DLW management concluded that its operations could not be financed and sustained without funding from us and filed for insolvency in Germany on December 11, 2014. See Note 4 to the Consolidated Financial Statements for more information.

During 2015 we opened a mineral fiber ceiling plant in Russia. As of December 31, 2015, we operated 32 manufacturing plants in nine countries, including 20 plants located throughout the U.S.

Worthington Armstrong Venture (WAVE), our joint venture with Worthington Industries, Inc., operates 10 additional plants in five countries to produce suspension system (grid) products which we use in our ceiling systems.

We report our financial results through the following segments: Building Products, Resilient Flooring, Wood Flooring, and Unallocated Corporate. See Results of Operations and Reportable Segment Results for additional financial information on our consolidated company and our segments.

Factors Affecting Revenues

For information on our segments 2015 net sales by geography, see Note 3 to the Consolidated Financial Statements included in this Form 10-K.

Markets. We compete in building material markets around the world. The majority of our sales are in North America. We closely monitor publicly available macroeconomic trends that provide insight to commercial and residential market activity including Gross Domestic Product, the Architecture Billings Index and the Consumer Confidence Index. In addition, we noted several factors and trends within our markets that directly affected our business performance during 2015, including:

Americas

For Building Products, we experienced growth from new construction and a decline in renovation activity. However, we continue to see some regional softness in the U.S. commercial office markets and weakness in retail markets, particularly in Canada as devaluation of the Canadian Dollar impacted market growth. Our Resilient commercial flooring markets saw improvement in education demand but continuing weakness in healthcare, while retail markets showed a slight decline.

Residential markets continued to show improvement in both builder activity and renovation activity. However, due to market conditions, we experienced continued competitive pricing actions in our Wood and Resilient Flooring businesses.

Europe, Middle East and Africa (EMEA)

We experienced continued softness in commercial sectors, such as office, education and healthcare. Overall market softness was exacerbated by the decline in global oil prices which heavily impacted market growth opportunities in economies closely linked to oil, such as Russia and the Middle East. These factors combined with the significant volatility in the Russian Ruble and its overall market impact contributed to mixed results across EMEA. These trends impacted our Building Products business.

Pacific Rim

Commercial markets for our Building Products businesses grew throughout the Pacific Rim with the exception of China where the office market continues to be soft. Commercial markets grew throughout the Pacific Rim for our Resilient Flooring business including slight growth in China, driven by the healthcare and education market segments.

Pricing Initiatives. We periodically modify prices in each of our business segments due to changes in costs for raw materials and energy, and to market conditions and the competitive environment. In certain cases, realized price increases are less than the announced increases because of competitive reactions and changing market conditions. We estimate that pricing actions increased our 2015 consolidated net sales by approximately $10 million, compared to 2014.

In the fourth quarter of 2015, we implemented price increases in our Building Products business in the Pacific Rim and on select products in our Resilient and Wood Flooring businesses in Canada to offset currency devaluations. We also announced price increases on select Resilient Flooring products in Canada and in our Building Products businesses in the Americas, EMEA, and the Pacific Rim effective in the first quarter of 2016. We may implement additional pricing actions based upon future movements in raw materials prices or foreign currency valuations.

Mix. Each of our businesses offers a wide assortment of products that are differentiated by style, design and performance attributes. Pricing and margins for products within the assortment vary. Changes in the relative quantity of products purchased at the different price points can impact year-to-year comparisons of net sales and operating income. We estimate that mix improvements increased our 2015 consolidated net sales by approximately $23 million, compared to 2014.

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 individual raw material expenditures include lumber and veneers, PVC resins and plasticizers. Natural gas is also a significant input cost. Fluctuations in the prices of these inputs are generally beyond our control and have a

direct impact on our financial results. In 2015, the costs for raw materials, sourced products and energy positively impacted operating income by approximately $53 million, compared to 2014.

During 2015, we incurred approximately $9 million of severance and other charges associated with cost reduction actions in EMEA and our decision to idle one of our Building Products plants in China in 2016.

We continue to evaluate the efficiency of our manufacturing footprint and may take additional actions in support of our cost and standardization initiatives. The charges associated with any additional cost reduction initiatives could include severance and related termination benefits, fixed asset write-downs, asset impairments and accelerated depreciation and may be material to our financial statements.

See also Results of Operations for further discussion of other significant items affecting operating costs.

Employees

As of December 31, 2015, we had approximately 7,600 full-time and part-time employees worldwide, compared to approximately 7,400 employees as of December 31, 2014. The majority of the increase related to staff additions at our Alabuga, Russia mineral fiber ceiling plant, which began operating in 2015, along with higher staffing levels in our Americas flooring business.

During 2015, we negotiated collective bargaining agreements covering approximately 500 employees at two U.S. plants. Collective bargaining agreements covering approximately 150 employees at two North American plants will expire during 2016.

CRITICAL ACCOUNTING ESTIMATES

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

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

U.S. Pension Credit and Postretirement Benefit Costs We maintain pension and postretirement plans throughout the world, with the most significant plans located 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.

The discount rate is used to determine retirement plan liabilities and to determine the interest cost component of net periodic pension and postretirement cost. 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 the discount rate. As of December 31, 2015 and 2014, we assumed discount rates of 4.40% and 4.05%, respectively, for the U.S. defined benefit pension plans. As of December 31, 2015, we assumed a discount rate of 4.25% compared with a discount rate of 3.90% as of December 31, 2014 for the U.S. postretirement plans. 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 decrease in the discount rates for the U.S. pension and postretirement plans would decrease 2016 operating income by $6.1 million and a one-quarter percentage point increase in the discount rates would increase 2016 operating income by $5.8 million.

We manage two U.S. defined benefit pension plans, a qualified funded plan and a nonqualified unfunded plan. For the qualified funded plan, 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

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fees and expenses. Over the 10 year period ended December 31, 2015, the historical annualized return was approximately 5.8% compared to an average expected return of 7.4%. The actual loss on plan assets achieved for 2015 was 1.4%. 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 2015 U.S. pension credit was 7.0%. We have assumed a return on plan assets during 2016 of 6.75%. The 2016 expected return on assets was calculated in a manner consistent with 2015. A one-quarter percentage point increase or decrease in this assumption would increase or decrease 2016 operating income by approximately $4.7 million.

Contributions to the unfunded plan were $3.6 million in 2015 and were made on a monthly basis to fund benefit payments. We estimate the 2016 contributions will be approximately $4.0 million. See Note 16 to the Consolidated Financial Statements for more information.

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

	Assumptions		Actual	
	Post 65	Pre 65	Post 65	Pre 65
2014	7.0%	8.0%	12.6%	4.2%
2015	6.8%	7.5%	0.2%	(10.3)%
2016	9.0%	7.5%		

The difference between the actual and expected health care costs is amortized into earnings as described below. As of December 31, 2015, health care cost increases are estimated to decrease ratably until 2024, after which they are estimated to be constant at 4.5%. A one percentage point increase or decrease in the assumed health care cost trend rate would not have a material impact on 2016 operating income. See Note 16 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 expected remaining service period of plan participants, which is approximately eight years for our U.S. pension plans and our U.S. postretirement plans. Changes in assumptions could have significant effects on earnings in future years.

We recognized a decrease in net actuarial losses related to our U.S. pension benefit plans of $28.7 million in 2015 primarily due to changes in actuarial assumptions (most significantly a 35 basis point increase in the discount rate). The $28.7 million actuarial gain impacting our U.S. pension plans is reflected as a component of other comprehensive income in our Consolidated Statement of Earnings and Comprehensive Income along with actuarial gains and losses from our foreign pension plans and our U.S. postretirement benefit plans.

Income Taxes Our effective tax rate is primarily determined based on our pre-tax income and the statutory income tax rates in the jurisdictions in which we operate. The effective tax rate also reflects the tax impacts of items treated

differently for tax purposes than for financial reporting purposes. Some of these differences are permanent, such as expenses that are not deductible in our tax returns, and some differences are temporary, reversing over time, such as depreciation expense. These temporary differences create deferred income tax assets and liabilities. Deferred income tax assets are also recorded for net operating loss (NOL) and foreign tax credit (FTC) carryforwards.

Deferred income tax assets and liabilities are recognized by applying enacted tax rates to temporary differences that exist as of the balance sheet date. 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.

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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, forecasts of future profitability and foreign source income (FSI), 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.

Specifically with respect to the domestic FTC carryforward deferred tax asset of $27.1 million at December 31, 2015, we considered the following positive and negative evidence in assessing the need for a valuation allowance and concluded that a valuation allowance is not required:

Positive Evidence

- Our emergence from bankruptcy in 2006 created significant NOLs. The last portion of these NOLs was completely utilized during 2012. Starting in 2013, we had domestic taxable income which allowed us to begin utilizing the FTCs;

- Under U.S. tax law, approximately $43.1 million of our domestic source income in future years can be characterized as FSI to enable the utilization of our FTCs. This amount primarily represents prior year intercompany dividends associated with the FTC carryforwards. These dividends created domestic taxable income that was reduced by the utilization of domestic NOLs; and

- Forecasts of future profitability and FSI.

Negative Evidence

- Our history of FTC expirations as a result of the carryback and carryforward of the NOLs generated upon emergence from bankruptcy. All FTCs were fully utilized before the bankruptcy NOL carryback. The NOL carryback reduced the taxable income (a portion of which is considered FSI) to zero and thus the FTCs were carried forward along with the remaining portion of the NOL. The utilization of the remaining NOL carryforward reduced taxable income to zero, which caused the expiration of the FTCs; and

- Our stated position to permanently reinvest unremitted earnings of our foreign subsidiaries.

The ability to fully utilize the FTC carryforwards may be affected by the following factors:

FSI of $77.4 million is needed to fully utilize the FTC carryforward of $27.1 million before they expire in 2022. In addition to the $43.1 million of domestic source income that can be characterized as FSI in future years, $34.3 million of additional foreign source income is needed.

The main factor that could result in our inability to re-characterize domestic source income to foreign source income is a U.S. tax law change.

The main factors that could contribute to lower FSI are decreased export sales and increased allocable expenses.

As of December 31, 2015, we have recorded valuation allowances totaling $69.1 million for various federal, state, and foreign 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 14 to the Consolidated Financial Statements, our Consolidated Balance Sheet as of December 31, 2015 includes net deferred income tax assets of $282.3 million. Included in this amount are deferred federal income tax assets for FTC carryforwards of $27.1 million, state NOL deferred income tax assets of $31.2 million, and foreign NOL deferred tax assets of $52.5 million. We have established valuation allowances in the amount of $69.1 million consisting of $13.8 million for state deferred tax assets, primarily operating loss carryovers, and $55.3 million for foreign deferred tax assets, primarily foreign operating loss carryovers.

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, the amount of FSI, limitations on usage of NOL carryforwards, the impact of ongoing or potential tax audits, earnings repatriation plans, and other future tax consequences.

We estimate we will need to generate future U.S. taxable income of approximately $971.1 million for state income tax purposes during the respective realization periods (ranging from 2016 to 2035) in order to fully realize the net deferred income tax assets.

As previously disclosed in prior SEC filings, 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.

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 earlier.

Inventories Inventories are valued at the lower of cost or market, with cost for U.S. inventories determined principally on the LIFO (last-in, first-out) basis and cost for non-U.S. inventories valued on the FIFO (first-in, first-out) basis. We establish reserves for LIFO valuation adjustments and for inventory obsolescence, excess inventory and inventory expected to be sold below cost.

Approximately 77% and 73% of our total inventory in 2015 and 2014, respectively, was valued on a LIFO basis. The calculation of LIFO reserves is affected by inflation and deflation in inventory components. In recent years, our Wood Flooring business has been most susceptible to LIFO valuation volatility due to the high volatility of lumber prices and long production cycles. LIFO reserves as of December 31, 2015 declined in comparison to December 31, 2014, primarily due to declines in lumber costs.

Reserves for inventory obsolescence, excess inventory and inventory expected to be sold below cost are established when the estimated market value of inventory is below its cost. Market value is represented as the replacement cost or net realizable value of inventory. We continuously review our inventory values to determine if there are any indicators that costs exceed market values. Historically, significant indicators requiring increases to inventory valuation reserves have been the age of inventory, an anticipated decrease in demand, a shift in customer preferences and overall economic conditions. Our reserves for inventory obsolescence as of December 31, 2015 and 2014 were $3.2 million

and $2.4 million, respectively. Management believes that our inventory reserves as of December 31, 2015 and 2014 are adequate, however, actual results could differ from assumptions used to value obsolete inventory, excess inventory or inventory expected to be sold below cost and additional reserves may be required.

Impairments of Long-Lived Tangible and Intangible Assets Our indefinite-lived intangibles are primarily trademarks and brand names, which are integral to our corporate identity and expected to contribute indefinitely to our corporate cash flows. Accordingly, they have been assigned an indefinite life. We conduct our annual impairment test for non-amortizable intangible assets during the fourth quarter, although we conduct interim impairment tests if events or circumstances indicate the asset might be

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impaired. We conduct impairment tests for tangible assets and amortizable intangible assets when indicators of impairment exist, such as operating losses and/or negative cash flows. 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 assets. The estimate of an asset group s fair value is 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.

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

The 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. 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 income would be affected.

During the fourth quarter of 2014, we recorded a non-cash impairment charge of $10.0 million to reduce the carrying amount of a Wood Flooring trademark to its estimated fair value based on the results of our annual impairment test. The fair value was negatively affected by lower expected sales and profits due to the competitive environment in the U.S. residential housing market. The remaining carrying value of the Wood Flooring trademarks at December 31, 2015 was $31.9 million. Continued competitive pressure beyond our expectations could lead to future material impairments of the Wood Flooring intangible assets.

There were no impairment charges in 2015 or 2013 related to intangible assets.

We tested the tangible assets within the following reporting units for impairment:

Reporting Unit	2015	2014	2013
ABP Americas		X	
Wood Flooring		X	
AFP Pacific Rim		X	

Based upon the impairment testing in 2014, the carrying value of the tangible assets for each of these asset groups was determined to be recoverable (except as discussed below) because the related undiscounted cash flows and/or fair value exceeded the carrying value of assets.

During the third quarter of 2014, we recorded an impairment charge of $11.9 million on the tangible assets of the European Resilient Flooring business as a result of disappointing operating results. This charge was reflected within Discontinued Operations due to DLW s insolvency filing. See Note 4 to the Consolidated Financial Statements for further information.

During the second quarter of 2014, we decided to close our resilient flooring plant in Thomastown, Australia and our engineered wood flooring plant in Kunshan, China. During 2014, we recorded $2.2 million in cost of goods sold for accelerated depreciation due to the closure of the resilient flooring plant in Australia. We sold this facility in January 2015. We also recorded $4.0 million in 2014 in cost of goods sold for accelerated depreciation due to the closure of the wood flooring plant in China.

During 2014, we also made the decision to dispose of certain idle equipment at five of our wood flooring manufacturing facilities and as a result we recorded a $4.4 million impairment charge in cost of goods sold.

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

See Notes 3 and 10 to the Consolidated Financial Statements for further information.

ACCOUNTING PRONOUNCEMENTS EFFECTIVE IN FUTURE PERIODS

In May 2014, the Financial Accounting Standards Board (FASB) issued Accounting Standards Update (ASU) 2014-09 *Revenue from Contracts with Customers.* The guidance requires an entity to recognize the amount of revenue to which it expects to be entitled for the transfer of promised goods or services to a customer. The ASU will replace most existing revenue recognition guidance in U.S. GAAP when it becomes effective. In August 2015, the FASB issued ASU 2015-14, *Revenue from Contracts with Customers: Deferral of the Effective Date* which defers the effective date for ASU 2014-09 by one year to January 1, 2018, however, public business entities would be permitted to adopt the standard as of the original effective date. We have not selected a transition method and are currently evaluating the impact this guidance will have on our financial condition, results of operations and cash flows.

In June 2014, the FASB issued ASU 2014-12 *Accounting for Share-Based Payments When the Terms of an Award Provide That a Performance Target Could Be Achieved after the Requisite Service Period* which is part of ASC 718: Compensation-Stock Compensation. The guidance requires that a performance target that affects vesting and that could be achieved after the requisite service period be treated as a performance condition and should not be reflected in the estimate of the grant-date fair value of the award. The guidance is effective for annual periods beginning after December 15, 2015. The guidance can be applied prospectively for all awards granted or modified after the effective date or retrospectively to all awards with performance targets outstanding as of the beginning of the earliest annual period presented in the financial statements and to all new or modified awards thereafter. We do not expect a material impact on our financial condition, results of operations or cash flows from the adoption of this guidance.

In April 2015, the FASB issued ASU 2015-03, *Simplifying the Presentation of Debt Issuance Costs*. This standard amends existing guidance to require the presentation of debt issuance costs in the balance sheet as a deduction from the carrying amount of the related debt liability instead of a deferred charge. The new guidance is effective for annual reporting periods beginning after December 15, 2015, but early adoption is permitted. In August 2015, the FASB issued ASU 2015-15, *Presentation and Subsequent Measurement of Debt Issuance Costs Associated with Line-of-Credit Arrangements,* which was issued to address the presentation and subsequent measurement of debt issuance costs related to line-of-credit arrangements. We are currently evaluating the impact the adoption of these standards will have on our financial condition and cash flows.

In April 2015, the FASB issued ASU 2015-05, *Customer s Accounting for Fees Paid in a Cloud Computing Arrangement* which provides guidance to determine when a customer s fees paid in a cloud computing arrangement includes a software license. If a cloud computing arrangement includes a software license, the customer should

account for the software license element of the arrangement consistent with the acquisition of other software licenses. If the arrangement does not include a software license, the customer should account for a cloud computing arrangement as a service contract. The new guidance is effective for annual reporting periods beginning after December 15, 2015, but early adoption is permitted. We are currently evaluating the impact the adoption of this standard would have on our financial condition, results of operations and cash flows.

In July 2015, the FASB issued ASU 2015-11, *Simplifying the Measurement of Inventory* which requires inventory that is measured on a first-in, first-out or average cost basis to be measured at lower of cost and net realizable value, as opposed to the lower of cost or market. For inventory that is measured under the

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last-in, first-out (LIFO) basis or the retail recovery method, there is no change to current measurement requirements. This new guidance is effective for annual reporting periods beginning after December 15, 2016, but early adoption is permitted. We are currently evaluating the impact the adoption of this standard would have on our financial condition, results of operations and cash flows.

In November 2015, the FASB issued ASU 2015-17, *Balance Sheet Classification of Deferred Taxes* which requires entities with a classified balance sheet to present all deferred tax assets and liabilities as noncurrent. This new guidance is effective for annual reporting periods beginning after December 15, 2016. We are currently evaluating the impact the adoption of this standard would have on our financial condition and cash flows.

In January 2016, the FASB issued ASU 2016-01, *Recognition and Measurement of Financial Assets and Financial Liabilities* which addresses certain aspects of recognition, measurement, presentation, and disclosure of financial instruments. Most notably, this new guidance requires equity investments (except those accounted for under the equity method of accounting or those that result in consolidation of the investee) to be measured at fair value with changes in fair value recognized in net income. This new guidance is effective for annual reporting periods beginning after December 15, 2017. We are currently evaluating the impact the adoption of this standard would have on our financial condition, results of operations and cash flows.

RESULTS OF OPERATIONS

Unless otherwise indicated, net sales in these results of operations are reported based upon the AWI location where the sale was made. Please refer to Notes 3 and 4 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.

2015 COMPARED TO 2014

CONSOLIDATED RESULTS FROM CONTINUING OPERATIONS

(dollar amounts in millions)

	2015	2014	Change is (Unfavorable)
Net sales:			
Americas	$ 1,904.6	$ 1,930.2	(1.3)%
EMEA	290.0	353.4	(17.9)%
Pacific Rim	225.4	231.7	(2.7)%
Total consolidated net sales	$ 2,420.0	$ 2,515.3	(3.8)%
Operating income	$ 187.4	$ 239.1	(21.6)%

The decrease in consolidated net sales was driven by the unfavorable impact of foreign exchange of approximately $95 million. Lower volumes of $33 million were offset by $33 million of favorable price and mix.

The decrease in net sales in the Americas was driven by the unfavorable impact from foreign exchange of approximately $21 million and lower volumes, which were only partially offset by improvements in price and mix.

The decrease in net sales in the EMEA region was driven by the unfavorable impact from foreign exchange of approximately $58 million and lower volumes which were only partially offset by improvements in price and mix.

Excluding unfavorable foreign exchange impact of approximately $16 million, net sales in the Pacific Rim increased 4% as improvements in volumes and price were partially offset by unfavorable mix.

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Cost of goods sold was 75.1% of net sales in 2015, compared to 76.8% in 2014. Compared to the prior year, the reduction was caused by lower input costs, primarily lumber, PVC resins and plasticizers, partially offset by higher manufacturing and U.S. pension costs. The comparison was also impacted by $9 million of severance and other charges associated with cost reduction actions in EMEA and the idling of a Building Products plant in China in 2015, and approximately $15 million of charges in 2014 associated with the closure of our Thomastown, Australia resilient flooring plant and the closure of our Kunshan, China engineered wood flooring plant.

SG&A expenses in 2015 were $447.2 million, or 18.5% of net sales, compared to $398.5 million, or 15.8% of net sales, in 2014. The increase was primarily due to higher promotional spending in both flooring businesses and an increase in employee compensation and benefits, mostly notably higher incentive compensation accruals and U.S. pension costs. See Reportable Segment Results for additional information.

Separation costs of $34.3 million were primarily related to outside professional services and employee compensation and severance accruals incurred in conjunction with our initiative to separate our flooring business from our ceilings business.

Equity earnings from our WAVE joint venture were $66.1 million in 2015, compared to $65.1 million in 2014. See Note 9 to the Consolidated Financial Statements for further information.

Interest expense was $45.3 million in 2015, compared to $46.0 million in 2014.

Other non-operating expenses were $23.5 million in 2015, compared to $10.5 million in 2014. The increase in 2015 was primarily due to foreign exchange rate losses on the translation of unhedged cross-currency intercompany loans denominated in Russian Rubles, related to the construction of our Russian mineral fiber ceiling plant that was completed in the first quarter of 2015. Where efficient, reliable and liquid markets exist we may utilize foreign currency forward exchange contracts to hedge exposures created by cross-currency intercompany loans and dividends. Our largest unhedged foreign currency exposures are in Chinese Renminbi and Russian Rubles. As of December 31, 2015, total unhedged foreign currency-denominated intercompany loan exposures in Chinese Renminbi and Russian Rubles were $161.6 million and $49.0 million, respectively.

Income tax expense was $71.3 million and $83.2 million in 2015 and 2014, respectively. The effective tax rate for 2015 was 57.5% as compared to a rate of 44.9% for 2014. The effective tax rate for 2015 was higher than 2014 primarily due to lower pre-tax income causing a higher rate impact of unbenefitted foreign operating losses, non-deductible separation costs, a decrease in research and development tax credits as 2014 included the benefit of multiple years of such credits, and state net operating loss write-offs resulting from a change in ownership under Section 382 of the Internal Revenue Code.

Total other comprehensive income (OCI) was $8.1 million for 2015 compared to a $123.9 million loss for 2014. Foreign currency translation adjustments represent the change in the U.S. dollar value of assets and liabilities denominated in foreign currencies. Amounts in 2015 and 2014 were driven primarily by changes in the exchange rate of the Euro, the Australian dollar and the British pound. 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 OCI. The period changes are primarily due to the mark to market changes related to our natural gas hedges in both 2015 and 2014. Pension and postretirement adjustments represent actuarial gains and losses related to our

defined-benefit pension and postretirement plans. The amounts in all periods primarily related to the U.S. pension plans.

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Management s Discussion and Analysis of Financial Condition and Results of Operations

REPORTABLE SEGMENT RESULTS

Building Products

(dollar amounts in millions)

	2015	2014	Change is Favorable/ (Unfavorable)
Net sales:			
Americas	$ 805.0	$ 798.3	0.8%
EMEA	290.0	353.4	(17.9)%
Pacific Rim	136.3	142.6	(4.4)%
Total segment net sales	$ 1,231.3	$ 1,294.3	(4.9)%
Operating income	$ 264.8	$ 264.7	0.0%

Excluding the unfavorable impact from foreign exchange of approximately $76 million, Building Products net sales increased 1%, resulting from $49 million of favorable price and mix which more than offset lower volumes of $35 million.

Excluding the unfavorable impact from foreign exchange of approximately $9 million, net sales in the Americas increased 2% as favorable price and mix more than offset the impact of lower volumes.

Excluding the unfavorable impact from foreign exchange of approximately $58 million, net sales in EMEA markets decreased 2% as lower volumes were only partially offset by improvements in price and mix.

Excluding the unfavorable impact from foreign exchange of approximately $10 million, net sales in the Pacific Rim increased 2% as favorable mix and price more than offset lower volumes.

Operating income was flat but gross margin improved driven by the benefits of positive price and mix of $28 million, lower manufacturing and input costs of $8 million and higher earnings from WAVE of $1 million, which offset the margin impact of lower volumes of $22 million and higher SG&A expenses of $10 million primarily to support go-to-market investments in the Americas. Operating income was also negatively impacted by cost reduction actions in international markets including $9 million of severance and other charges associated with cost reduction actions in EMEA and our decision to idle of one of our Building Products plants in China in 2016 compared to $1 million of severance to support cost reduction actions in EMEA during 2014.

Resilient Flooring

(dollar amounts in millions)

	2015	2014	Change is Favorable/ (Unfavorable)
Net sales:			
Americas	$ 624.2	$ 623.8	0.1%
Pacific Rim	89.1	89.1	0.0%
Total segment net sales	$ 713.3	$ 712.9	0.1%
Operating income	$ 42.2	$ 61.6	(31.5)%

Excluding the unfavorable impact from foreign exchange of approximately $14 million, Resilient Flooring net sales were up 2% driven by $30 million of higher volumes which were partially offset by unfavorable price and mix of $17 million.

Excluding the unfavorable impact from foreign exchange of approximately $8 million, Americas net sales increased 1%. Higher volumes contributed 4% to this increase, driven by both the commercial and residential markets. The increase from volumes was partially offset by unfavorable price and mix, which each contributed a reduction to net sales of approximately 1%.

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Management s Discussion and Analysis of Financial Condition and Results of Operations

Excluding the unfavorable impact from foreign exchange of approximately $6 million, net sales in the Pacific Rim increased 7% as volume growth across the region was partially offset by unfavorable mix.

Operating income declined primarily due to higher SG&A expenses of $31 million and unfavorable price and mix of $19 million partially offset by lower manufacturing and input costs of $18 million and the margin impact of higher volumes of $13 million. The increase in SG&A expenses was primarily due to ongoing promotional spending to support go-to-market initiatives in the Americas and higher employee compensation and benefits. The comparison was also impacted by approximately $6 million of charges in 2014 associated with the closure of our Thomastown, Australia resilient flooring plant and by a $2 million gain on the sale of the plant in 2015.

Wood Flooring

(dollar amounts in millions)

	2015	2014	Change is Favorable/ (Unfavorable)
Total segment net sales	$ 475.4	$ 508.1	(6.4)%
Operating income (loss)	$ 19.2	($ 14.9)	Favorable

Excluding the unfavorable impact of foreign exchange of $4 million, Wood Flooring net sales declined by $28 million. Lower volumes contributed $28 million to the decline. Favorable mix was mostly offset by negative net pricing.

The improvement in operating income was driven by a decline in lumber costs that resulted in a $37 million benefit, partially offset by the margin impact of lower volumes of $10 million, higher SG&A expenses to support go-to-market activities of $4 million and unfavorable price and mix of $2 million. The comparison was also impacted by $4 million of multilayered hardwood flooring import duties recorded in 2015. Additionally, 2014 results included approximately $9 million of severance, idle equipment and other charges associated with the closure of our Kunshan, China engineered wood flooring plant, $3 million of other idle equipment charges and a non-cash impairment charge of $10 million to reduce the carrying value of a Wood Flooring trademark to its estimated fair value.

Unallocated Corporate

Unallocated corporate expense of $138.8 million increased from $72.3 million in the prior year, primarily due to separation costs of $34 million recorded in 2015 and an increase in employee compensation and benefits, most notably higher U.S. pension costs of $25 million and a $4 million increase in environmental reserves related to our Macon, Georgia facility.

FINANCIAL CONDITION AND LIQUIDITY

Cash Flow

Operating activities for 2015 provided $203.7 million of cash, compared to $208.8 million of cash provided in 2014. Lower cash earnings in 2015 were partially offset by favorable changes in working capital, primarily due to favorable timing of accounts payable and accrued expenses.

Net cash used for investing activities was $101.5 million for 2015, compared to $149.3 million in 2014. This change was primarily due to decreased purchases of property, plant and equipment.

Net cash used by financing activities was $32.3 million for 2015, compared to $3.3 million provided during 2014. Net cash used in 2015 was primarily driven by payments on long-term debt. Net cash provided in 2014 was driven by proceeds from exercised stock options and excess tax benefits from share-based awards, partially offset by payments of long-term debt.

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 generally lower during the first and fourth quarters of our fiscal year. We have a $1.3 billion senior credit facility which is composed of a $250 million revolving credit

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facility (with a $150 million sublimit for letters of credit), a $550 million Term Loan A and a $475 million Term Loan B. This $1.3 billion senior credit facility is secured by U.S. personal property, the capital stock of material U.S. subsidiaries and a pledge of 65% of the stock of our material first tier foreign subsidiaries.

Under the senior credit facility we are subject to year-end leverage tests that may trigger mandatory prepayments. If our ratio of consolidated funded indebtedness minus AWI and domestic subsidiary unrestricted cash and cash equivalents up to $100 million to consolidated earnings before interest, taxes, depreciation and amortization (EBITDA) (Consolidated Net Leverage Ratio) is greater than 3.5 to 1.0, the prepayment amount would be based on a computation of 50% of consolidated annual excess cash flows, as defined by the credit agreement. These annual payments would be made in the first quarter of the following year. No payment will be required in 2016.

The senior credit facility includes two financial covenants that require the ratio of consolidated EBITDA to consolidated cash interest expense minus cash consolidated interest income to be greater than or equal to 3.0 to 1.0 and requires the Consolidated Net Leverage Ratio to be less than or equal to 3.75 to 1.0. As of December 31, 2015, we were in compliance with all covenants of the senior credit facility.

The Revolving Credit and Term Loan A portions are currently priced at a spread of 2.50% over LIBOR and the Term Loan B portion is priced at 2.50% over LIBOR with a 1.00% LIBOR floor for its entire term. The Term Loan A and Term Loan B were both fully drawn and are currently priced on a variable interest rate basis. The following table summarizes our interest rate swaps (dollar amounts in millions):

Trade Date	Notional Amount	Interest Rate Paid	Coverage Period	Risk Coverage
March 27, 2012	$250.0	1.928%	March 2012 to March 2018	Term Loan B
March 27, 2012	$200.0	2.810%	November 2015 to March 2018	Term Loan B
April 16, 2013	$250.0	1.398%	November 2015 to March 2018	Term Loan A

These swaps are designated as cash flow hedges against changes in LIBOR for a portion of our variable rate debt. The unpaid balances of Term Loan A, the Revolving Credit Facility and Term Loan B of the credit facility may be prepaid without penalty at the maturity of their respective interest reset periods. Any amounts prepaid on the Term Loan A or Term Loan B may not be re-borrowed. As of December 31, 2015, there was no outstanding balance on the Revolving Credit Facility.

As of December 31, 2015 our outstanding long-term debt included two variable rate, tax-exempt industrial development bonds totaling $45.1 million that financed the construction of plants in prior years. These bonds have scheduled final maturities ranging from 2025 to 2041 and are remarketed by an agent on a regular basis at a market-clearing interest rate. Any portion of the bonds that are not successfully remarketed by the agent are required to be repurchased. These bonds are backed by letters of credit which will be drawn if a portion of the bond is not successfully remarketed. We have not had to repurchase any of the bonds. Prior to the planned separation of the flooring business, we intend on discharging a $10.0 million bond by providing the necessary funds to the trustee in anticipation of a planned redemption at the next interest payment date of April 1, 2016.

As a result of our planned separation of the flooring business, we intend to refinance our existing credit facilities, and may modify certain interest rate hedges. We intend to use cash on hand as well as a planned $50.0 million cash dividend from AFI to reduce total debt outstanding. The new credit facility is expected to be for $1,050 million, including $200.0 million of an undrawn revolving credit facility. We anticipate concluding this transaction contemporaneously with our separation of the flooring business.

Due to the significant decline in the value of the Russian Ruble, we received $30.0 million in cash in 2014 as a result of settling Russian Ruble forward contracts utilized to hedge the currency impact associated with intercompany loans to our Russian subsidiary. Our exposure to changes in the Ruble due to the intercompany loans is unhedged at December 31, 2015.

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Management s Discussion and Analysis of Financial Condition and Results of Operations

As of December 31, 2015, we had $244.8 million of cash and cash equivalents, $122.5 million in various foreign jurisdictions and $122.3 million in the U.S.

On December 18, 2014, we amended and increased our $75 million Accounts Receivable Securitization Facility with the Bank of Nova Scotia, under which AWI and its subsidiary, Armstrong Hardwood Flooring Company, sell their U.S. receivables to Armstrong Receivables Company LLC (ARC), a Delaware entity that is consolidated in these financial statements. The facility reflects a seasonality clause changing to $100 million from March through September, and $90 million from October through February. The maturity date has been extended from March 2016 to December 2017. As of December 31, 2015, there was no outstanding balance on the accounts receivable securitization facility. In connection with the planned separation of AFI, we intend to amend this facility, resulting in lower purchase and letter of credit commitments under the program.

On December 31, 2015, we had outstanding letters of credit totaling $68.2 million, of which $7.7 million was issued under the revolving credit facility, $60.3 million was issued under the securitization facility, and $0.2 million was issued by other banks of international subsidiaries. Letters of credit are issued to third party suppliers, insurance and financial institutions and typically can only be drawn upon in the event of AWI s failure to pay its obligations to the beneficiary.

	As of December 31, 2015		
Foreign Financing Arrangements (dollar amounts in millions)	Limit	Used	Available
Lines of Credit Available for Borrowing	$ 19.8		$ 19.8
Lines of Credit Available for Letters of Credit	0.2	$ 0.2	
Total	$ 20.0	$ 0.2	$ 19.8

These lines of credit are uncommitted, and poor operating results or credit concerns at the related foreign subsidiaries could result in the lines being withdrawn by the lenders. We have historically been able to maintain and, as needed, replace credit facilities to support our non-U.S. operations.

Since 2012, our Board of Directors has approved the construction of a mineral fiber ceiling plant in Russia (completed in the first quarter of 2015) and the expansion of our Lancaster, PA flooring plant to include the manufacture of LVT. Through December 31, 2015, we have incurred approximately $150 million related to these projects. We do not anticipate incurring any additional material spending related to these construction projects in 2016.

We believe that cash on hand and cash generated from operations, together with lines of credit, availability under our securitization facility and the availability under our $250 million revolving credit facility, will be adequate to address our foreseeable liquidity needs based on current expectations of our business operations, capital expenditures and scheduled payments of debt obligations.

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Management s Discussion and Analysis of Financial Condition and Results of Operations

2014 COMPARED TO 2013

CONSOLIDATED RESULTS FROM CONTINUING OPERATIONS

(dollar amounts in millions)

	2014	2013	Change is Favorable/ (Unfavorable)
Net sales:			
Americas	$ 1,930.2	$ 1,959.3	(1.5)%
EMEA	353.4	349.9	1.0%
Pacific Rim	231.7	218.2	6.2%
Total consolidated net sales	$ 2,515.3	$ 2,527.4	(0.5)%
Operating income	$ 239.1	$ 265.6	(10.0)%

The decrease in consolidated net sales was driven by the unfavorable impact of foreign exchange of approximately $19 million. Lower volumes of $100 million were more than offset by $106 million of favorable price and mix.

The decrease in net sales in the Americas was driven by lower volumes, which were only partially offset by improvements in price and mix.

The increase in net sales in the EMEA region was driven primarily by improvements in price, partially offset by the impact of unfavorable mix.

Excluding unfavorable foreign exchange impact of approximately $6 million, net sales in the Pacific Rim increased 9% as improvements in volumes and price were partially offset by unfavorable mix.

Cost of goods sold was 76.8% of net sales in 2014, compared to 76.5% in 2013. Compared to the prior year, lower manufacturing costs were more than offset by higher input costs. The comparison was impacted by approximately $15 million of charges in 2014 associated with the closure of our Thomastown, Australia resilient flooring plant and the closure of our Kunshan, China engineered wood flooring plant, and approximately $4 million of charges primarily associated with cost reduction actions in the Resilient Flooring business in Australia in 2013.

SG&A expenses in 2014 were $398.5 million, or 15.8% of net sales, compared to $386.9 million, or 15.3% of net sales in 2013. The increase was primarily due to higher promotional spending in both flooring businesses. See Reportable Segment Results for additional information.

Equity earnings from our WAVE joint venture were $65.1 million in 2014, compared to $59.4 million in 2013.

Interest expense was $46.0 million in 2014, compared to $68.7 million in 2013. The decrease was due to the write-off of unamortized debt financing costs associated with the refinancing of our senior credit facility that occurred during the first quarter of 2013.

Income tax expense was $83.2 million and $71.4 million in 2014 and 2013, respectively. The effective tax rate for 2014 was 44.9% as compared to a rate of 35.9% for 2013. The effective tax rate for 2014 was higher than 2013 primarily due to higher unbenefitted foreign operating losses, lower income in foreign subsidiaries with profits, and an increase in the state valuation allowance for NOLs.

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Management s Discussion and Analysis of Financial Condition and Results of Operations

REPORTABLE SEGMENT RESULTS

Building Products

(dollar amounts in millions)

	2014	2013	Change is Favorable
Net sales:			
Americas	$ 798.3	$ 780.9	2.2%
EMEA	353.4	349.9	1.0%
Pacific Rim	142.6	133.8	6.6%
Total segment net sales	$ 1,294.3	$ 1,264.6	2.3%
Operating income	$ 264.7	$ 263.1	0.6%

The improvement in Building Products net sales was driven by $46 million of favorable price and mix which more than offset the unfavorable impact of foreign exchange of approximately $10 million and lower volumes of $6 million.

Net sales in the Americas increased driven by favorable mix and price which more than offset the impact of lower volumes.

Net sales in EMEA markets increased driven by improvements in price which more than offset the impact of unfavorable mix.

Net sales in the Pacific Rim increased as volume, mix and price all improved.

Operating income increased slightly driven by the benefits of price and mix of $11 million and higher earnings from WAVE of $6 million, which offset the impact of lower volumes of $5 million, higher manufacturing and input costs of $7 million and higher SG&A expenses of $3 million. The increase in manufacturing costs was primarily associated with the construction of our plant in Russia.

Resilient Flooring

(dollar amounts in millions)

	2014	2013	Change is Favorable/ (Unfavorable)
Net sales:			
Americas	$ 623.8	$ 644.4	(3.2)%
Pacific Rim	89.1	84.4	5.6%

Total segment net sales	$ 712.9	$ 728.8	(2.2)%
Operating income	$ 61.6	$ 69.8	(11.7)%

The decline in Resilient Flooring net sales was driven by $24 million of lower volume and the unfavorable impact from foreign exchange of $6 million which more than offset favorable price and mix of $13 million.

Net sales in the Americas decreased as improvements in mix were unable to offset commercial and residential volume declines.

Net sales in the Pacific Rim increased as strong volume growth in China and India was partially offset by market driven sales declines in Australia.

Operating income declined primarily due to the margin impact of lower volumes of $10 million and higher SG&A expenses of $8 million driven by higher promotional and marketing expense. These negative impacts were only partially offset by positive mix and price of $2 million and lower manufacturing and input costs of $8 million as strong productivity more than offset higher input costs. The comparison was also impacted by approximately $6 million of charges in 2014 associated with the closure of our Thomastown, Australia resilient flooring plant and $4 million of charges in 2013 associated with cost reduction actions in Australia.

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Management s Discussion and Analysis of Financial Condition and Results of Operations

Wood Flooring

(dollar amounts in millions)

	2014	2013	Change is (Unfavorable)
Total segment net sales	$ 508.1	$ 534.0	(4.9)%
Operating (loss) income	($ 14.9)	$ 6.0	Unfavorable

The decrease in Wood Flooring net sales was driven primarily by lower volumes of $69 million which more than offset favorable price and mix of $47 million. Volume declines reflected sales lost to competition.

The decline in operating income was driven by approximately $9 million of charges primarily associated with the closure of our Kunshan, China engineered wood flooring plant and a non-cash impairment charge of $10 million to reduce the carrying value of a Wood Flooring trademark to its estimated fair value. Gross profit improved driven by the benefit of price and mix of $55 million which more than offset the impact of lower volumes of $27 million, higher SG&A expenses of $3 million and higher manufacturing and input costs of $24 million, as improvements in productivity were more than offset by higher lumber costs.

Unallocated Corporate

Unallocated corporate expense of $72.3 million decreased from $73.3 million in the prior year, due to lower incentive compensation expense, partially offset by increased spending on outside professional services and higher foreign and domestic pension expenses.

Cash Flow

Operating activities for 2014 provided $208.8 million of cash, compared to $213.7 million of cash provided in 2013. The decrease was primarily due to changes in working capital, partially offset by higher cash earnings. The working capital change was primarily driven by accounts payable and accrued expenses due to timing of payments.

Net cash used for investing activities was $149.3 million for 2014, compared to $145.8 million in 2013. This change was primarily due to increased purchases of property, plant and equipment, partially offset by higher distributions received from our WAVE joint venture.

Net cash provided by financing activities was $3.3 million for 2014, compared to $263.7 million used during 2013. Net cash provided in 2014 was driven by proceeds from exercised stock options and excess tax benefits from share-based awards, partially offset by payments of long-term debt. Net cash used in 2013 included the $261.4 million repurchase of common stock, including associated fees.

OFF-BALANCE SHEET ARRANGEMENTS

No disclosures are required pursuant to Item 303(a)(4) of Regulation S-K.

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CONTRACTUAL OBLIGATIONS

As part of our normal operations, we enter into numerous contractual obligations that require specific payments during the term of the various agreements. The following table includes amounts ongoing under contractual obligations existing as of December 31, 2015. Only known payments that are dependent solely on the passage of time are included. Obligations under contracts that contain minimum payment amounts are shown at the minimum payment amount. Contracts that contain variable payment structures without minimum payments are excluded. Purchase orders that are entered into in the normal course of business are also excluded because they are generally cancelable and not legally binding. Amounts are presented below based upon the currently scheduled payment terms. Actual future payments may differ from the amounts presented below due to changes in payment terms or events affecting the payments.

(dollar amounts in millions)	2016	2017	2018	2019	2020	Thereafter	Total
Long-term debt	$ 52.1	$ 55.3	$ 402.9	$ 4.8	$ 487.9		$ 1,003.0
Scheduled interest payments [1]	40.4	41.0	31.3	22.5	22.4	$ 18.0	175.6
Operating lease obligations, net of sublease income [2]	7.5	5.1	3.4	2.6	1.6	3.2	23.4
Unconditional purchase obligations [3]	75.1	30.7	22.4	0.7	0.2	0.9	130.0
Pension contributions [4]	7.1						7.1
Other obligations [5], [6]	11.0	0.2					11.2
Total contractual obligations	$ 193.2	$ 132.3	$ 460.0	$ 30.6	$ 512.1	$ 22.1	$ 1,350.3

(1) For debt with variable interest rates and interest rate swaps, we projected future interest payments based on market-based interest rate swap curves.

(2) Lease obligations include the minimum payments due under existing agreements with non-cancelable lease terms in excess of one year.

(3) Unconditional purchase obligations include (a) purchase contracts whereby we must make guaranteed minimum payments of a specified amount regardless of how little material is actually purchased (take or pay contracts) and (b) service agreements. Unconditional purchase obligations exclude contracts entered into during the normal course of business that are non-cancelable and have fixed per unit fees, but where the monthly commitment varies based upon usage. Cellular phone contracts are an example.

(4) Pension contributions include estimated contributions for our defined benefit pension plans. We are not presenting estimated payments in the table above beyond 2016 as funding can vary significantly from year to year based upon changes in the fair value of plan assets, funding regulations and actuarial assumptions.

(5) Other obligations include payments under severance agreements.

(6) Other obligations, does not include $150.6 million of liabilities under ASC 740 *Income Taxes.* Due to the uncertainty relating to these positions, we are unable to reasonably estimate the ultimate amount or timing of the settlement of these issues. See Note 14 to the Consolidated Financial Statements for more information.

This table excludes obligations related to postretirement benefits (retiree health care and life insurance) since we voluntarily provide these benefits. The amount of benefit payments we made in 2015 was $17.4 million. See Note 16 to the Consolidated Financial Statements for additional information regarding future expected cash payments for postretirement benefits.

We are party to supply agreements, some of which require the purchase of inventory remaining at the supplier upon termination of the agreement. The last such agreement will expire in 2018. Had these agreements terminated at December 31, 2015, we would have been obligated to purchase approximately $5.3 million of inventory. Historically, due to production planning, we have not had to purchase material amounts of product at the end of similar contracts. Accordingly, no liability has been recorded for these guarantees.

We utilize lines of credit and other commercial commitments in order to ensure that adequate funds are available to meet operating requirements. Letters of credit are issued to third-party suppliers, insurance and financial institutions and typically can only be drawn upon in the event of our failure to pay our

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Management s Discussion and Analysis of Financial Condition and Results of Operations

obligations to the beneficiary. This table summarizes the commitments we have available in the U.S. for use as of December 31, 2015. Letters of credit are currently arranged through our revolving credit facility or our securitization facility.

Other Commercial

Commitments (dollar amounts in millions)	Total Amounts Committed	Less Than 1 Year	1 3 Years	4 5 Years	Over 5 Years
Letters of credit	$ 68.2	$ 68.2			

In addition, our foreign subsidiaries had available lines of credit totaling $20.0 million of which $0.2 million was available only for letters of credit and guarantees. There were $0.2 million of letters of credit and guarantees issued under these credit lines as of December 31, 2015, leaving no additional letter of credit availability. There were no borrowings under these lines of credit as of December 31, 2015, leaving $19.8 million of unused lines of credit available for foreign borrowings.

On December 31, 2015, we had a $250 million revolving credit facility with a $150 million sublimit for letters of credit, of which $7.7 million was outstanding. There were no borrowings under the revolving credit facility. Availability under this facility totaled $242.3 million as of December 31, 2015. We also have the $90 million securitization facility which as of December 31, 2015 had letters of credit outstanding of $60.3 million and no borrowings against it. Maximum capacity under this facility was $67.4 million (of which $7.1 million was available), subject to accounts receivable balances and other collateral adjustments.

In connection with our disposition of certain assets through a variety of unrelated transactions, we have entered into contracts that included various indemnity provisions, some of which are customary for such transactions, while others hold the acquirer of the assets harmless with respect to liabilities relating to such matters as taxes, environmental and other litigation. Some of these provisions include exposure limits, but many do not. Due to the nature of the indemnities, it is not possible to estimate the potential maximum exposure under these contractual provisions. As of December 31, 2015, we had no liabilities recorded for which an indemnity claim had been received.

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ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

Market Risk

We are exposed to market risk from changes in foreign currency exchange rates, interest rates and commodity prices that could impact our results of operations, cash flows and financial condition. We use forward swaps and option contracts to hedge these exposures. Forward swap and option contracts are entered into for periods consistent with underlying exposure and do not constitute positions independent of those exposures. We use derivative financial instruments as risk management tools and not for speculative trading purposes. In addition, derivative financial instruments are entered into with a diversified group of major financial institutions in order to manage our exposure to potential nonperformance on such instruments. We regularly monitor developments in the capital markets.

Counterparty Risk

We only enter into derivative transactions with established counterparties having a credit rating of BBB or better. We monitor counterparty credit default swap levels and 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 receive cash collateral with any counterparty for our derivative transactions. As of December 31, 2015 we had no cash collateral posted or received for any of our derivative transactions. These ISDAs do not contain any credit contingent features other than those contained in our bank credit facility. Exposure to individual counterparties is controlled, and thus 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, Term Loan B, revolving credit facility and other borrowings. A hypothetical increase of one-quarter percentage point in LIBOR interest rates from December 31, 2015 levels would increase 2016 interest expense by approximately $0.7 million. A significant portion of our debt has a 1% LIBOR floor which would not be affected by a one-quarter percentage point move in LIBOR given the current interest rate environment. We also have $700 million of interest rate swaps outstanding, which fix a portion of our debt. The current portion of the interest rate swaps is included in this calculation.

As of December 31, 2015, we had interest rate swaps outstanding on Term Loan A and on Term Loan B, with notional amounts of $250 million and $450 million, respectively. We utilize interest rate swaps to minimize the fluctuations in earnings caused by interest rate volatility. Interest expense on variable-rate liabilities increases or decreases as a result of interest rate fluctuations. Under the terms of Term Loan A swap, we receive 3-month LIBOR and pay a fixed rate over the hedged period. Under the terms of the Term Loan B swaps, we receive the greater of 3-month LIBOR or the 1% LIBOR Floor and pay a fixed rate over the hedged period. The following table summarizes our interest rate swaps:

Trade Date	Notional Amount	Interest Rate Paid	Coverage Period	Risk Coverage
March 27, 2012	$250.0	1.928%	March 2012 to March 2018	Term Loan B
March 27, 2012	$200.0	2.810%	November 2015 to March 2018	Term Loan B
April 16, 2013	$250.0	1.398%	November 2015 to March 2018	Term Loan A

These swaps are designated as cash flow hedges against changes in LIBOR for a portion of our variable rate debt. The mark-to-market liability was $10.6 million at December 31, 2015.

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The table below provides information about our long-term debt obligations as of December 31, 2015, 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)	2016	2017	2018	2019	2020	After 2020	Total
Variable rate principal payments	$ 52.1	$ 55.3	$ 402.9	$ 4.8	$ 487.9		$ 1,003.0
Avg. interest rate	3.04%	3.71%	4.30%	4.61%	4.50%		4.30%

Exchange Rate Sensitivity

We manufacture and sell our products in a number of countries throughout the world and, as a result, are exposed to movements in foreign currency exchange rates. To a large extent, our global manufacturing and sales provide a natural hedge of foreign currency exchange rate movement. We use foreign currency forward exchange contracts to reduce our remaining exposure. At December 31, 2015, our major foreign currency exposures are to the Canadian Dollar, Chinese Renminbi and Australian Dollar. A 10% strengthening of all currencies against the U.S. dollar compared to December 31, 2015 levels would increase our 2016 earnings before income taxes by approximately $4.6 million, including the impact of current foreign currency forward exchange contracts.

We also use foreign currency forward exchange contracts to hedge exposures created by cross-currency intercompany loans.

The table below details our outstanding currency instruments as of December 31, 2015, all of which mature in 2016.

On balance sheet foreign exchange related derivatives

(dollar amounts in millions)	Total
Notional amounts	$ 79.4
Assets at fair value	6.2

Natural Gas Price Sensitivity

We purchase natural gas for use in the manufacture of ceiling tiles and other products, as well as to heat many of our facilities. As a result, we are exposed to fluctuations in the price of natural gas. We have a policy of reducing North American natural gas volatility through derivative instruments, including forward contracts and swaps, purchased call options, and zero-cost collars up to 24 months forward. As of December 31, 2015, we had contracts to hedge approximately $9.2 million (notional amounts) of natural gas. All of these contracts mature by August 2016. A 10% increase in North American natural gas prices compared to December 31, 2015 prices would increase our 2016 expenses by approximately $0.6 million including the impact of current hedging contracts. At December 31, 2015 we had recorded net liabilities of $0.8 million related to these contracts.

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ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

SUPPLEMENTARY DATA

Quarterly Financial Information for the Years Ended December 31, 2015 and 2014 (Unaudited)

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

Reports of Independent Registered Public Accounting Firm.

Consolidated Statements of Earnings and Comprehensive Income (Loss) for the Years Ended December 31, 2015, 2014 and 2013.

Consolidated Balance Sheets as of December 31, 2015 and 2014.

Consolidated Statements of Equity for the Years Ended December 31, 2015, 2014 and 2013.

Consolidated Statements of Cash Flows for the Years Ended December 31, 2015, 2014 and 2013.

Notes to Consolidated Financial Statements.

Schedule II for the Years Ended December 31, 2015, 2014 and 2013.

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Armstrong World Industries, Inc., and Subsidiaries

Quarterly Financial Information (unaudited)

(dollar amounts in millions, except for per share data)

	First	Second	Third	Fourth
2015				
Net sales	$ 551.4	$ 632.7	$ 658.5	$ 577.4
Gross profit	129.5	157.9	177.9	137.5
Earnings (loss) from continuing operations	3.8	29.9	30.3	(11.4)
Per share of common stock:				
Basic	$ 0.07	$ 0.53	$ 0.54	($ 0.21)
Diluted	$ 0.07	$ 0.53	$ 0.54	($ 0.21)
Price range of common stock - high	$ 58.42	$ 58.96	$ 60.70	$ 52.33
Price range of common stock - low	$ 48.60	$ 52.94	$ 46.47	$ 44.43
Dividend paid per share				
2014				
Net sales	$ 590.0	$ 659.1	$ 678.9	$ 587.3
Gross profit	142.1	147.0	168.0	126.2
Earnings from continuing operations	18.1	26.6	46.7	10.6
Per share of common stock:				
Basic	$ 0.33	$ 0.48	$ 0.84	$ 0.19
Diluted	$ 0.33	$ 0.48	$ 0.84	$ 0.19
Price range of common stock - high	$ 61.90	$ 58.00	$ 59.90	$ 56.03
Price range of common stock - low	$ 51.31	$ 50.98	$ 48.35	$ 44.00
Dividend paid per share				

Note: The net sales and gross profit amounts above are reported on a continuing operations basis. The sum of the quarterly earnings per share data may not equal the total year amounts due to changes in the average shares outstanding and, for diluted data, the exclusion of the anti-dilutive effect in certain quarters.

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Armstrong World Industries, Inc., and Subsidiaries

Quarterly Financial Information (unaudited)

(dollar amounts in millions, except for per share data)

Fourth Quarter 2015 Compared With Fourth Quarter 2014 Continuing Operations

Net sales of $577.4 million in the fourth quarter of 2015 decreased from net sales of $587.3 million in the fourth quarter of 2014. Net sales increased $7 million or 2% in the Americas. Net sales in EMEA decreased $12 million, or 14%, due to the unfavorable impact of foreign exchange. Net sales in the Pacific Rim decreased $5 million or 8%, due to the unfavorable impact of foreign exchange.

Excluding the unfavorable impact of foreign exchange of $17 million, Building Products net sales increased by $3 million driven by favorable price and mix, partially offset by lower volumes. Excluding the unfavorable impact of foreign exchange of $4 million, Resilient Flooring net sales increased by $6 million due to higher sales in the Americas and the Pacific Rim. Wood Flooring net sales increased $2 million or 2% due to higher volumes.

For the fourth quarter of 2015, cost of goods sold was 76.2% of net sales, compared to 78.5% in 2014. During the fourth quarter of 2015, we incurred approximately $5 million and $4 million in cost of goods sold and selling, general and administrative (SG&A) expenses, respectively, associated with cost reduction actions in EMEA and our decision to idle one of our Building Products plants in China.

SG&A expenses for the fourth quarter of 2015 were $127.7 million, or 22.1% of net sales compared to $94.2 million, or 16.0% of net sales, for the fourth quarter of 2014. In addition to the aforementioned cost reduction charges recorded in the fourth quarter of 2015, the increase was primarily due to higher promotional spending in both flooring businesses, an increase in employee compensation and benefits, mostly notably higher incentive compensation accruals and U.S. pension costs and an environmental reserve accrual at our Macon, Georgia facility.

In the fourth quarter of 2015, we recorded $17.5 million of separation costs primarily related to outside professional services and employee compensation and severance accruals incurred in connection with our initiative to separate our flooring business from our ceilings business.

Equity earnings in the fourth quarters of 2015 and 2014 were $16.5 million and $13.9 million, respectively.

Operating income was $8.8 million in the fourth quarter of 2015 compared to $35.9 million in the fourth quarter of 2014.

Interest expense in the fourth quarters of 2015 and 2014 was $11.4 million and $11.7 million, respectively.

Fourth quarter income tax expense was $1.1 million on a pre-tax loss of $10.3 million in 2015 compared to income tax expense of $13.0 million on pre-tax income of $23.6 million in 2014. Excluding the impact of the decrease in pre-tax earnings, the effective tax rate for the fourth quarter of 2015 was flat in comparison to the same period in 2014.

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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, 2015.

KPMG LLP, an independent registered public accounting firm, audited our internal control over financial reporting as of December 31, 2015, as stated in their report included herein.

/s/ Matthew J. Espe
Matthew J. Espe
Director, President and Chief Executive Officer

/s/ David S. Schulz
David S. Schulz
Senior Vice President and Chief Financial Officer

/s/ Stephen F. McNamara
Stephen F. McNamara
Vice President and Corporate Controller

February 22, 2016

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Report of Independent Registered Public Accounting Firm

The Board of Directors and Shareholders

Armstrong World Industries, Inc.:

We have audited Armstrong World Industries, Inc. and subsidiaries (the Company) internal control over financial reporting as of December 31, 2015, based on criteria established in *Internal Control-Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). 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 conducted our audit in accordance with the standards of the Public Company Accounting Oversight Board (United States). 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 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.

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.

In our opinion, Armstrong World Industries, Inc. and subsidiaries maintained, in all material respects, effective internal control over financial reporting as of December 31, 2015, based on criteria established in *Internal Control-Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO).

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), the consolidated balance sheets of the Company as of December 31, 2015 and 2014, and the related consolidated statements of earnings and comprehensive income (loss), equity, and cash flows for each of the years in the three-year period ended December 31, 2015, and our report dated February 22, 2016 expressed an unqualified opinion on those consolidated financial statements.

/s/ KPMG LLP

Philadelphia, Pennsylvania

February 22, 2016

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Report of Independent Registered Public Accounting Firm

The Board of Directors and Shareholders

Armstrong World Industries, Inc.:

We have audited the accompanying consolidated balance sheets of Armstrong World Industries, Inc. and subsidiaries (the Company) as of December 31, 2015 and 2014, and the related consolidated statements of earnings and comprehensive income (loss), equity and cash flows for each of the years in the three-year period ended December 31, 2015. In connection with our audits of the consolidated financial statements, we also have audited the financial statement schedule of valuation and qualifying reserves. These consolidated financial statements and financial statement schedule are the responsibility of the Company s management. Our responsibility is to express an opinion on these consolidated financial statements and financial statement schedule based on our audits.

We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of Armstrong World Industries, Inc. and subsidiaries as of December 31, 2015 and 2014, and the results of their operations and their cash flows for each of the years in the three-year period ended December 31, 2015, in conformity with U.S. generally accepted accounting principles. Also in our opinion, the related financial statement schedule, when considered in relation to the basic consolidated financial statements taken as a whole, presents fairly, in all material respects, the information set forth therein.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), the Company s internal control over financial reporting as of December 31, 2015, based on criteria established in *Internal Control-Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO), and our report dated February 22, 2016 expressed an unqualified opinion on the effectiveness of the Company s internal control over financial reporting.

/s/ KPMG LLP

Philadelphia, Pennsylvania

February 22, 2016

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Armstrong World Industries, Inc., and Subsidiaries

Consolidated Statements of Earnings and Comprehensive Income (Loss)

(amounts in millions, except per share data)

	Years Ended December 31,		
	2015	2014	2013
Net sales	$ 2,420.0	$ 2,515.3	$ 2,527.4
Cost of goods sold	1,817.2	1,932.0	1,934.4
Gross profit	602.8	583.3	593.0
Selling, general and administrative expenses	447.2	398.5	386.9
Separation costs	34.3		
Intangible asset impairments		10.8	
Restructuring charges, net			(0.1)
Equity earnings from joint venture	(66.1)	(65.1)	(59.4)
Operating income	187.4	239.1	265.6
Interest expense	45.3	46.0	68.7
Other non-operating expense	23.5	10.5	2.0
Other non-operating (income)	(5.3)	(2.6)	(3.8)
Earnings from continuing operations before income taxes	123.9	185.2	198.7
Income tax expense	71.3	83.2	71.4
Earnings from continuing operations	52.6	102.0	127.3
Net (loss) from discontinued operations, net of tax benefit of ($-), ($-) and ($-)		(23.7)	(26.8)
Gain (loss) on disposal of discontinued business, net of tax benefit of ($41.8), ($2.5) and ($3.6)	41.6	(14.5)	(6.4)
Net gain (loss) from discontinued operations	41.6	(38.2)	(33.2)
Net earnings	$ 94.2	$ 63.8	$ 94.1
Other comprehensive income (loss), net of tax:			
Foreign currency translation adjustments	(25.5)	(29.6)	(8.8)
Derivative gain (loss)	0.7	(3.3)	18.5
Pension and postretirement adjustments	32.9	(91.0)	90.1
Total other comprehensive income (loss)	8.1	(123.9)	99.8

Total comprehensive income (loss)	$ 102.3	($ 60.1)	$ 193.9
Earnings per share of common stock, continuing operations:			
Basic	$ 0.95	$ 1.85	$ 2.19
Diluted	$ 0.94	$ 1.83	$ 2.17
Earnings (loss) per share of common stock, discontinued operations:			
Basic	$ 0.74	($ 0.70)	($ 0.57)
Diluted	$ 0.74	($ 0.69)	($ 0.57)
Net earnings per share of common stock:			
Basic	$ 1.69	$ 1.15	$ 1.62
Diluted	$ 1.68	$ 1.14	$ 1.60
Average number of common shares outstanding:			
Basic	55.5	55.0	57.8
Diluted	55.9	55.4	58.4

See accompanying notes to consolidated financial statements beginning on page 52.

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Armstrong World Industries, Inc., and Subsidiaries

Consolidated Balance Sheets

(amounts in millions, except share data)

	December 31, 2015	December 31, 2014
Assets		
Current assets:		
Cash and cash equivalents	$ 244.8	$ 185.3
Accounts and notes receivable, net	184.3	195.2
Inventories, net	344.2	335.5
Deferred income taxes	35.5	31.4
Income tax receivable	11.1	5.3
Other current assets	60.9	58.8
Total current assets	880.8	811.5
Property, plant, and equipment, less accumulated depreciation and amortization of $718.6 and $644.3, respectively	1,096.3	1,062.4
Prepaid pension costs	8.3	7.4
Investment in joint venture	130.8	129.0
Intangible assets, net	489.7	501.4
Deferred income taxes	21.0	26.6
Income tax receivable	2.4	
Other noncurrent assets	62.6	67.9
Total assets	$ 2,691.9	$ 2,606.2
Liabilities and Shareholders Equity		
Current liabilities:		
Current installments of long-term debt	$ 52.1	$ 39.6
Accounts payable and accrued expenses	380.4	345.5
Income tax payable	3.2	2.5
Deferred income taxes	0.6	0.5
Total current liabilities	436.3	388.1
Long-term debt, less current installments	950.9	1,003.0
Postretirement benefit liabilities	172.4	201.5
Pension benefit liabilities	107.6	115.5
Other long-term liabilities	49.6	53.2
Income tax payable	92.3	51.1
Deferred income taxes	114.0	144.7
Total noncurrent liabilities	1,486.8	1,569.0

Shareholders equity:				
Common stock, $0.01 par value per share, authorized 200 million shares; issued 60,416,446 shares, outstanding 55,359,064 shares in 2015 and 60,183,535 shares issued, 55,126,153 outstanding shares in 2014		0.6		0.6
Capital in excess of par value		1,151.8		1,134.4
Retained earnings		365.2		271.0
Treasury stock, at cost, 5,057,382 shares		(261.4)		(261.4)
Accumulated other comprehensive (loss)		(487.4)		(495.5)
Total shareholders equity		768.8		649.1
Total liabilities and shareholders equity	$	2,691.9	$	2,606.2

See accompanying notes to consolidated financial statements beginning on page 52.

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Armstrong World Industries, Inc., and Subsidiaries

Consolidated Statements of Equity

(amounts in millions, except share data)

	Common Stock				Treasury Stock			
	Shares	Amount	Capital in Excess of Par Value	Retained Earnings	Shares	Amount	Accumulated Other Comprehensive Income (Loss)	Total
December 31, 2012	58,934,050	$ 0.6	$ 1,076.8	$ 113.1			($ 471.4)	$ 719.1
Stock issuance, net	530,259							
Share-based employee compensation			21.6					21.6
Net earnings				94.1				94.1
Repurchase of common stock	(5,057,382)				5,057,382	($ 261.4)		(261.4)
Other comprehensive income							99.8	99.8
December 31, 2013	54,406,927	$ 0.6	$ 1,098.4	$ 207.2	5,057,382	($ 261.4)	($ 371.6)	$ 673.2
Stock issuance, net	719,226							
Share-based employee compensation			36.0					36.0
Net earnings				63.8				63.8
Other comprehensive loss							(123.9)	(123.9)
December 31, 2014	55,126,153	$ 0.6	$ 1,134.4	$ 271.0	5,057,382	($ 261.4)	($ 495.5)	$ 649.1
Stock issuance, net	232,911							
Share-based employee compensation			17.4					17.4
Net earnings				94.2				94.2
Other comprehensive income							8.1	8.1

December 31, 2015	55,359,064	$ 0.6	$ 1,151.8	$ 365.2	5,057,382	($ 261.4)	($ 487.4)	$ 768.8

See accompanying notes to consolidated financial statements beginning on page 52.

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Armstrong World Industries, Inc., and Subsidiaries

Consolidated Statements of Cash Flows

(amounts in millions)

	Years Ended December 31,		
	2015	2014	2013
Cash flows from operating activities:			
Net earnings	$ 94.2	$ 63.8	$ 94.1
Adjustments to reconcile earnings to net cash provided by operating activities:			
Depreciation and amortization	118.3	129.4	109.0
Write off of debt financing costs			18.9
Loss on disposal of discontinued operations	0.2	17.0	10.0
Impairment on assets of discontinued operations		11.9	
Fixed and intangible asset impairments		15.8	
Deferred income taxes	(48.5)	33.1	37.0
Share-based compensation	13.4	12.7	15.9
Equity earnings from joint venture	(66.1)	(65.1)	(59.4)
U.S. pension expense (credit)	25.2	0.6	(2.1)
Non-cash foreign currency translation on intercompany loans	19.8	37.2	
Other, non-cash adjustments, net	(1.6)	(2.7)	(4.6)
Changes in operating assets and liabilities:			
Receivables	2.7	(6.2)	(8.8)
Inventories	(15.7)	(26.8)	(11.9)
Other current assets	(7.3)	(9.7)	(9.2)
Other noncurrent assets	9.8	(2.9)	7.1
Accounts payable and accrued expenses	49.3	(6.1)	37.4
Income taxes payable	33.6	24.2	16.3
Other long-term liabilities	(22.2)	(21.0)	(35.3)
Other, net	(1.4)	3.6	(0.7)
Net cash provided by operating activities	203.7	208.8	213.7
Cash flows from investing activities:			
Purchases of property, plant and equipment	(170.7)	(222.9)	(213.7)
Return of investment from joint venture	64.2	67.9	61.1
Proceeds from (payment of) company-owned life insurance, net	2.2	(0.5)	(0.4)
Proceeds from the sale of assets	2.8	7.9	7.2
Proceeds from settlement of note receivable		2.4	
Net cash effect from deconsolidation of subsidiary		(4.1)	
Net cash (used for) investing activities	(101.5)	(149.3)	(145.8)
Cash flows from financing activities:			

Proceeds from revolving credit facility and other short-term debt		122.8	
Payments of revolving credit facility and other short-term debt		(122.8)	
Proceeds from long-term debt			1,111.0
Payments of long-term debt	(39.5)	(23.9)	(1,115.5)
Financing costs			(7.2)
Special dividends paid	(1.2)	(1.3)	(1.4)
Excess tax benefits from share-based awards		8.4	
Proceeds from exercised stock options	6.4	17.8	8.6
Proceeds from company-owned life insurance loans, net	2.0	2.3	2.2
Payment for treasury stock acquired			(261.4)
Net cash (used for) provided by financing activities	(32.3)	3.3	(263.7)
Effect of exchange rate changes on cash and cash equivalents	(10.4)	(12.7)	(5.4)
Net increase (decrease) in cash and cash equivalents	59.5	50.1	(201.2)
Cash and cash equivalents at beginning of year	185.3	135.2	336.4
Cash and cash equivalents at end of year	244.8	185.3	135.2
Cash and cash equivalents at end of year of discontinued operations			22.9
Cash and cash equivalents at end of year of continuing operations	$ 244.8	$ 185.3	$ 112.3
Supplemental Cash Flow Disclosures:			
Interest paid	$ 39.4	$ 40.2	$ 42.4
Income taxes paid, net	$ 44.4	$ 15.0	$ 14.4
Amounts in accounts payable for capital expenditures	$ 14.3	$ 18.7	$ 15.3

See accompanying notes to consolidated financial statements beginning on page 52.

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Armstrong World Industries, Inc., and Subsidiaries

Notes to Consolidated Financial Statements

(dollar amounts in millions, except share data)

NOTE 1. BUSINESS

Armstrong World Industries, Inc. (AWI) is a Pennsylvania corporation incorporated in 1891. When we refer to we, our and us in these notes, we are referring to AWI and its subsidiaries. We use the term AWI when we are referring solely to Armstrong World Industries, Inc.

On February 23, 2015, we announced that our board of directors unanimously approved a plan to separate our Resilient Flooring and Wood Flooring segments from our Building Products (Ceilings) segment. The separation will be effected by allocating the assets and liabilities related primarily to the Resilient Flooring and Wood Flooring segments to Armstrong Flooring, Inc. (AFI) and then distributing the common stock of AFI to AWI s shareholders. The separation and distribution will result in AWI and AFI becoming two independent, publicly-traded companies, with AFI owning and operating the Resilient Flooring and Wood Flooring segments and AWI continuing to own and operate the Building Products (Ceilings) segment. Separation costs of $34.3 million for 2015 primarily relate to outside professional services and employee compensation and severance accruals. We expect the effective date of the separation to be near the end of the first quarter of 2016.

In October 2006, the Armstrong World Industries, Inc. Asbestos Personal Injury Settlement Trust (Asbestos PI Trust) was created to address AWI s personal injury (including wrongful death) asbestos-related liability and received a distribution of 37,000,000 shares of our common stock. All present and future asbestos-related personal injury claims against AWI, including contribution claims of co-defendants but excluding certain foreign claims against subsidiaries, arising directly or indirectly out of AWI s pre-filing use of, or other activities involving, asbestos are channeled to the Asbestos PI Trust.

From the fourth quarter of 2012 through the fourth quarter of 2014, the Asbestos PI Trust sold 20,448,362 shares of our common stock. In 2015, the Asbestos Trust sold 4,281,884 shares of our common stock. We did not sell any shares and did not receive any proceeds from these transactions. As a result of these transactions, the Asbestos PI Trust currently holds approximately 9% of our outstanding shares.

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, 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 Consolidated Financial Statements and related notes and schedule thereto have been recast to conform to the 2015 presentation.

Revenue Recognition. We recognize revenue from the sale of products when persuasive evidence of an arrangement exists, title and risk of loss transfers to the customers, prices are fixed and determinable, and it is reasonably assured the related accounts receivable is collectible. Our standard sales terms are Free On Board (FOB) shipping point. We have some sales terms that are FOB destination. Our products are sold with normal and customary return provisions. Sales discounts are deducted immediately from the sales invoice. Provisions, which are recorded as a reduction of revenue, are made for the estimated cost of rebates, promotional programs and warranties. We defer recognizing revenue if special sales agreements, established at the time of sale, warrant this treatment.

Sales Incentives. Sales incentives are reflected as a reduction of net sales.

Shipping and Handling Costs. Shipping and handling costs are reflected in cost of goods sold.

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

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Armstrong World Industries, Inc., and Subsidiaries

Notes to Consolidated Financial Statements

(dollar amounts in millions, except share data)

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

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 16 to the Consolidated Financial Statements for disclosures on pension and postretirement benefits.

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

We reduce the carrying amounts of deferred tax assets by a valuation allowance if, based on the available evidence, it is more likely than not that such assets will not be realized. The need to establish valuation allowances for deferred tax assets is assessed quarterly. In assessing the requirement for, and amount of, a valuation allowance in accordance with the more likely than not standard, we give appropriate consideration to all positive and negative evidence related to the realization of the deferred tax assets. This assessment considers, among other matters, the nature, frequency and severity of current and cumulative losses, forecasts of future profitability and foreign source income, 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 earlier.

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

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

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 the building products industries in various geographic regions. No one customer accounted for 10% or more of our total consolidated net sales in the years 2015, 2014, and 2013. We monitor the creditworthiness of our customers and generally do not require collateral.

Receivables. We sell the vast majority of our products to select, pre-approved customers using customary trade terms that allow for payment in the future. Customer trade receivables, customer notes receivable 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 current receivables are classified as operating cash flows on the consolidated statements of cash flows.

We establish credit-worthiness 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. As events occur, which 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.

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Armstrong World Industries, Inc., and Subsidiaries

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(dollar amounts in millions, except share data)

Inventories. Inventories are valued at the lower of cost or market. Inventories also include certain samples used in ongoing sales and marketing activities. See Note 6 to the Consolidated Financial Statements for further information on our accounting for inventories.

Property Plant and Equipment. Property plant and equipment is recorded at cost reduced by accumulated depreciation. Depreciation expense is recognized on a straight-line basis over the assets estimated useful lives. Machinery and equipment includes manufacturing equipment (depreciated over 3 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 quick obsolescence or wear out quickly, such as tooling and engraving equipment, are depreciated over shorter periods (3 to 7 years). Heavy production equipment, such as conveyors and production presses, are depreciated over longer periods (10 to 15 years). Buildings are depreciated over 15 to 30 years, depending on factors such as type of construction and use. Computer software is depreciated over 3 to 7 years.

Property, plant and equipment are tested for impairment when indicators of impairment are present, such as operating losses and/or negative cash flows. 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 assets. The estimate of an asset group s fair value is 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.

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

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.

Intangible Assets. Our definite-lived intangible assets are primarily customer relationships (amortized over 20 years) and developed technology (amortized over 15 years). We review significant definite-lived intangible assets for impairment when indicators of impairment exist. We review our businesses for indicators of impairment such as operating losses and/or negative cash flows. 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 assets. The estimate of an asset group s fair value is 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.

Our indefinite-lived intangibles are primarily trademarks and brand names, which are integral to our corporate identity and expected to contribute indefinitely to our cash flows. Accordingly, they have been assigned an indefinite life. We perform annual impairment tests during the fourth quarter on these indefinite-lived intangibles. These assets undergo more frequent tests if an indication of possible impairment exists.

The principal assumption used in our impairment tests for definite-lived intangible assets is future operating profit adjusted for depreciation and amortization. The principal assumptions used in our impairment tests for indefinite-lived intangible assets include revenue growth rate, discount rate and royalty rate. Revenue growth rate and future operating profit assumptions are derived from those utilized in our operating plan and strategic planning

Armstrong World Industries, Inc., and Subsidiaries

Notes to Consolidated Financial Statements

(dollar amounts in millions, except share data)

processes. The discount rate assumption is calculated based upon an estimated weighted average cost of equity 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 asset to the overall profits of the reporting unit. Methodologies used for valuing our intangible assets did not change from prior periods.

See Note 10 to the Consolidated Financial Statements for disclosure on intangible assets.

Foreign Currency Transactions. Assets and liabilities of our subsidiaries operating outside the United States which account 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 income (loss) within shareholders equity. Gains or losses on foreign currency transactions are recognized through the statement of earnings.

Financial Instruments and Derivatives. From time to time, we use derivatives and other financial instruments to offset the effect of currency, interest rate and commodity price variability. See Notes 17 and 18 to the Consolidated Financial Statements for further discussion.

Share-based Employee Compensation. For awards with only service and performance conditions that have a graded vesting schedule, we recognize compensation expense on a straight-line basis over the vesting period for the entire award. See Note 21 to the Consolidated Financial Statements for additional information on share-based employee compensation.

Subsequent Events. We have evaluated subsequent events for potential recognition and disclosure through the date the consolidated financial statements included in the Annual Report on Form 10-K were issued.

Recently Adopted Accounting Standards

In April 2014, the Financial Accounting Standards Board (FASB) issued Accounting Standards Update (ASU) 2014-08 Reporting Discontinued Operations and Disclosures of Disposals of Components of an Entity which is part of ASC 205: Presentation of Financial Statements and ASC 360: Property, Plant and Equipment. The amendments in this guidance change the requirements for reporting discontinued operations. Under the new guidance a disposal of a component of an entity or a group of components is required to be reported in discontinued operations if the disposal represents a strategic shift that has (or will have) a major effect on an entity s operations and financial results. The guidance is effective prospectively for disposals that occur within annual periods beginning on or after December 15, 2014. There was no impact on our financial condition, results of operations or cash flows as a result of the adoption of this guidance.

In May 2015, the FASB issued ASU 2015-07, *Disclosures for Investments in Certain Entities That Calculate Net Asset Value per Share (or Its Equivalent).* This standard removes the requirement to categorize investments within the fair value hierarchy when fair value is measured using the net asset value per share practical expedient. We do not

hold any such investments on our Consolidated Balance Sheets, however, the assets held in trust for our defined benefit pension plan include such investments. The new guidance is effective for annual reporting periods beginning after December 15, 2015, but early adoption is permitted. We early adopted this guidance as of December 31, 2015 and have applied this guidance to our disclosures of defined benefit pension plan assets as of and for the years ended December 31, 2015 and 2014. See Note 16 to the Consolidated Financial Statements for disclosures on pension and postretirement benefits.

Recently Issued Accounting Standards

In May 2014, the FASB issued ASU 2014-09 *Revenue from Contracts with Customers* . The guidance requires an entity to recognize the amount of revenue to which it expects to be entitled for the transfer of promised goods or services to a customer. The ASU will replace most existing revenue recognition guidance in U.S. GAAP when it becomes effective. In August 2015, the FASB issued ASU 2015-14, *Revenue from Contracts with Customers: Deferral of the Effective Date* which defers the effective date for ASU 2014-09 by one year to January 1, 2018, however, public business entities would be permitted to adopt the standard as of the original effective date. We have not selected a transition method and are currently evaluating the impact this guidance will have on our financial condition, results of operations and cash flows.

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(dollar amounts in millions, except share data)

In June 2014, the FASB issued ASU 2014-12 *Accounting for Share-Based Payments When the Terms of an Award Provide That a Performance Target Could Be Achieved after the Requisite Service Period* which is part of ASC 718: Compensation-Stock Compensation. The guidance requires that a performance target that affects vesting and that could be achieved after the requisite service period be treated as a performance condition and should not be reflected in the estimate of the grant-date fair value of the award. The guidance is effective for annual periods beginning after December 15, 2015. The guidance can be applied prospectively for all awards granted or modified after the effective date or retrospectively to all awards with performance targets outstanding as of the beginning of the earliest annual period presented in the financial statements and to all new or modified awards thereafter. We do not expect a material impact on our financial condition, results of operations or cash flows from the adoption of this guidance.

In April 2015, the FASB issued ASU 2015-03, *Simplifying the Presentation of Debt Issuance Costs*. This standard amends existing guidance to require the presentation of debt issuance costs in the balance sheet as a deduction from the carrying amount of the related debt liability instead of a deferred charge. The new guidance is effective for annual reporting periods beginning after December 15, 2015, but early adoption is permitted. In August 2015, the FASB issued ASU 2015-15, *Presentation and Subsequent Measurement of Debt Issuance Costs Associated with Line-of-Credit Arrangements,* which was issued to address the presentation and subsequent measurement of debt issuance costs related to line-of-credit arrangements. We are currently evaluating the impact the adoption of these standards will have on our financial condition and cash flows.

In April 2015, the FASB issued ASU 2015-05, *Customer s Accounting for Fees Paid in a Cloud Computing Arrangement* which provides guidance to determine when a customer s fees paid in a cloud computing arrangement includes a software license. If a cloud computing arrangement includes a software license, the customer should account for the software license element of the arrangement consistent with the acquisition of other software licenses. If the arrangement does not include a software license, the customer should account for a cloud computing arrangement as a service contract. The new guidance is effective for annual reporting periods beginning after December 15, 2015, but early adoption is permitted. We are currently evaluating the impact the adoption of this standard would have on our financial condition, results of operations and cash flows.

In July 2015, the FASB issued ASU 2015-11, *Simplifying the Measurement of Inventory* which requires inventory that is measured on a first-in, first-out or average cost basis to be measured at lower of cost and net realizable value, as opposed to the lower of cost or market. For inventory that is measured under the last-in, first-out (LIFO) basis or the retail recovery method, there is no change to current measurement requirements. This new guidance is effective for annual reporting periods beginning after December 15, 2016, but early adoption is permitted. We are currently evaluating the impact the adoption of this standard would have on our financial condition, results of operations and cash flows.

In November 2015, the FASB issued ASU 2015-17, *Balance Sheet Classification of Deferred Taxes* which requires entities with a classified balance sheet to present all deferred tax assets and liabilities as noncurrent. This new guidance is effective for annual reporting periods beginning after December 15, 2016. We are currently evaluating the impact the adoption of this standard would have on our financial condition and cash flows.

In January 2016, the FASB issued ASU 2016-01, *Recognition and Measurement of Financial Assets and Financial Liabilities* which addresses certain aspects of recognition, measurement, presentation, and disclosure of financial instruments. Most notably, this new guidance requires equity investments (except those accounted for under the equity method of accounting or those that result in consolidation of the investee) to be measured at fair value with changes in fair value recognized in net income. This new guidance is effective for annual reporting periods beginning after December 15, 2017. We are currently evaluating the impact the adoption of this standard would have on our financial condition, results of operations and cash flows.

NOTE 3. NATURE OF OPERATIONS

Building Products produces suspended mineral fiber, soft fiber and metal ceiling systems for use in commercial, institutional and residential settings. In addition, our Building Products segment sources

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complementary ceiling products. Our products, which are sold worldwide, are available in numerous colors, performance characteristics and designs, and offer attributes such as acoustical control, rated fire protection and aesthetic appeal. Commercial ceiling materials and accessories are sold to resale distributors and to ceiling systems contractors. Residential ceiling products are sold in North America primarily to wholesalers and retailers (including large home centers). Our Worthington Armstrong Venture (WAVE) joint venture with Worthington Industries, Inc. manufactures suspension system (grid) products which are sold by both us and WAVE.

Resilient Flooring designs, manufactures, sources and sells a broad range of floor coverings primarily for homes and commercial and institutional buildings. Manufactured products in this segment include vinyl sheet, vinyl tile, and luxury vinyl tile (LVT) flooring. In addition, our Resilient Flooring segment sources and sells laminate flooring products, vinyl tile products, vinyl sheet products, LVT products, linoleum products, adhesives, and installation and maintenance materials and accessories. Resilient Flooring products are offered in a wide variety of types, designs, colors and installation options. We sell these products to independent wholesale flooring distributors, large home centers, retailers, contractors and to the manufactured homes industry, and secure specifications for these products through architects, designers and end users. When market conditions and available capacity warrant, we also provide product on an original equipment manufacturer (OEM) basis to other flooring companies.

Wood Flooring designs, manufactures, sources and sells hardwood flooring products for use in new residential construction and renovation, with some commercial applications in stores, restaurants and high-end offices. The product offering includes pre-finished solid and engineered wood floors in various wood species, and related accessories. Virtually all of our Wood Flooring sales are in North America. Our Wood Flooring products are generally sold to independent wholesale flooring distributors, large home centers, retailers and flooring contractors. When market conditions and available capacity warrant, we also provide product on an OEM basis to other flooring companies

Unallocated Corporate includes assets, liabilities, income and expenses that have not been allocated to the business units. Balance sheet items classified as Unallocated Corporate are primarily income tax related accounts, cash and cash equivalents, the Armstrong brand name, the U.S. pension and long-term debt. Expenses for our corporate departments and certain benefit plans are allocated to the reportable segments based on known metrics, such as specific activity or headcount. The remaining items, which cannot be attributed to the other reportable segments without a high degree of generalization, are reported in Unallocated Corporate.

	Building Products	Resilient Flooring	Wood Flooring	Unallocated Corporate	Total
For the year ended 2015					
Net sales to external customers	$ 1,231.3	$ 713.3	$ 475.4		$ 2,420.0
Equity (earnings) from joint venture	(66.1)				(66.1)
Segment operating income (loss)	264.8	42.2	19.2	($ 138.8)	187.4

Segment assets	1,068.9	510.2	337.4	775.4	2,691.9
Depreciation and amortization	67.6	26.1	12.0	12.6	118.3
Investment in joint venture	130.8				130.8
Purchases of property, plant and equipment	86.7	40.8	20.8	22.4	170.7

	Building Products	Resilient Flooring	Wood Flooring	Unallocated Corporate	Total
For the year ended 2014					
Net sales to external customers	$ 1,294.3	$ 712.9	$ 508.1		$ 2,515.3
Equity (earnings) from joint venture	(65.1)				(65.1)
Segment operating income (loss)	264.7	61.6	(14.9)	($ 72.3)	239.1
Segment assets	1,079.7	492.7	329.8	704.0	2,606.2
Depreciation and amortization [1]	66.0	29.6	16.5	11.3	123.4
Asset impairment[1]	0.4		15.4		15.8
Investment in joint venture	129.0				129.0
Purchases of property, plant and equipment [1]	128.1	51.6	26.0	11.4	217.1

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	Building Products	Resilient Flooring	Wood Flooring	Unallocated Corporate	Total
For the year ended 2013					
Net sales to external customers	$ 1,264.6	$ 728.8	$ 534.0		$ 2,527.4
Equity (earnings) from joint venture	(59.4)				(59.4)
Segment operating income (loss)	263.1	69.8	6.0	($ 73.3)	265.6
Segment assets	1,071.9	462.9	335.2	852.0	2,722.0
Depreciation and amortization [1]	56.3	25.8	11.4	9.0	102.5
Investment in joint venture	132.0				132.0
Purchases of property, plant and equipment [1]	134.5	50.7	8.0	15.8	209.0

[1] Totals for 2014 and 2013 will differ from the totals on our Consolidated Statement of Cash Flow by the amounts that have been classified as discontinued operations.

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

	2015	2014	2013
Segment operating income	$ 187.4	$ 239.1	$ 265.6
Interest expense	45.3	46.0	68.7
Other non-operating expense	23.5	10.5	2.0
Other non-operating income	(5.3)	(2.6)	(3.8)
Earnings from continuing operations before income taxes	$ 123.9	$ 185.2	$ 198.7

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

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The sales in the table below are allocated to geographic areas based upon the location of the customer.

	2015	2014	2013
Geographic Areas			
Net trade sales			
Americas:			
United States	$ 1,738.5	$ 1,728.3	$ 1,743.8
Canada	131.5	164.9	176.6
Other	31.8	33.5	33.9
Total Americas	1,901.8	1,926.7	1,954.3
Europe, Middle East & Africa:			
United Kingdom	85.8	80.1	82.3
France	43.6	55.9	55.6
Russia	37.9	64.9	68.0
Saudi Arabia	10.8	20.8	18.1
Other	109.8	125.0	127.3
Total Europe, Middle East & Africa	287.9	346.7	351.3
Pacific Rim:			
China	85.5	92.4	81.3
India	54.0	50.5	40.3
Australia	53.9	64.2	66.2
Other	36.9	34.8	34.0
Total Pacific Rim	230.3	241.9	221.8
Total net trade sales	$ 2,420.0	$ 2,515.3	$ 2,527.4

	2015	2014
Property, plant and equipment, net at December 31,		
Americas:		
United States	$ 769.8	$ 715.8
Other	4.4	5.4

Total Americas	774.2	721.2
Europe, Middle East & Africa:		
Russia	48.3	62.7
Germany	28.5	29.9
France	27.6	18.8
United Kingdom	21.8	19.1
Other	18.8	16.2
Total Europe, Middle East & Africa	145.0	146.7
Pacific Rim:		
China	163.8	179.1
Other	13.3	15.4
Total Pacific Rim	177.1	194.5
Total property, plant and equipment, net	$ 1,096.3	$ 1,062.4

Impairment testing of our tangible assets occurs whenever events or changes in circumstances indicate that the carrying amount of the assets may not be recoverable. In 2014, we made the decision to dispose of certain idle equipment at five of our wood flooring manufacturing facilities and as a result we recorded a $4.4 million impairment charge in cost of goods sold.

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During 2014, we decided to close our resilient flooring plant in Thomastown, Australia and our engineered wood flooring plant in Kunshan, China. We recorded $2.2 million in cost of goods sold for accelerated depreciation due to the closure of the resilient flooring plant in Australia. We sold this facility in January 2015 for a gain of approximately $2 million. We also recorded $4.0 million in cost of goods sold for accelerated depreciation and $0.8 million for the impairment of intangible assets due to the closure of the wood flooring plant in China in 2014.

NOTE 4. DISCONTINUED OPERATIONS

European Resilient Flooring

On December 4, 2014, our Board of Directors approved the cessation of funding to our former DLW subsidiary, which was our former European flooring business. As a result, DLW management filed for insolvency in Germany on December 11, 2014. The German insolvency court subsequently appointed an administrator (the Administrator) to oversee DLW operations through the preliminary insolvency period. As a result of the insolvency filing, the appointment of the Administrator and our resulting loss of control of DLW s operations to the German insolvency court and its Administrator, effective December 11, 2014, we deconsolidated DLW from our financial statements and presented DLW for all historical periods as a discontinued operation.

The following is a summary of the results related to the DLW business, which are included in discontinued operations. These results were previously presented as part of the Resilient Flooring reporting segment.

	2014	2013
Net sales	$ 175.2	$ 192.5
(Loss) from discontinued operations before income tax	($ 23.7)	($ 26.8)
Income tax benefit		
Net (loss) from discontinued operations	($ 23.7)	($ 26.8)

	2015	2014
(Loss) on disposal of discontinued business before income tax	($ 0.8)	($ 13.5)
Income tax benefit	42.0	1.2
Net gain (loss) on disposal of discontinued business	$ 41.2	($ 12.3)

The $0.8 million and $13.5 million pre-tax losses on disposal of DLW recorded in 2015 and 2014 were comprised of the following items:

	2015	2014
Recognition of pension accumulated other comprehensive income		($ 14.7)
Transaction related fees		(3.4)
Reserve for previous intercompany receivables		(1.1)
Recognition of cumulative foreign currency translation adjustments		5.7
Other non-operating expenses	($ 0.8)	
(Loss) on disposal of discontinued business before income tax	($ 0.8)	($ 13.5)
Income tax benefit	42.0	1.2
Net gain (loss) on disposal of discontinued business	$ 41.2	($ 12.3)

The DLW insolvency filing in December 2014 resulted in our disposal and presentation of DLW for all historical periods as a discontinued operation. However, the insolvency filing did not meet the U.S. tax criteria to be considered disposed of until the first quarter of 2015. In determining the U.S. tax impact of the disposition, the liabilities, including an unfunded pension liability of approximately $115 million, were considered proceeds. However, pension deductions for tax purposes result only when the benefit payments are made. Accordingly, a deferred tax asset and non-cash income tax benefit of $43.4 million were recorded in the first quarter of 2015 within discontinued operations for the tax benefit of the future pension deductions.

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In June 2015, the Administrator announced that the business operations of DLW, including its two German manufacturing plants, were sold to a third party investment firm. We do not believe this transaction will have a material adverse impact on our financial condition, results of operations or cash flows. The insolvency proceedings continue as the Administrator works to sell remaining assets and resolve creditor claims.

At deconsolidation, DLW had a net liability of $12.9 million, representing assets of $151.9 million and liabilities of $164.8 million, which were removed from our balance sheet. This net liability was recognized as a contingent liability on our consolidated balance sheet pending the closure and results of the insolvency proceedings. Any shortfall will be recognized immediately when identified and any excess will be reflected when insolvency proceedings are finalized, all through discontinued operations. The amount of the net liability was $12.1 million at December 31, 2015.

We have entered into supply agreements with DLW to continue to purchase linoleum and homogenous flooring products for sale in the Americas and the Pacific Rim, and to provide administrative support services to DLW for information technology and accounts receivables and payables for a limited transition period. These agreements are not material.

Cabinets

In September 2012, we entered into a definitive agreement to sell our cabinets business to American Industrial Partners (AIP) for $27.0 million in cash. The sale was completed in October 2012. In February 2013, we received a demand notice from the Carpenters Labor-Management Pension Fund (the Fund) of a deemed withdrawal relating to the sale of our cabinets business to AIP in 2012.

During the third quarter of 2013, we recorded an estimated liability of $7.5 million for a potential withdrawal liability related to a multi-employer pension plan. During the second quarter of 2014, we recorded an additional $3.3 million expense to increase the total estimated remaining liability to $10.0 million. In August 2014, we entered into a settlement agreement with the Fund to resolve this matter for $10.3 million, including a complete release of all claims against us. As a result of the settlement, we recorded an additional charge of $0.3 million during the third quarter of 2014. Payment was made to the Fund in the third quarter of 2014.

The following is a summary of the results related to the cabinets business, which are included in discontinued operations.

	2015	2014	2013
Gain (loss) on disposal of discontinued business before income tax	$ 0.6	($ 3.5)	($ 10.0)
Income tax (expense) benefit	(0.2)	1.3	3.6

Net gain (loss) on disposal of discontinued business	$ 0.4	($ 2.2)	($ 6.4)

The Consolidated Statement of Cash Flows does not separately report the cash flows of the discontinued operations.

NOTE 5. ACCOUNTS AND NOTES RECEIVABLE

	December 31, 2015	December 31, 2014
Customer receivables	$ 198.8	$ 209.7
Customer notes	1.5	1.3
Miscellaneous receivables	8.2	9.3
Less allowance for warranties, discounts, and losses	(24.2)	(25.1)
Accounts and notes receivable, net	$ 184.3	$ 195.2

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Generally, 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 6. INVENTORIES

	December 31, 2015	December 31, 2014
Finished goods	$ 202.0	$ 243.2
Goods in process	25.2	23.0
Raw materials and supplies	138.2	133.9
Less LIFO and other reserves	(21.2)	(64.6)
Total inventories, net	$ 344.2	$ 335.5

Approximately 77% and 73% of our total inventory in 2015 and 2014, respectively, were valued on a LIFO (last-in, first-out) basis. LIFO reserves as of December 31, 2015 were lower in comparison to December 31, 2014, primarily due to declines in lumber costs. Inventory values were lower than would have been reported on a total FIFO (first-in, first-out) basis by $17.8 million and $52.9 million in 2015 and 2014, respectively.

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

	December 31, 2015	December 31, 2014
International locations	$ 74.0	$ 84.6
U.S. sourced products	5.5	4.7
Total	$ 79.5	$ 89.3

Substantially all of our international 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 and/or statutory reporting purposes. In these situations, a conversion to LIFO would be highly complex and involve excessive cost and effort to achieve under local tax and/or statutory reporting requirements.

The sourced products represent certain finished goods sourced from third party manufacturers, primarily from foreign suppliers.

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NOTE 7. OTHER CURRENT ASSETS

	December 31, 2015	December 31, 2014
Prepaid expenses	$ 41.1	$ 47.6
Fair value of derivative assets	6.6	5.7
Other	13.2	5.5
Total other current assets	$ 60.9	$ 58.8

NOTE 8. PROPERTY, PLANT AND EQUIPMENT

	December 31, 2015	December 31, 2014
Land	$ 72.0	$ 73.2
Buildings	381.3	373.3
Machinery and equipment	1,203.9	1,098.4
Computer software	23.2	18.6
Construction in progress	134.5	143.2
Less accumulated depreciation and amortization	(718.6)	(644.3)
Net property, plant and equipment	$ 1,096.3	$ 1,062.4

See Note 2 to the Consolidated Financial Statements for discussion of policies related to property and depreciation and asset retirement obligations.

NOTE 9. EQUITY INVESTMENTS

Investment in joint venture at December 31, 2015 reflected the equity interest in our 50% investment in our Worthington Armstrong Venture (WAVE) joint venture. The WAVE joint venture is reflected in our consolidated financial statements using the equity method of accounting.

We use the equity in earnings method to determine the appropriate classification of distributions from WAVE within our cash flow statement. During 2015, 2014 and 2013, WAVE distributed amounts in excess of our capital contributions and proportionate share of retained earnings. Accordingly, the distributions in these years were reflected as a return of investment in cash flows from investing activity in our Consolidated Statement of Cash Flows.

Distributions from WAVE in 2015, 2014 and 2013 were $64.2 million, $67.9 million, and $61.1 million, respectively.

In certain markets, we sell WAVE products directly to customers pursuant to specific terms of sale. In those circumstances, we record the sales and associated costs within our consolidated financial statements. The total sales associated with these transactions were $97.4 million, $109.4 million and $111.7 million for the years ended 2015, 2014 and 2013, respectively.

Our recorded investment in WAVE was higher than our 50% share of the carrying values reported in WAVE s consolidated financial statements by $172.1 million as of December 31, 2015 and $177.7 million as of December 31, 2014. These differences are due to our adoption of fresh-start reporting upon emergence from Chapter 11, 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, 2015	December 31, 2014
Property, plant and equipment	$ 0.4	$ 0.5
Other intangibles	141.3	146.8
Goodwill	30.4	30.4
Total	$ 172.1	$ 177.7

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Other intangibles include customer relationships, trademarks and developed technology. Customer relationships are amortized over 20 years and developed technology is amortized over 15 years. Trademarks have an indefinite life.

See Exhibit 99.1 for WAVE s consolidated financial statements. Condensed financial data for WAVE is summarized below:

	December 31, 2015	December 31, 2014
Current assets	$ 118.7	$ 120.2
Noncurrent assets	52.1	40.5
Current liabilities	23.3	26.3
Other noncurrent liabilities	248.9	243.4

	2015	2014	2013
Net sales	$ 374.4	$ 392.5	$ 381.8
Gross profit	187.4	185.1	172.9
Net earnings	144.4	142.2	132.4

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

NOTE 10. INTANGIBLE ASSETS

We conduct our annual impairment testing of non-amortizing intangible assets during the fourth quarter. Our 2014 testing concluded there was an impairment of $10.0 million of a Wood Flooring trademark. The 2015 and 2013 reviews concluded that no impairment charges were necessary. See Note 2 to the Consolidated Financial Statements for a discussion of our accounting policy for intangible assets.

The following table details amounts related to our intangible assets as of December 31, 2015 and 2014:

		December 31, 2015		December 31, 2014	
	Estimated Useful Life	Gross Carrying Amount	Accumulated Amortization	Gross Carrying Amount	Accumulated Amortization
Amortizing intangible assets					
Customer relationships	20 years	$ 165.4	$ 76.7	$ 165.4	$ 68.4
Developed technology	15 years	87.2	51.0	84.9	45.1
Other	Various	20.4	2.7	21.3	2.4

Total		$ 273.0	$ 130.4	$ 271.6	$ 115.9
Non-amortizing intangible assets					
Trademarks and brand names	Indefinite	347.1		345.7	
Total intangible assets		$ 620.1		$ 617.3	

	2015	2014	2013
Amortization expense	$ 14.6	$ 14.5	$ 14.4

The expected annual amortization expense for the years 2016 through 2020 is approximately $14 million.

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NOTE 11. OTHER NON-CURRENT ASSETS

	December 31, 2015	December 31, 2014
Cash surrender value of company-owned life insurance policies	$ 52.6	$ 53.7
Debt financing costs	4.7	6.7
Other	5.3	7.5
Total other non-current assets	$ 62.6	$ 67.9

NOTE 12. ACCOUNTS PAYABLE AND ACCRUED EXPENSES

	December 31, 2015	December 31, 2014
Payables, trade and other	$ 234.1	$ 224.8
Employment costs	62.1	33.9
Current portion of pension and postretirement benefit liabilities	22.6	24.4
Contingent liability related to deconsolidated operations	12.1	12.9
Other	49.5	49.5
Total accounts payable and accrued expenses	$ 380.4	$ 345.5

The increase in accrued employment costs as of December 31, 2015 in comparison to December 31, 2014 was due to increased employee compensation and severance accruals recorded in connection with our planned separation of the flooring business.

NOTE 13. SEVERANCE AND RELATED COSTS

In 2015 we recorded $5.3 million in Unallocated Corporate for severance and related costs to reflect approximately 25 position eliminations (including our current Chief Executive Officer) as a result of our initiative to separate our flooring business from our ceiling business. These costs are reflected within Separation costs on the income statement.

In 2015 we also recorded $2.0 million in cost of goods sold and $0.9 million in SG&A for severance and related costs to reflect approximately 85 position eliminations in our Building Products business in the Pacific Rim. In response to China market conditions, we decided to idle one of our Buildings Products plants in China in the second quarter of 2016 and have eliminated other positions throughout the region. Production will be primarily transferred to our other Building Products plant in China.

In 2015 we also recorded $2.2 million in SG&A for severance and related costs to reflect approximately 30 position eliminations in our Buildings Products business in Europe. The position eliminations are in response to poor construction market conditions in many parts of Europe.

In the second and third quarters of 2014, we recorded $1.7 million and $0.2 million, respectively, in cost of goods sold for severance and related costs due to the closure of a resilient flooring plant in Australia. We also recorded $1.4 million and $0.7 million in the second and third quarters of 2014, respectively, in cost of goods sold for severance and related costs due to the closure of a wood flooring plant in China. Both plants were closed due to excess capacity and ceased operations in the third quarter of 2014.

In the fourth quarter of 2013, we recorded $1.4 million in cost of goods sold for severance and related costs in our Resilient Flooring business in Australia.

In the first quarter of 2013, we recorded $2.4 million in cost of goods sold for severance and related costs to reflect approximately 40 position eliminations in our Resilient Flooring business in Australia.

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NOTE 14. INCOME TAXES

The tax effects of principal temporary differences between the carrying amounts of assets and liabilities and their tax bases are summarized in the following table. Management believes it is more likely than not that the results of future operations will generate sufficient taxable income in the appropriate jurisdiction and foreign source income to realize deferred tax assets, net of valuation allowances. In arriving at this conclusion, we considered the profit before tax generated for the years 2013 through 2015, as well as future reversals of existing taxable temporary differences and projections of future profit before tax and foreign source income.

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 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, forecasts of future profitability and foreign source income, 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, 2015 and 2014, we had valuation allowances of $69.1 million and $87.9 million, respectively. As of December 31, 2015, our valuation allowance consisted of $13.8 million for state deferred tax assets, primarily operating loss carryforwards, and $55.3 million for foreign deferred tax assets, primarily foreign operating loss carryforwards.

As of December 31, 2015 and 2014, we had $863.1 million and $969.6 million, respectively, of state NOL carryforwards expiring between 2016 and 2035. In addition, as of December 31, 2015 and 2014, we had $202.9 million and $158.3 million, respectively, of foreign NOL carryforwards. As of December 31, 2015, $76.9 million of our foreign NOL carryforwards were available for carryforward indefinitely and $126.0 million expire between 2016 and 2033. As of December 31, 2015, we also had U.S. foreign tax credit (FTC) carryforwards of $27.1 million on a gross basis, $12.3 million when netted with unrecognized tax benefits that expire between 2016 and 2022. U.S. FTC carryforwards as of December 31, 2014 were $54.3 million on a gross basis, $12.1 million when netted with unrecognized tax benefits.

Our valuation allowances as of December 31, 2015 of $69.1 million decreased $18.8 million from December 31, 2014. The valuation allowance for foreign deferred tax assets of $55.3 million as of December 31, 2015 increased $13.6 million in comparison to December 31, 2014. This increase was primarily a result of incurring additional foreign losses in 2015. The valuation allowance for federal statutorily limited federal losses, and corresponding equal deferred tax asset, were fully relieved as a result of the disposition of DLW. This resulted in a decrease to the valuation allowance of $31.6 million. The valuation allowance for state deferred tax assets of $13.8 million as of

December 31, 2015 decreased $0.8 million in comparison to December 31, 2014.

We estimate we will need to generate future federal taxable income of $77.4 million, including foreign source income of $34.3 million, to fully realize the FTCs before they expire in 2022. We estimate we will need to generate future taxable income of approximately $971.1 million for state income tax purposes during the respective realization periods (ranging from 2016 to 2035) in order to fully realize the net deferred income tax assets discussed above.

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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.

	December 31, 2015	December 31, 2014
Deferred income tax assets (liabilities)		
Net operating losses	$ 83.7	$ 113.7
Postretirement benefits	75.5	87.7
Pension benefit liabilities	74.3	34.0
Deferred compensation	33.8	23.2
Foreign exchange unrealized	18.9	13.3
Foreign tax credit carryforwards	12.3	12.1
State tax credit carryforwards	9.7	5.9
Other	43.2	41.9
Total deferred income tax assets	351.4	331.8
Valuation allowances	(69.1)	(87.9)
Net deferred income tax assets	282.3	243.9
Intangibles	(222.8)	(229.1)
Accumulated depreciation	(84.1)	(77.6)
Inventories	(22.6)	(13.4)
Other	(10.9)	(11.0)
Total deferred income tax liabilities	(340.4)	(331.1)
Net deferred income tax liabilities	($ 58.1)	($ 87.2)
Deferred income taxes have been classified in the Consolidated Balance Sheet as:		
Deferred income tax assets - current	$ 35.5	$ 31.4
Deferred income tax assets - noncurrent	21.0	26.6
Deferred income tax liabilities - current	(0.6)	(0.5)
Deferred income tax liabilities - noncurrent	(114.0)	(144.7)
Net deferred income tax liabilities	($ 58.1)	($ 87.2)

	2015	2014	2013
Details of taxes			
Earnings (loss) before income taxes:			
Domestic	$ 197.0	$ 214.9	$ 186.2
Foreign	(15.4)	(29.7)	12.5
Elimination of dividends from foreign subsidiaries	(57.7)		
Total	$ 123.9	$ 185.2	$ 198.7
Income tax expense (benefit):			
Current:			
Federal	$ 41.8	$ 43.0	$ 18.7
Foreign	10.3	7.9	8.1
State	1.3	2.4	3.3
Total current	53.4	53.3	30.1
Deferred:			
Federal	9.1	19.0	40.1
Foreign	(1.7)	0.8	2.3
State	10.5	10.1	(1.1)
Total deferred	17.9	29.9	41.3
Total income tax expense	$ 71.3	$ 83.2	$ 71.4

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We reviewed our position with regards to foreign unremitted earnings and determined that unremitted earnings would continue to be permanently reinvested. Accordingly we have not recorded U.S. income or foreign withholding taxes on approximately $268.7 million of undistributed earnings of foreign subsidiaries that could be subject to taxation if remitted to the U.S. because we currently plan to keep these amounts permanently invested overseas. It is not practicable to calculate the residual income tax which would result if these basis differences reversed due to the complexities of the tax law and the hypothetical nature of the calculations.

	2015	2014	2013
Reconciliation to U.S. statutory tax rate			
Continuing operations tax at statutory rate	$ 43.4	$ 64.8	$ 69.6
Increase in valuation allowances on deferred foreign income tax assets	26.2	24.6	23.0
State income tax expense, net of federal benefit	5.9	6.0	5.9
Separation costs	2.9		
Permanent book/tax differences	2.0	0.8	3.5
Increase (decrease) in valuation allowances on deferred domestic income tax assets	4.1	3.0	(2.9)
Domestic production activities	(5.1)	(5.8)	(9.0)
Tax on foreign and foreign-source income	(4.6)	(5.7)	(13.8)
Research and development credits	(2.6)	(4.8)	(4.4)
Other	(0.9)	0.3	(0.5)
Tax expense at effective rate	$ 71.3	$ 83.2	$ 71.4

As a result of our planned separation of the flooring business we have incurred costs directly related to the separation transaction. Certain costs incurred to facilitate the transaction are not deductible for federal income tax purposes and result in a permanent difference.

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

We have $150.6 million of Unrecognized Tax Benefits (UTB) as of December 31, 2015, $111.7 million ($109.4 million, net of federal benefit) of this amount, if recognized in future periods, would impact the reported effective tax rate. It is estimated that approximately $5 million of the UTB, if recognized, may be written off as a result of a change in ownership under Section 382 of the Internal Revenue Code.

It is reasonably possible that certain UTB s may increase or decrease within the next twelve months due to tax examination changes, settlement activities, expirations of statute of limitations, or the impact on recognition and measurement considerations related to the results of published tax cases or other similar activities. Over the next twelve months we estimate that UTB s may decrease by $0.1 million related to state statutes expiring and increase by $5.8 million due to uncertain tax positions expected to be taken on domestic tax returns.

We account for all interest and penalties on uncertain income tax positions as income tax expense. We reported $4.5 million of interest and penalty exposure as noncurrent income tax payable in the Consolidated Balance Sheet as of December 31, 2015.

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We had the following activity for UTB s for the years ended December 31, 2015, 2014 and 2013:

	2015	2014	2013
Unrecognized tax benefits balance at January 1,	$ 142.6	$ 145.2	$ 138.4
Gross change for current year positions	10.4	10.5	8.5
Increases for prior period positions	1.9	2.9	1.4
Decrease for prior period positions	(4.1)	(14.1)	(2.1)
Decrease due to settlements and payments		(1.2)	
Decrease due to statute expirations	(0.2)	(0.7)	(1.0)
Unrecognized tax benefits balance at December 31,	$ 150.6	$ 142.6	$ 145.2

We conduct business globally, and as a result, we file income tax returns in the U.S., various states and international jurisdictions. In the normal course of business, we are subject to examination by taxing authorities throughout the world in such major jurisdictions as Australia, Canada, Germany, India, the Netherlands, the United Kingdom and the United States. Generally, we have open tax years subject to tax audit on average of between three years and six years. The audit of our 2009 U.S. income tax return was finalized by the IRS in 2015. With few exceptions, the statute of limitations is no longer open for state or non-U.S. income tax examinations for the years before 2010. Other than the U.S., 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. The tax years 2010 through 2014 are subject to future potential tax adjustments.

	2015	2014	2013
Other taxes			
Payroll taxes	$ 45.3	$ 48.0	$ 46.4
Property, franchise and capital stock taxes	10.7	10.9	10.2

NOTE 15. DEBT

	December 31, 2015	Weighted Average Interest Rate for 2015	December 31, 2014	Weighted Average Interest Rate for 2014
Term loan A due 2018	$ 496.0	3.24%	$ 530.9	3.14%
Term loan B due 2020	461.9	3.50%	466.6	3.50%

Tax exempt bonds due 2025 - 2041	45.1	0.87%	45.1	0.88%
Subtotal	1,003.0	3.25%	1,042.6	3.20%
Less current portion and short-term debt	52.1	3.26%	39.6	3.18%
Total long-term debt, less current portion	$ 950.9	3.25%	$ 1,003.0	3.20%

The average year-end interest rates are inclusive of our interest rate swaps. See Note 18 to the Consolidated Financial Statements for further information.

In March 2013, we refinanced our $1.3 billion senior credit facility. The amended facility is composed of a $250 million revolving credit facility (with a $150 million sublimit for letters of credit), a $550 million Term Loan A and a $475 million Term Loan B. The terms of the facility resulted in a lower interest rate spread (2.5% vs. 3.0%) than our previous facility. We also extended the maturity of Term Loan A from November 2015 to March 2018 and of Term Loan B from March 2018 to March 2020. The facility is secured by U.S. personal property, the capital stock of material U.S. subsidiaries, and a pledge of 65% of the stock of our material first tier foreign subsidiaries. In connection with the refinancing, we incurred $8.3 million for bank, legal, and other fees, of which $7.2 million was capitalized and is being amortized into interest expense over the life of the loans. Additionally, we wrote off $18.9 million of unamortized debt financing costs in the first quarter of 2013 related to our previous credit facility to interest expense.

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The primary covenant change resulting from the 2013 refinancing is related to mandatory prepayments required under the senior credit facility. If our ratio of consolidated funded indebtedness minus AWI and domestic subsidiary unrestricted cash and cash equivalents up to $100 million to consolidated earnings before interest, taxes, depreciation and amortization (EBITDA) (Consolidated Net Leverage Ratio) is greater than or equal to 3.5 to 1.0, we would be required to make a prepayment based on a computation of 50% of consolidated annual excess cash flows, as defined by the credit agreement. If our Consolidated Net Leverage Ratio is less than 3.5 to 1.0, no prepayment would be required. These annual payments would be made in the first quarter of the following year. No payment will be required in 2016.

As of December 31, 2015, we were in compliance with all covenants of the amended senior credit facility. Our debt agreements include other restrictions, including restrictions pertaining to the acquisition 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. Fully borrowing under our revolving credit facility would not violate these covenants.

As a result of our planned separation of the flooring business, we intend to refinance our existing credit facilities, and may modify certain interest rate hedges. We intend to use cash on hand as well as a planned $50.0 million cash dividend from AFI to reduce total debt outstanding. The new credit facility is expected to be for $1,050 million, including $200.0 million of an undrawn revolving credit facility. We anticipate concluding this transaction contemporaneously with our separation of the flooring business.

On December 18, 2014, we amended and increased our $75 million Accounts Receivable Securitization Facility with the Bank of Nova Scotia (the funding entity), under which AWI and its subsidiary, Armstrong Hardwood Flooring Company (the Originators) sell their accounts receivables to Armstrong Receivables Company, LLC (ARC), a Delaware entity that is consolidated in these financial statements. The facility reflects a seasonality clause that changes to $100 million from March through September, and $90 million from October through February. The maturity date has been extended from March 2016 to December 2017. ARC is a 100% wholly owned single member LLC special purpose entity created specifically for this transaction; therefore, any receivables sold to ARC are not available to the general creditors of AWI. ARC then sells an undivided interest in the purchased accounts receivables to the funding entity. This undivided interest acts as collateral for drawings on the facility. Any borrowings under this facility are obligations of ARC and not AWI. ARC contracts with and pays a servicing fee to AWI to manage, collect and service the purchased accounts receivables. In connection with the planned separation of AFI, we intend to amend this facility, resulting in lower purchase and letter of credit commitments under the program.

All new receivables under the program generated by the originators are continuously purchased by ARC with the proceeds from collections of receivables previously purchased. Ongoing changes in the amount of funding under the program, through changes in the amount of undivided interests sold by ARC, reflect seasonal variations in the level of accounts receivable, changes in collection trends and other factors such as changes in sales prices and volumes. ARC has issued subordinated notes payable to the originators for the difference between the face amount of uncollected accounts receivable purchased, less a discount, and cash paid to the originators that was funded by the sale of the

undivided interests. The notes issued by ARC are subordinated to the undivided interests of the funding entity in the purchased receivables. The balance of the subordinated notes payable, which are eliminated during consolidation, totaled $97.9 million and $103.1 million as of December 31, 2015 and December 31, 2014, respectively. As of December 31, 2015 we had no borrowings under this facility but had $60.3 million of letters of credit issued under the facility.

None of the remaining outstanding debt as of December 31, 2015 was secured with buildings and other assets. The credit lines at our foreign subsidiaries are subject to immaterial annual commitment fees.

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Scheduled payments of long-term debt:

2016	$ 52.1
2017	55.3
2018	402.9
2019	4.8
2020	487.9
2021 and later	

We utilize lines of credit and other commercial commitments in order to ensure that adequate funds are available to meet operating requirements. On December 31, 2015, we had a $250 million revolving credit facility with a $150 million sublimit for letters of credit, of which $7.7 million was outstanding. There were no borrowings under the revolving credit facility. Availability under this facility totaled $242.3 million as of December 31, 2015. We also have the $90 million securitization facility which as of December 31, 2015 had letters of credit outstanding of $60.3 million and no borrowings against it. Maximum capacity under this facility was $67.4 million (of which $7.1 million was available), subject to accounts receivable balances and other collateral adjustments, as of December 31, 2015. As of December 31, 2015, our foreign subsidiaries had available lines of credit totaling $20.0 million of which $0.2 million was available only for letters of credit and guarantees. There were $0.2 million of letters of credit and guarantees issued under these credit lines as of December 31, 2015, leaving no additional letter of credit availability. There were no borrowings under these lines of credit as of December 31, 2015 leaving $19.8 million of unused lines of credit available for foreign borrowings. Letters of credit are issued to third party suppliers, insurance and financial institutions and typically can only be drawn upon in the event of AWI s failure to pay its obligations to the beneficiary.

NOTE 16. PENSION AND OTHER BENEFIT PROGRAMS

We have defined benefit pension plans and postretirement medical and insurance benefit plans covering eligible employees worldwide. We also have defined-contribution pension plans for eligible employees. 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. 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.

UNITED STATES PLANS

The following tables summarize the balance sheet impact of the pension and postretirement benefit plans, as well as the related benefit obligations, assets, funded status and rate assumptions. The pension benefits disclosures include both the qualified, funded Retirement Income Plan (RIP) and the Retirement Benefit Equity Plan, 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 use a December 31 measurement date for our U.S. defined benefit plans.

	2015	2014
U.S. defined-benefit pension plans		
Change in benefit obligation:		
Benefit obligation as of beginning of period	$ 2,069.9	$ 1,868.1
Service cost	16.3	14.4
Interest cost	80.9	85.7
Actuarial (gain) loss	(130.5)	287.0
Benefits paid	(118.5)	(185.3)
Benefit obligation as of end of period	$ 1,918.1	$ 2,069.9

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	2015	2014
Change in plan assets:		
Fair value of plan assets as of beginning of period	$ 1,986.3	$ 1,978.4
Actual return on plan assets	(34.2)	188.9
Employer contribution	3.6	4.3
Benefits paid	(118.5)	(185.3)
Fair value of plan assets as of end of period	$ 1,837.2	$ 1,986.3
Funded status of the plans	($ 80.9)	($ 83.6)

	2015	2014
U.S. defined-benefit pension plans		
Weighted-average assumptions used to determine benefit obligations at end of period:		
Discount rate	4.40%	4.05%
Rate of compensation increase	3.10%	3.10%
Weighted-average assumptions used to determine net periodic benefit cost for the period:		
Discount rate	4.05%	4.75%
Expected return on plan assets	7.00%	7.00%
Rate of compensation increase	3.10%	3.10%

The accumulated benefit obligation for the U.S. defined benefit pension plans was $1,896.8 million and $2,051.7 million at December 31, 2015 and 2014, respectively.

	2015	2014
U.S. pension plans with benefit obligations in excess of assets		
Projected benefit obligation, December 31	$ 1,918.1	$ 2,069.9
Accumulated benefit obligation, December 31	1,896.8	2,051.7
Fair value of plan assets, December 31	1,837.2	1,986.3

The components of the pension cost are as follows:

	2015	2014	2013
U.S. defined-benefit pension plans			
Service cost of benefits earned during the period	$ 16.3	$ 14.4	$ 16.9
Interest cost on projected benefit obligation	80.9	85.7	79.7
Expected return on plan assets	(140.3)	(139.3)	(136.5)
Amortization of prior service cost	1.9	1.9	1.9
Recognized net actuarial loss	72.8	42.4	40.9
Net periodic pension cost	$ 31.6	$ 5.1	$ 2.9

Investment Policies

The RIP s primary investment objective is to maintain the funded status of the plan such that the likelihood that we will be required to make significant contributions to the plan is limited. This objective is expected to be achieved by:

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 such that there is a relatively high correlation between the movements of the plan s liability and asset values.

Investing in publicly traded equities in order to increase the ratio of plan assets to liabilities over time.

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Limiting investment return volatility by diversifying among additional asset classes with differing expected rates of return and return correlations.

Using derivatives to either implement investment positions efficiently or to hedge risk but not to create investment leverage.

Each asset class utilized by the RIP has a defined asset allocation target and allowable range. The table below shows the asset allocation target and the December 31, 2015 and 2014 position for each asset class:

	Target Weight at	Position at December 31,	
Asset Class	December 31, 2015	2015	2014
Long duration bonds	59%	59%	58%
Equities	29%	26%	27%
High yield bonds and real assets	8%	8%	8%
Real estate and private equity	4%	5%	4%
Other fixed income	0%	2%	3%

Pension plan assets are required to be reported and disclosed at fair value in the financial statements. 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 s assets measured at fair value on a recurring basis:

	Value at December 31, 2015			
Description	Level 1	Level 2	Level 3	Total
Domestic equity	$ 299.7			$ 299.7
International equity	143.3	$ 0.1		143.4
Other investments			$ 2.9	2.9
Short term investments and other, net	12.8	48.0		60.8
Net assets measured at fair value	$ 455.8	$ 48.1	$ 2.9	$ 506.8
Investments measured at net asset value				1,330.4
Net assets				$ 1,837.2

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	Value at December 31, 2014			
Description	Level 1	Level 2	Level 3	Total
Domestic equity	$ 275.0			$ 275.0
International equity	196.9			196.9
Other investments			$ 3.1	3.1
Short term investments and other, net	14.2	$ 67.7		81.9
Net assets measured at fair value	$ 486.1	$ 67.7	$ 3.1	$ 556.9
Investments measured at net asset value				1,429.4
Net assets				$ 1,986.3

The table below sets forth a summary of changes in the fair value of the RIP s Other investments, measured at Level 3 of the fair value hierarchy, for the years ended December 31, 2015 and 2014:

December 31, 2013	$ 3.2
Purchases	0.1
Settlements	(0.2)
December 31, 2014	$ 3.1
Unrealized (loss)	(0.1)
Purchases	0.1
Sales	(0.1)
Settlements	(0.1)
December 31, 2015	$ 2.9

The RIP has $1,330.4 million and $1,429.4 million of investments in alternative investment funds at December 31, 2015 and December 31, 2014, respectively, which are reported at fair value. Certain 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 table 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 RIP s interest in the funds. Furthermore, changes to the liquidity provisions of the funds may significantly impact the fair value of the RIP s interest in the funds. As of December 31, 2015, there were no restrictions on redemption of these investments.

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

	Value at December 31, 2015			
Description	Fair Value	Unfunded Commitments	Redemption Frequency	Redemption Notice Period
Long duration bonds	$ 1,069.9		Daily	Prior Day
Domestic equity	11.0		Daily	Prior Day
International equity	19.4		Daily	Prior Day
Global equity	33.5		Daily	Prior Day
High yield bonds	82.0		Monthly	3 Days
Real estate	79.7	$ 2.3	Quarterly	45-90 Days
Real assets	32.1		Daily	Prior Day
Other investments	2.8	1.5	None	None
Investments measured at net asset value	$ 1,330.4	$ 3.8		

	Value at December 31, 2014			
Description	Fair Value	Unfunded Commitments	Redemption Frequency	Redemption Notice Period
Long duration bonds	$ 1,142.5		Daily	Prior Day
Domestic equity	15.8		Daily	Prior Day
International equity	25.2		Daily	Prior Day
Global equity	38.7		Daily	Prior Day
High yield bonds	95.6		Monthly	3 Days
Real estate	77.9	$ 2.4	Quarterly	45-90 Days
Real assets	31.1		Daily	Prior Day
Other investments	2.6	1.9	None	None
Investments measured at net asset value	$ 1,429.4	$ 4.3		

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

There have been no changes in the methodologies used at December 31, 2015 and 2014.

Long Duration Bonds: Consists of registered investment funds and common and collective trust funds investing in fixed income securities tailored to institutional investors. The fair values of the investments in this class have been estimated using the net asset value per share of the investments.

Domestic, International and Global equity securities: Consists of investments in common and preferred stocks as well as investments in registered investment funds investing in equities tailored to institutional investors. Domestic and international equity securities totaling $443.0 million and $471.9 million as of December 31, 2015 and 2014, respectively, were measured at fair value, with common and preferred stocks valued at the closing price reported on the active market on which the individual securities are traded. Domestic, international and global equity securities totaling $63.9 million and $79.7 million as of December 31, 2015 and 2014, respectively, were measured at fair value using the NAV practical expedient.

High Yield Bonds: Consists of an investment in a registered investment fund investing in fixed income securities tailored to institutional investors. These investments were measured at fair value using the NAV practical expedient.

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Real Estate: The RIP s real estate investments are comprised of both open-end and closed-end 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.

Real Assets: Consists of a fund that has underlying investments in commodity futures contracts, as well as cash and fixed income instruments used as collateral instruments against the commodity future contracts. The futures contracts are considered real assets as the underlying securities include natural resources such as oil or precious metals, livestock, or raw agricultural products such as soybeans or coffee beans. These investments were measured at fair value using the NAV practical expedient.

Other Investments: Consists of investments in a group insurance annuity contract and a limited partnership. The investments in the group insurance annuity contract, totaling $2.9 million and $3.1 million as of December 31, 2015 and 2014, respectively, were determined by discounting the related cash flows based on current yields of similar instruments with comparable durations considering the credit-worthiness of the issuer. The investments in the limited partnership, totaling $2.8 million and $2.6 million as of December 31, 2015 and 2014, respectively, were measured at fair value using the NAV practical expedient.

Short Term Investments and other, net: Cash and short term investments consist of cash and cash equivalents and other payables and receivables (net). The carrying amounts of cash and cash equivalents approximate fair value due to the short-term maturity of these instruments. Other payables and receivables consist primarily of margin on account for a fund, accrued fees and receivables related to investment positions liquidated for which proceeds had not been received at December 31. The carrying amounts of payables and receivables approximate fair value due to the short-term nature of these instruments.

Basis of Rate-of-Return Assumption

Long-term asset class return assumptions are determined based on input from investment professionals on the expected performance of the asset classes over 10 to 30 years. The forecasts were averaged to come up with consensus passive return forecasts for each asset class. Incremental components were added for the expected return from active management and asset class rebalancing based on historical information obtained from the RIP s investment consultants. These forecasted gross returns were reduced by estimated management fees and expenses, yielding a long-term return forecast of 7.00% for the years ended December 31, 2015 and 2014.

	2015	2014
U.S. defined-benefit retiree health and life insurance plans		
Change in benefit obligation:		
Benefit obligation as of beginning of period	$ 221.4	$ 258.2
Service cost	0.9	0.9

Interest cost	8.1	10.9
Plan participants contributions	4.6	5.4
Actuarial (gain)	(22.7)	(27.9)
Benefits paid, gross	(22.3)	(26.6)
Medicare subsidy receipts	0.3	0.5
Benefit obligation as of end of period	$ 190.3	$ 221.4

	2015	2014
Change in plan assets:		
Fair value of plan assets as of beginning of period		
Employer contribution	$ 17.4	$ 20.7
Plan participants contributions	4.6	5.4
Benefits paid, gross	(22.3)	(26.6)
Medicare subsidy receipts	0.3	0.5
Fair value of plan assets as of end of period	$	$
Funded status of the plans	($ 190.3)	($ 221.4)

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	2015	2014
U.S. defined-benefit retiree health and life insurance plans		
Weighted-average discount rate used to determine benefit obligations at end of period	4.25%	3.90%
Weighted-average discount rate used to determine net periodic benefit cost for the period	3.90%	4.50%

The components of postretirement benefits costs are as follows:

	2015	2014	2013
U.S. defined-benefit retiree health and life insurance plans			
Service cost of benefits earned during the period	$ 0.9	$ 0.9	$ 1.2
Interest cost on accumulated postretirement benefit obligation	8.1	10.9	9.7
Amortization of prior service (credit)	(0.6)	(0.6)	(0.6)
Amortization of net actuarial gain	(7.8)	(4.2)	(3.5)
Net periodic postretirement benefit cost	$ 0.6	$ 7.0	$ 6.8

For measurement purposes, an average rate of annual increase in the per capita cost of covered health care benefits of 7.5% for pre-65 retirees and 9.0% to 11.8% for post-65 retirees (depending on plan type) was assumed for 2016, decreasing ratably to an ultimate rate of 4.5% in 2024. Assumed health care cost trend rates can have a significant effect on the amounts reported for the health care plans. A one-percentage-point change in assumed health care cost trend rates would have the following effects:

	One percentage point Increase	Decrease
U.S. retiree health and life insurance benefits plans		
Effect on total service and interest cost components	($ 0.1)	$ 0.1
Effect on postretirement benefit obligation	(1.8)	1.3

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

	Pension Benefits		Retiree Health and Life Insurance Benefits	
	2015	2014	2015	2014

Accounts payable and accrued expenses	($ 4.0)	($ 4.0)	($ 17.9)	($ 19.9)
Postretirement benefit liabilities			(172.4)	(201.5)
Pension benefit liabilities	(76.9)	(79.6)		
Net amount recognized	($ 80.9)	($ 83.6)	($ 190.3)	($ 221.4)

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

	Pension Benefits		Retiree Health and Life Insurance Benefits	
	2015	2014	2015	2014
Net actuarial (loss) gain	($ 775.6)	($ 804.3)	$ 91.5	$ 77.4
Prior service (cost) credit	(3.9)	(5.8)	0.6	1.2
Accumulated other comprehensive (loss) income	($ 779.5)	($ 810.1)	$ 92.1	$ 78.6

We expect to amortize $67.0 million of previously unrecognized prior service cost and net actuarial losses into pension cost in 2016. We expect to amortize $8.6 million of previously unrecognized net actuarial gains and prior service credits into postretirement benefit cost in 2016.

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We expect to contribute $4.0 million to our U.S. defined benefit pension plans and $17.9 million to our U.S. postretirement benefit plans in 2016.

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:

	Pension Benefits	Retiree Health and Life Insurance Benefits, Gross	Retiree Health Medicare Subsidy Receipts
2016	$ 125.3	$ 18.3	($ 0.4)
2017	125.0	17.8	(0.5)
2018	125.5	17.1	(0.6)
2019	126.8	16.1	(0.6)
2020	126.5	15.2	(0.7)
2021 - 2025	635.2	66.8	(4.3)

These estimated benefit payments are based on assumptions about future events. Actual benefit payments may vary significantly from these estimates.

NON-U.S. PLANS

We have defined benefit pension plans covering employees in a number of foreign countries that utilize assumptions which are consistent with, but not identical to, those of the U.S. plans. The following tables summarize the balance sheet impact of foreign pension benefit plans, as well as the related benefit obligations, assets, funded status and rate assumptions.

We use a December 31 measurement date for all of our non-U.S. defined benefit plans.

	2015	2014
Non-U.S. defined-benefit pension plans		
Change in benefit obligation:		
Benefit obligation as of beginning of period	$ 261.4	$ 251.8
Service cost	2.4	2.5
Interest cost	8.3	10.5
Plan participants contributions	0.1	0.1

Plan amendments		0.7
Foreign currency translation adjustment	(16.5)	(20.0)
Actuarial (gain) loss	(6.7)	28.9
Benefits paid	(15.0)	(13.1)
Benefit obligation as of end of period	$ 234.0	$ 261.4

	2015	2014
Change in plan assets:		
Fair value of plan assets as of beginning of period	$ 232.4	$ 219.9
Actual return on plan assets	3.3	37.0
Employer contribution	3.4	4.5
Plan participants contributions	0.1	0.1
Foreign currency translation adjustment	(13.3)	(16.0)
Benefits paid	(15.0)	(13.1)
Fair value of plan assets as of end of period	$ 210.9	$ 232.4
Funded status of the plans	($ 23.1)	($ 29.0)

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	2015	2014
Non-U.S. defined-benefit pension plans		
Weighted-average assumptions used to determine benefit obligations at end of period:		
Discount rate	3.40%	3.40%
Rate of compensation increase	2.60%	2.60%
Weighted-average assumptions used to determine net periodic benefit cost for the period:		
Discount rate	3.40%	4.30%
Expected return on plan assets	4.50%	5.50%
Rate of compensation increase	2.60%	2.80%

The accumulated benefit obligation for the non-U.S. defined benefit pension plans was $226.1 million and $257.7 million at December 31, 2015 and 2014, respectively.

	2015	2014
Non-U.S. pension plans with benefit obligations in excess of assets		
Projected benefit obligation, December 31	$ 58.3	$ 70.5
Accumulated benefit obligation, December 31	52.7	68.7
Fair value of plan assets, December 31	26.8	34.0

The components of the pension cost are as follows:

	2015	2014	2013
Non-U.S. defined-benefit pension plans			
Service cost of benefits earned during the period	$ 2.4	$ 2.5	$ 2.4
Interest cost on projected benefit obligation	8.3	10.5	9.8
Expected return on plan assets	(9.0)	(11.5)	(9.6)
Amortization of prior service cost			0.5
Amortization of net actuarial loss	2.8	2.1	2.7
Net periodic pension cost	$ 4.5	$ 3.6	$ 5.8

Excluded from net periodic pension costs in the preceding table were $0.5 million of settlement charges recorded in 2015.

Investment Policies

Each of the funded non-U.S. pension plan s primary investment objectives is to earn sufficient long-term returns on investments both to increase the ratio of the assets to liabilities in order for the plans to meet their benefits obligations and to minimize required cash contributions to the plans. This is expected to be achieved by (a) investing primarily in publicly-traded equities, (b) limiting return volatility by diversifying investments among additional asset classes with differing expected rates of return and return correlations, and (c) utilizing long duration bonds to limit the volatility of the plans asset/liability ratios.

Each of the plans has a targeted asset allocation for each asset class. The table below shows, for each asset class, the weighted average of the several plans asset allocation targets and positions at December 31, 2015 and 2014:

	Target Weight at	Position at December 31,	
Asset Class	December 31, 2015	2015	2014
Long duration bonds	48%	46%	49%
Equities	42%	42%	40%
Real estate	7%	7%	6%
Other	3%	5%	5%

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The following table sets forth by level within the fair value hierarchy a summary of our non-U.S. plan assets measured at fair value on a recurring basis:

	Value at December 31, 2015			
Description	Level 1	Level 2	Level 3	Total
Bonds	$ 1.1	$ 86.9		$ 88.0
Equities	1.1	38.3		39.4
Real estate	0.1	0.7		0.8
Other investments		0.9	$ 4.9	5.8
Cash and other short term investments	3.4			3.4
Net assets measured at fair value	$ 5.7	$ 126.8	$ 4.9	$ 137.4
Investments measured at net asset value				73.5
Net assets				$ 210.9

	Value at December 31, 2014			
Description	Level 1	Level 2	Level 3	Total
Bonds		$ 70.6		$ 70.6
Equities		40.3		40.3
Other investments			$ 5.6	5.6
Cash and other short term investments	$ 5.7			5.7
Net assets measured at fair value	$ 5.7	$ 110.9	$ 5.6	$ 122.2
Investments measured at net asset value				110.2
Net assets				$ 232.4

Level 3 assets decreased from December 31, 2014 to December 31, 2015 due mainly to the change in currency conversion from the Euro to the U.S. dollar.

The non-U.S. pension plans have $73.5 million and $110.2 million of investments in alternative investment funds at December 31, 2015 and December 31, 2014, respectively. 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 plans interest in the funds. Furthermore, changes to the liquidity provisions of the funds may significantly impact the fair value of the plans interest in the funds. As of December 31, 2015, there are no restrictions on redemption of these investments.

The following table sets forth a summary of the non-U.S. pension plan investments measured at NAV:

	Value at December 31, 2015			
Description	Fair Value	Unfunded Commitments	Redemption Frequency	Redemption Notice Period
Bonds	$ 9.0		Daily	Same Day
Equities	49.7		Daily	Prior Day - Same Day
Real estate	14.8		Monthly/Quarterly	2 - 90 Days
Investments measured at net asset value	$ 73.5	$		

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	Value at December 31, 2014			
Description	Fair Value	Unfunded Commitments	Redemption Frequency	Redemption Notice Period
Bonds	$ 43.8		Daily	Same Day
Equities	52.3		Daily	Prior Day - Same Day
Real estate	14.1		Monthly/Quarterly	2 - 90 Days
Investments measured at net asset value	$ 110.2	$		

Following is a description of the valuation methodologies used for non-U.S. plan assets measured at fair value and at NAV.

There have been no changes in the methodologies used at December 31, 2015 and 2014.

Bonds: Consists of investments in individual corporate and government bonds as well as investments in pooled funds investing in fixed income securities tailored to institutional investors. Investments in individual and pooled corporate and government bonds totaled $88.0 million and $70.6 million as of December 31, 2015 and 2014, respectively. Investments in individual bonds were measured at fair value based on the closing price reported in the active market in which the bond is traded and investments in pooled funds traded in a non-active market were valued at bid price. Investments in pooled corporate and government bonds totaling $9.0 million and $43.8 million as of December 31, 2015 and 2014, respectively, were measured at fair value using the NAV practical expedient.

Equities: Consists of investments in common and preferred stocks as well as investments in pooled funds investing in international equities tailored to institutional investors. Equity securities totaled $39.4 million and $40.3 million as of December 31, 2015 and 2014, respectively. Investments in common and preferred stocks were measured at fair value based on the closing price reported on the active market on which the individual securities are traded. Investments in pooled funds traded in a non-active market were valued at bid price Equity securities in pooled funds totaling $49.7 million and $52.3 million as of December 31, 2015 and 2014, respectively, were measured at fair value using the NAV practical expedient.

Real Estate: The plans real estate investments are comprised of individual and pooled real estate mutual funds. Real estate funds totaling $0.8 million as of December 31, 2015 were measured at fair value, with the funds valued at the closing price reported on the active market on which the individual funds are traded. Real estate funds totaling $14.8 million and $14.1 million as of December 31, 2015 and 2014, respectively, were measured at fair value using the NAV practical expedient.

Other Investments: Consists primarily of an investment in individual life insurance policies. These investments were measured at fair value is based on an actuarial reserve calculated using life tables and by discounting the related cash flows based on a fixed interest rate.

Cash and other Short Term Investments: Cash and short term investments consist 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.

Basis of Rate-of-Return Assumption

Long-term asset class return assumptions are determined based on input from investment professionals on the expected performance of the asset classes. The forecasts were averaged to come up with consensus passive return forecasts for each asset class. These forecast asset class returns were weighted by the plans target asset class weights, yielding a long-term return forecast of 4.5% and 5.5% for the years ended December 31, 2015 and 2014, respectively.

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

	2015	2014
Prepaid pension costs	$ 8.3	$ 7.4
Accounts payable and accrued expenses	(0.7)	(0.5)
Pension benefit liabilities	(30.7)	(35.9)
Net amount recognized	($ 23.1)	($ 29.0)

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

	2015	2014
Net actuarial (loss)	($ 26.6)	($ 33.2)
Net prior service (costs)	($ 0.6)	($ 0.7)
Accumulated other comprehensive (loss)	($ 27.2)	($ 33.9)

We expect to amortize $1.5 million of previously unrecognized net actuarial losses into pension cost in 2016.

We expect to contribute $3.1 million to our non-U.S. defined benefit pension plans in 2016.

The following benefit payments, which reflect expected future service, as appropriate, are expected to be paid over the next ten years:

	Pension Benefits
2016	$ 9.6
2017	9.3
2018	9.3
2019	10.0
2020	10.4
2021 - 2025	57.1

Costs for other worldwide defined contribution benefit plans were $14.4 million in 2015, $14.7 million in 2014 and $14.2 million in 2013.

NOTE 17. FINANCIAL INSTRUMENTS

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

	December 31, 2015		December 31, 2014	
	Carrying amount	Estimated fair value	Carrying amount	Estimated fair value
Assets/(Liabilities), net:				
Total debt, including current portion	($ 1,003.0)	($ 994.1)	($ 1,042.6)	($ 1,028.2)
Foreign currency contracts	6.2	6.2	5.4	5.4
Natural gas contracts	(0.8)	(0.8)	(3.0)	(3.0)
Interest rate swap contracts	(10.6)	(10.6)	(9.3)	(9.3)

The carrying amounts of cash and cash equivalents, receivables, accounts payable, accrued expenses, and short-term debt approximate fair value because of the short-term maturity of these instruments. The fair value estimates of long-term debt were primarily based upon quotes from a major financial institution of recently observed trading levels of our Term Loan B debt. The fair value estimates of foreign currency contract obligations are estimated from market quotes provided by a well-recognized national market data provider. The fair value

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estimates of natural gas contracts are estimated using internal valuation models with verification by obtaining quotes from major financial institutions. For natural gas swap transactions, fair value is calculated using NYMEX market quotes provided by a well-recognized national market data provider. For natural gas option based strategies, fair value is calculated using an industry standard Black-Scholes model with market based inputs, including but not limited to, underlying asset price, strike price, implied volatility, discounted risk free rate and time to expiration, provided by a well-recognized national market data provider. The fair value estimates for interest rate swap contracts are estimated by obtaining quotes from major financial institutions with verification by internal valuation models. Refer to Note 18 for a discussion of the fair value and the related inputs used to measure fair value.

The fair value measurement of assets and liabilities is summarized below:

	December 31, 2015		December 31, 2014	
	Fair value based on		Fair value based on	
	Quoted, active markets Level 1	Other observable inputs Level 2	Quoted, active markets Level 1	Other observable inputs Level 2
Assets/(Liabilities), net:				
Total debt, including current portion	($ 457.4)	($ 536.7)	($ 459.8)	($ 568.4)
Foreign currency contracts	6.2		5.4	
Natural gas contracts		(0.8)		(3.0)
Interest rate swap contracts		(10.6)		(9.3)

We do not have any financial assets or liabilities that are valued using Level 3 (unobservable) inputs.

NOTE 18. 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 forward swaps and option contracts to hedge these exposures. Exposure to individual counterparties is controlled and derivative financial instruments are entered into with a diversified group of major financial institutions. Forward swaps and option contracts are entered into for periods consistent with underlying exposure and do not constitute positions independent of those exposures. At inception, hedges that we designate as hedging instruments are formally documented as either (1) a hedge of a forecasted transaction or cash flow hedge, or (2) a hedge of the fair value of a recognized liability or asset or fair value 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 either the fair value or 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 counterparties having a credit rating of BBB or better. We monitor counterparty credit default swap levels and 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 thus we consider the risk of counterparty default to be negligible.

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Commodity Price Risk

We purchase natural gas for use in the manufacturing process and to heat many of our facilities. As a result, we are exposed to fluctuations in the price of natural gas. We have a policy to reduce cost volatility for North American natural gas purchases by purchasing natural gas forward contracts and swaps, purchased call options, and zero-cost collars up to 24 months forward. The contracts are based on forecasted usage of natural gas measured in mmBtu s. There is a high correlation between the hedged item and the hedge instrument. The gains and losses on these instruments offset gains and losses on the transactions being hedged. These instruments are designated as cash flow hedges. At December 31, 2015 and December 31, 2014, the notional amount of these hedges was $9.2 million and $14.6 million, respectively. The mark-to-market gain or loss on qualifying hedges is included in other comprehensive income to the extent effective, and reclassified into cost of goods sold in the period during which the underlying gas is consumed. The mark-to-market gains or losses on ineffective portions of hedges are recognized in cost of goods sold immediately. The earnings impact of the ineffective portion of these hedges was not material for the years ended December 31, 2015, 2014 and 2013.

Currency Rate Risk Sales and Purchases

We manufacture and sell our products in a number of countries throughout the world and, as a result, we are exposed to movements in foreign currency exchange rates. To a large extent, our global manufacturing and sales provide a natural hedge of foreign currency exchange rate movement, as foreign currency expenses generally offset foreign currency revenues. We manage our cash flow exposures on a net basis and use derivatives to hedge the majority of our unmatched foreign currency cash inflows and outflows. Our major foreign currency exposures as of December 31, 2015, based on operating profits by currency, are to the Canadian dollar, the Chinese Renminbi and the Australian dollar.

We use foreign currency forward exchange contracts to reduce our exposure to the risk that the eventual net cash inflows and outflows resulting from the sale of products to foreign customers and purchases from foreign suppliers will be adversely affected by changes in exchange rates. These derivative instruments are used for forecasted transactions and are classified as cash flow hedges. Cash flow hedges are executed quarterly, generally up to 15 months forward, and allow us to further reduce our overall exposure to exchange rate movements, since gains and losses on these contracts offset gains and losses on the transactions being hedged. The notional amount of these hedges was $73.3 million and $102.4 million at December 31, 2015 and December 31, 2014, respectively. Gains and losses on these instruments are recorded in other comprehensive income, to the extent effective, until the underlying transaction is recognized in earnings. The mark-to-market gains or losses on ineffective portions of hedges are recognized in SG&A expense. The earnings impact of the ineffective portion of these hedges was not material for the years ended December 31, 2015, 2014 and 2013.

Currency Rate Risk - Intercompany Loans and Dividends

Where efficient, reliable and liquid markets exist we may utilize foreign currency forward exchange contracts to hedge exposures created by cross-currency intercompany loans and dividends. The translation adjustments related to these loans and any offsetting gains or losses on the related derivative contracts are recorded in other non-operating income or expense. The notional amount of these hedges was $6.1 million and $21.2 million at December 31, 2015 and December 31, 2014, respectively. Due to the significant decline in the value of the Russian Ruble, we received $30.0 million in cash in 2014 as a result of settling Russian Ruble forward contracts utilized to hedge the currency impacts associated with intercompany loans to our Russian subsidiary. Our exposure to changes in the Ruble due to intercompany loans was unhedged at December 31, 2015 and 2014.

Interest Rate Risk

We utilize interest rate swaps to minimize the fluctuations in earnings caused by interest rate volatility. Interest expense on variable-rate liabilities increases or decreases as a result of interest rate fluctuations. The following table summarizes our interest rate swaps:

Trade Date	Notional Amount	Interest Rate Paid	Coverage Period	Risk Coverage
March 27, 2012	$250.0	1.928%	March 2012 to March 2018	Term Loan B
March 27, 2012	$200.0	2.810%	November 2015 to March 2018	Term Loan B
April 16, 2013	$250.0	1.398%	November 2015 to March 2018	Term Loan A

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Under the terms of the Term Loan A swaps we receive 3-month LIBOR and pay a fixed rate over the hedged period. Under the terms of the Term Loan B swaps, we receive the greater of 3-month LIBOR or the 1% LIBOR Floor and pay a fixed rate over the hedged period. These swaps are designated as cash flow hedges against changes in LIBOR for a portion of our variable rate debt. Gains and losses on these instruments are recorded in other comprehensive income, to the extent effective, until the underlying transaction is recognized in earnings. The mark-to-market gains or losses on ineffective portion of hedges are recognized in interest expense. There was no earnings impact of the ineffective portion of these hedges for the years ended December 31, 2015, 2014 and 2013.

Financial Statement Impacts

The following tables detail amounts related to our derivatives as of December 31, 2015 and December 31, 2014. Our derivative liabilities not designated as hedging instruments were $0.1 million at December 31, 2015 and were $0.5 million at December 31, 2014. We did not have any derivative assets not designated as hedging instruments for the years ended December 31, 2015 and 2014. The derivative asset and liability amounts below are shown in gross amounts; we have not netted assets with liabilities.

	Derivative Assets			Derivative Liabilities		
		Fair Value			Fair Value	
	Balance Sheet Location	December 31, 2015	December 31, 2014	Balance Sheet Location	December 31, 2015	December 31, 2014
Derivatives designated as hedging instruments						
Natural gas commodity contracts	Other current assets			Accounts payable and accrued expenses	$ 0.8	$ 3.0
Foreign exchange contracts	Other current assets	$ 6.6	$ 5.7	Accounts payable and accrued expenses	0.3	0.7
Foreign exchange contracts	Other non-current assets		0.9	Other long-term liabilities		0.1
Interest rate swap contracts	Other non-current assets		1.9	Other long-term liabilities	10.6	11.2
Total derivatives designated as hedging instruments		$ 6.6	$ 8.5		$ 11.7	$ 15.0

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	Amount of (Loss) Gain Recognized in Accumulated Other Comprehensive Income (AOCI) (Effective Portion)(a)			Location of (Loss) Gain Reclassified from AOCI into Income (Effective Portion)	(Loss) Gain Reclassified from AOCI into Income (Effective Portion)		
	2015	2014	2013		2015	2014	2013
Derivatives in Cash Flow Hedging Relationships							
Natural gas commodity contracts	($ 2.3)	($ 2.9)	$ 0.5	Cost of goods sold	($ 4.4)	$ 0.7	($ 2.6)
Foreign exchange contracts purchases	0.4	1.1	5.7	Cost of goods sold	1.0	1.0	1.5
Foreign exchange contracts sales	9.3	4.6		Net sales	8.4	5.0	
Interest rate swap contracts	(2.1)	(9.3)	(7.9)	Interest expense	(0.8)		
Total	$ 5.3	($ 6.5)	($ 1.7)		$ 4.2	$ 6.7	($ 1.1)

(a) As of December 31, 2015, the amount of existing gains in AOCI expected to be recognized in earnings over the next twelve months is $5.4 million.

The amount of pre-tax gain recognized in income for derivative instruments not designated as hedging instruments was $29.6 million for the year ended December 31, 2014. There was no material gain or loss recognized in 2015 or 2013.

NOTE 19. PRODUCT WARRANTIES

On certain products, we provide the original retail purchaser limited warranties which may cover structural integrity, wear, fade and certain other pre-installation manufacturing related defects. Our product warranties place certain requirements on the retail purchaser, including evidence of original purchase and require installation in accordance with our instructions. All of our warranties are non-transferrable. Warranty claims are most commonly experienced in the periods immediately following retail purchase and decline with the passage of time. In addition to our warranty program, under certain limited circumstances, we will occasionally and 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 cost associated with warranty repairs are provided to our independent distributors through a credit against accounts receivable from the distributor to us.

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The following table summarizes the activity for the accrual of product warranties for December 31, 2015 and 2014:

	2015	2014
Balance at beginning of period	$ 7.9	$ 7.4
Reductions for payments	(12.1)	(14.9)
Current year warranty accruals	11.9	15.4
Balance at end of period	$ 7.7	$ 7.9

NOTE 20. OTHER LONG-TERM LIABILITIES

	December 31, 2015	December 31, 2014
Long-term deferred compensation arrangements	$ 18.7	$ 21.0
Long-term portion of derivative liabilities	10.6	11.3
U.S. workers compensation	4.0	5.0
Postemployment benefit liabilities	3.8	4.8
Environmental liabilities	6.0	4.4
Other	6.5	6.7
Total other long-term liabilities	$ 49.6	$ 53.2

NOTE 21. SHARE-BASED COMPENSATION PLANS

The 2006 Long-Term Incentive Plan (2006 Plan) authorized us to issue stock options, stock appreciation rights, restricted stock awards, stock units, performance-based awards and cash awards to officers and key employees, and was scheduled to terminate on October 2, 2016. On June 24, 2011 our shareholders approved an amendment and restatement of the 2006 Plan, resulting in the 2011 Long-Term Incentive Plan (the LTIP). The 2006 Plan originally authorized up to 5,349,000 shares of common stock for issuance, and the amendment authorized an additional 1,600,000 shares of common stock for issuance, for a total of 6,949,000, which includes all shares that have been issued under the 2006 Plan. The amendment also extended the expiration date of the LTIP to June 24, 2021, after which time no further awards may be made. As of December 31, 2015, 1,516,166 shares were available for future grants under the LTIP.

	Year Ended December 31, 2015			
	Number of shares (thousands)	Weighted-average exercise price	Weighted-average remaining contractual term (years)	Aggregate intrinsic value (millions)
Option shares outstanding at beginning of period	1,601.2	$ 40.33		
Option shares exercised	(173.9)	(36.45)		$ 3.5
Options forfeited	(17.0)	(53.08)		
Option shares outstanding at end of period	1,410.3	$ 40.66	6.1	$ 10.9
Option shares exercisable at end of period	1,144.5	37.75	5.7	$ 10.9
Option shares vested and expected to vest	1,393.9	40.52	6.1	$ 10.9

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	Year Ended December 31, 2014			
	Number of shares (thousands)	Weighted-average exercise price	Weighted-average remaining contractual term (years)	Aggregate intrinsic value (millions)
Option shares outstanding at beginning of period	2,204.6	$ 35.60		
Options granted	318.9	53.93		
Option shares exercised	(640.8)	(27.80)		$ 17.1
Options forfeited	(228.8)	(48.03)		
Options expired	(52.7)	(43.49)		
Option shares outstanding at end of period	1,601.2	$ 40.33	6.9	$ 18.2
Option shares exercisable at end of period	1,015.3	34.12	6.0	$ 17.3
Option shares vested and expected to vest	1,579.6	40.17	6.9	$ 18.2

We have reserved sufficient authorized shares to allow us to issue new shares upon exercise of all outstanding options. Options generally become exercisable in three years and expire 10 years from the date of grant. When options are exercised, we may issue new shares, use treasury shares (if available), acquire shares held by investors, or a combination of these alternatives in order to satisfy the option exercises. The aggregate intrinsic value of options exercised during the year ended December 31, 2013 was $15.1 million. Cash proceeds received from options exercised for the years ended December 31, 2015, 2014 and 2013 were $6.4 million, $17.8 million and $8.6 million, respectively.

The fair value of option grants was estimated on the date of grant using the Black-Scholes option pricing model. There were no option grants in 2015. The weighted average assumptions for the years 2014 and 2013 are presented in the table below.

	2014	2013
Weighted-average grant date fair value of options granted (dollars per option)	$ 24.93	$ 21.62
Assumptions		
Risk free rate of return	1.9%	1.2%
Expected volatility	46.5%	42.4%
Expected term (in years)	6.0	6.0
Expected dividend yield	0.0%	0.0%

The risk free rate of return is 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 option. During 2014 we established the

expected volatility based on Armstrong s stock since it had traded a sufficient amount of time since our emergence from bankruptcy in October 2006 to produce valid results. Prior to 2014, we established the expected volatility based on an average of the actual historical volatilities of the stock prices of a peer group of companies. The expected life represented the midpoint of the average vesting period and the contractual life of the grant. We used an allowable simplified method to determine an appropriate expected term for our option valuation assumptions. The expected dividend yield was assumed to be zero because, at the time of each grant, we had no plans to declare a dividend. The assumptions outlined above were applicable to all option grants.

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We have also granted restricted stock and restricted stock units. The restricted stock awards entitle the recipient to a specified number of shares of Armstrong s common stock provided the prescribed service period is fulfilled. These awards generally had vesting periods of three years at the grant date. A summary of the 2015 and 2014 activity related to these awards follows:

	Non-Vested Stock Awards	
	Number of shares	Weighted-average fair value at grant date
December 31, 2013	153,577	$ 47.34
Granted	93,711	52.57
Vested	(61,902)	(41.61)
Forfeited	(9,784)	(52.08)
December 31, 2014	175,602	$ 51.89
Granted	308,528	55.62
Vested	(42,503)	(51.04)
Forfeited	(28,361)	(54.52)
December 31, 2015	413,266	$ 54.66

The table above contains 17,545 and 18,925 restricted stock units at December 31, 2015 and 2014, respectively, that are accounted for as liability awards as they are able to be settled in cash.

We have also granted performance restricted stock and performance restricted stock units. The performance based stock awards entitle the recipient to a specified number of shares of Armstrong s common stock provided the defined financial targets are achieved at the end of the performance period. These awards generally had vesting periods of three years at the grant date. A summary of the 2015 and 2014 activity related to these awards follows:

	Non-Vested Performance Stock Awards	
	Number of shares	Weighted-average fair value at grant date
December 31, 2013	390,681	$ 47.81
Granted	129,858	53.88
Vested	(78,125)	(41.69)

Forfeited	(108,051)		(46.37)
December 31, 2014	334,363	$	52.07
Vested	(70,381)		(50.38)
Forfeited	(47,048)		(51.26)
December 31, 2015	216,934		$52.84

The table above contains 6,537 and 12,207 performance stock units at December 31, 2015 and 2014, respectively, that are accounted for as liability awards as they are able to be settled in cash.

In addition to the equity awards described above, as of December 31, 2015 we had 20,616 fully-vested phantom shares outstanding for non-employee directors under the 2006 Phantom Stock Unit Plan. These awards are settled in cash and had vesting periods of one to three years. The awards are generally payable six months following the director s separation from service on the Board of Directors. The total liability recorded for these shares as of December 31, 2015 was $1.7 million which includes associated dividends. The awards under the 2006 Phantom Stock Unit Plan are not reflected in the Non-Vested Stock Awards tables above. The 2006 Phantom Stock Unit Plan is still in place; however, no additional shares will be granted under the plan.

During 2008, we adopted the 2008 Directors Stock Unit Plan. At December 31, 2015 and 2014, there were 197,475 and 174,478 restricted units, respectively, outstanding under the 2008 Directors Stock Unit Plan. In 2015 and 2014, we granted 22,997 and 21,262 restricted stock units, respectively, to non-employee directors. These awards generally have a vesting period of one year, and as of December 31, 2015 and 2014, 174,478 and

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153,216 shares, respectively, were vested but not yet delivered. The awards are generally payable six months following the director s separation from service on the Board of Directors. The awards granted under the 2008 Directors Stock Unit Plan are not reflected in the Non-Vested Stock Awards table above.

We recognize share-based compensation expense on a straight-line basis over the vesting period. Share-based compensation cost was $13.3 million ($8.7 million net of tax benefit) in 2015; $12.8 million ($8.5 million net of tax benefit) in 2014, and $16.5 million ($11.1 million net of tax benefit) in 2013. Share-based compensation expense is recorded within the Corporate Unallocated segment as a component of SG&A expenses. The benefits of tax deductions in excess of grant date fair value from the exercise of stock options and vesting of share-based awards for the years ended December 31, 2015 and 2014 was $0.5 million and $3.3 million, respectively. To the extent the vesting date value is greater than the grant date value, the excess tax benefit is a credit to additional paid in capital (APIC), but only if it reduces income tax currently payable. During 2015, we did not recognize any credits to APIC as a result of excess tax benefits reducing income tax currently payable.

As of December 31, 2015, there was $11.7 million of total unrecognized compensation cost related to non-vested share-based compensation arrangements. That cost is expected to be recognized over a weighted-average period of 1.7 years.

NOTE 22. EMPLOYEE COSTS

	2015	2014	2013
Wages, salaries and incentive compensation	$ 483.2	$ 478.4	$ 471.4
Payroll taxes	45.3	48.0	46.4
Pension expense, net	51.0	23.3	22.9
Insurance and other benefit costs	44.6	49.1	51.8
Share-based compensation	13.3	12.8	16.5
Total	$ 637.4	$ 611.6	$ 609.0

NOTE 23. LEASES

We rent certain real estate and equipment. Several leases include options for renewal or purchase, and contain clauses for payment of real estate taxes and insurance. In most cases, management expects that in the normal course of business, leases will be renewed or replaced by other leases.

	2015	2014	2013

Rent expense	$ 22.7	$ 21.7	$ 20.6
Sublease (income)	(0.4)	(0.4)	(0.3)
Net rent expense	$ 22.3	$ 21.3	$ 20.3

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Future minimum payments at December 31, 2015 by year and in the aggregate, having non-cancelable lease terms in excess of one year are as follows:

	Total Minimum Lease Payments	Sublease (Income)	Net Minimum Lease Payments
Scheduled minimum lease payments			
2016	$ 7.9	($ 0.4)	$ 7.5
2017	5.3	(0.2)	5.1
2018	3.4		3.4
2019	2.6		2.6
2020	1.6		1.6
Thereafter	3.2		3.2
Total	$ 24.0	($ 0.6)	$ 23.4

Assets under capital leases at December 31, 2015 and 2014 are not material.

NOTE 24. SHAREHOLDERS EQUITY

There were 5,057,382 treasury shares at December 31, 2015 and December 31, 2014.

The balance of each component of accumulated other comprehensive (loss), net of tax as of December 31, 2015 and 2014 is presented in the table below.

	December 31, 2015	December 31, 2014
Foreign currency translation adjustments	($ 33.8)	($ 8.3)
Derivative (loss), net	(3.3)	(4.0)
Pension and postretirement adjustments	(450.3)	(483.2)
Accumulated other comprehensive (loss)	($ 487.4)	($ 495.5)

The amounts and related tax effects allocated to each component of other comprehensive income (loss) for 2015, 2014, and 2013 are presented in the table below.

	Pre-tax Amount	Tax Benefit	After-tax Amount
2015			
Foreign currency translation adjustments	($ 25.5)		($ 25.5)
Derivative gain, net	1.1	($ 0.4)	0.7
Pension and postretirement adjustments	50.7	(17.8)	32.9
Total other comprehensive income	$ 26.3	($ 18.2)	$ 8.1

	Pre-tax Amount	Tax Expense	After-tax Amount
2014			
Foreign currency translation adjustments	($ 29.6)		($ 29.6)
Derivative (loss), net	(4.9)	$ 1.6	(3.3)
Pension and postretirement adjustments	(153.6)	62.6	(91.0)
Total other comprehensive (loss)	($ 188.1)	$ 64.2	($ 123.9)

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	Pre-tax Amount	Tax Benefit	After-tax Amount
2013			
Foreign currency translation adjustments	($ 8.8)		($ 8.8)
Derivative gain, net	28.4	($ 9.9)	18.5
Pension and postretirement adjustments	139.4	(49.3)	90.1
Total other comprehensive income	$ 159.0	($ 59.2)	$ 99.8

The following table summarizes the activity, by component, related to the change in AOCI for December 31, 2015 and 2014:

	Foreign Currency Translation Adjustments [1]	Derivative (Loss) Gain [1]	Pension and Postretirement Adjustments [1]	Total Accumulated Other Comprehensive (Loss) [1]
Balance, December 31, 2013	$ 21.3	($ 0.7)	($ 392.2)	($ 371.6)
Other comprehensive income before reclassifications, net of tax (expense) benefit of $ -, ($0.8), $77.2, and $76.4	(29.6)	1.1	(118.0)	(146.5)
Amounts reclassified from accumulated other comprehensive income		(4.4)	27.0	22.6
Net current period other comprehensive (loss) income	(29.6)	(3.3)	(91.0)	(123.9)
Balance, December 31, 2014	($ 8.3)	($ 4.0)	($ 483.2)	($ 495.5)
Other comprehensive income before reclassifications, net of tax (expense) benefit of $ -, ($1.8), $6.4, and $4.6	(25.5)	3.5	(12.0)	(34.0)
Amounts reclassified from accumulated other comprehensive income		(2.8)	44.9	42.1

Net current period other comprehensive (loss)	(25.5)	0.7	32.9	8.1
Balance, December 31, 2015	($ 33.8)	($ 3.3)	($ 450.3)	($ 487.4)

(1) Amounts are net of tax

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

	Amounts Reclassified from AOCI		Affected Line Item in the Consolidated Statement of Earnings and Comprehensive Income
	2015	2014	
Derivative Adjustments:			
Natural gas commodity contracts	$ 4.4	($ 0.7)	Cost of goods sold
Foreign exchange contracts - purchases	(1.0)	(1.0)	Cost of goods sold
Foreign exchange contracts - sales	(8.4)	(5.0)	Net sales
Interest rate swap contracts	0.8		Interest expense
Total expense, before tax	(4.2)	(6.7)	
Tax impact	1.4	2.3	Income tax expense
Total expense, net of tax	(2.8)	(4.4)	
Pension and Postretirement Adjustments:			
Prior service cost amortization	0.6	0.6	Cost of goods sold
Prior service cost amortization	0.7	0.7	SG&A expense
Amortization of net actuarial loss	35.5	21.7	Cost of goods sold
Amortization of net actuarial loss	32.3	18.6	SG&A expense
Total expense, before tax	69.1	41.6	
Tax impact	(24.2)	(14.6)	Income tax expense
Total expense, net of tax	44.9	27.0	
Total reclassifications for the period	$ 42.1	$ 22.6	

Amounts reported above for 2014 and 2013 include amounts that have been classified as discontinued operations.

NOTE 25. SUPPLEMENTAL FINANCIAL INFORMATION

	2015	2014	2013
Selected operating expense			
Maintenance and repair costs	$ 92.6	$ 89.0	$ 89.7
Research and development costs	31.1	30.6	29.3
Advertising costs	10.6	10.9	12.2
Other non-operating expense			
Foreign currency transaction loss, net of hedging activity	$ 22.8	$ 8.4	$ 1.6
Other	0.7	2.1	0.4
Total	$ 23.5	$ 10.5	$ 2.0
Other non-operating income			
Interest income	$ 2.2	$ 2.5	$ 3.3
Foreign currency transaction gain, net of hedging activity	3.0		0.1
Other	0.1	0.1	0.4
Total	$ 5.3	$ 2.6	$ 3.8

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NOTE 26. RELATED PARTIES

We purchase grid products from WAVE, our 50%-owned joint venture with Worthington Industries. The total amount of these purchases was $73.7 million in 2015, $85.4 million in 2014 and $88.9 million in 2013. We also provide certain selling, promotional and administrative processing services to WAVE for which we receive reimbursement. Those services amounted to $15.2 million in 2015, $14.7 million in 2014, and $14.9 million in 2013. The net amount due to WAVE from us for all of our relationships was $5.4 million as of December 31, 2015 and $8.5 million as of December 31, 2014. See Note 9 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. These regulatory requirements continually change, therefore we cannot predict with certainty future expenditures associated with compliance with environmental requirements.

Environmental Sites

Summary

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, and state or international Superfund and similar type environmental laws at several domestically- and internationally-owned, formerly owned and non-owned locations allegedly resulting from past industrial activity. In a few cases, we are one of several potentially responsible parties and have agreed to jointly fund the required investigation 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 are currently pursuing coverage and recoveries under those policies with respect to certain of the sites, but we are unable to predict the outcome or costs of these proceedings.

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 Chapter 11 reorganization upon the validity of the claim.

Specific Material Events

St Helens, OR

In August 2010, we entered into a Consent Order (the Consent Order) with the Oregon Department of Environmental Quality (ODEQ), along with Kaiser Gypsum Company, Inc. (Kaiser), and Owens Corning Sales LLC (OC), with respect to our St. Helens, OR Building Products facility, which was previously owned by Kaiser and then OC. The Consent Order, which replaces a previous order of the ODEQ requiring us to investigate and remediate hazardous substances present at the facility, requires that we and Kaiser complete a remedial investigation and feasibility study (RI/FS) on the portion of the site owned by us (Owned Property), which is comprised of Upland and Lowland areas. The Consent Order further requires us, Kaiser and OC to conduct an RI/FS in the In-Water area of the adjacent Scappoose Bay. We are currently in an investigation phase for both the Owned Property and the Scappoose Bay and are working with ODEQ, Kaiser and OC to finalize the reports to move to the Feasibility Study phase. We have determined that it is probable that remedial action for certain portions of both the Upland and Lowland areas of the Owned Property will be required. The current estimate of our future liability at the site includes any remaining known investigation work required by the Consent Order and the current projected cost of possible remedies for certain portions of the Owned Property. At this time, we are

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unable to reasonably estimate any remediation costs that we may ultimately incur with respect to other portions of the Owned Property or the Scappoose Bay or whether the projected costs for the areas we have included in our current estimate will increase. Additional investigative or remedial action required by ODEQ could result in additional costs greater than the amounts currently estimated. We believe that our ongoing work with ODEQ and Kaiser may enable us to reasonably estimate costs in 2016, and those costs may be material.

Costs and responsibilities for investigation, including the current RI/FS for the Owned Property continue to be shared with Kaiser pursuant to a cost sharing agreement with Kaiser. Contemporaneously with the execution of the Consent Order, we, Kaiser and OC also entered into a separate cost sharing agreement for both the investigation and possible remediation of the Scappoose Bay. Kaiser s shares under the cost sharing agreements are being funded by certain insurance policies, which comprise substantially all of Kaiser s assets. If Kaiser and OC are unwilling or unable to fulfill their obligations under the cost sharing agreements, or seek to contest or challenge the allocations, or if Kaiser s insurance policies are unable to fund Kaiser s shares, it could result in additional cost to us greater than the amounts currently estimated and those costs may be material.

The principal contaminants at the St. Helens site are arsenic and dioxin compounds from historic operations by prior owners of the plant. As part of the investigation on the site pursuant to the Consent Order, we conducted an analysis of the raw materials used in our manufacturing processes at the St. Helens facility to identify possible sources of these same contaminants. Our testing found low levels of naturally occurring dioxin in sourced clay, known as ball clay, used in the production of some of our fire-retardant products at our St. Helens manufacturing facility. Based on the data from the soil and sediment samples from our St. Helens property and the data from the ball clay, we do not believe that the presence of dioxin in our raw material will have a material impact on our ultimate liability at the site. In addition, consistent with our health and safety policies, we tested employee exposure levels at two facilities representative of our handling procedures at all plants that use this ball clay and, as a result of such testing, do not believe that the ball clay poses a hazard to our employees based on applicable regulatory standards. Based on the manufacturing process and the amount of raw material utilized, we also believe that the dioxin levels in our finished products do not pose a hazard to installers or consumers. While we have not received any claims related to this raw material or our fire-retardant products, there can be no assurance that the raw material or the finished products will not become the subject of legal claims or regulatory actions or that such claims or actions will not have a material adverse effect on our financial condition or results of operations.

Macon, GA

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

In September 2010, we entered into an Administrative Order on Consent for a Removal Action with the EPA to investigate PCB contamination in one of the landfills on our property, the Wastewater Treatment Plant Landfill (the

WWTP Landfill). We concluded the investigative phase of the Removal Action for the WWTP Landfill and submitted our final Engineering Evaluation/Cost Analysis (EE/CA) to the EPA in 2013. The EPA subsequently approved the EE/CA and issued an Action Memorandum in July 2013 selecting our recommended remedy for the Removal Action. In July 2014, we entered into an Administrative Order on Consent for Removal Action with the EPA for the WWTP Landfill. The EPA approved the Removal Action Work Plan on March 30, 2015 and the removal work commenced in the third quarter of 2015. We expect this work to be completed by the end of the first quarter of 2016. Our estimate of future liability includes costs for the remedial work for the WWTP Landfill.

It is probable that we will incur field investigation, engineering and oversight costs associated with a RI/FS with respect to the remainder of the Superfund site, which includes the other landfill on our property, as well as areas on and adjacent to Armstrong s property and Rocky Creek (the Remaining Site). On September 25, 2015, AWI and six other Potentially 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 Settlement Agreement (formerly known as an Administrative Order on Consent) to conduct an RI/FS of Operable Unit 2, which is the Remaining Site. We have not yet entered into an Order with the EPA for the Remaining Site and have not yet commenced an investigation of this portion of the site. We anticipate that the EPA will require significant investigative work for the Remaining Site and that we may ultimately incur costs in remediating any contamination discovered during the

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RI/FS. The current estimate of future liability at this site includes our estimated share of the costs of the investigative work that, at this time, we anticipate the EPA will require the PRP team to perform. We are unable to reasonably estimate AWI s final share of the costs or the total costs associated with the investigation work or any resulting remediation therefrom, although such amounts may be material.

Elizabeth City, NC

This site is a former cabinet manufacturing facility that was operated by Triangle Pacific Corporation, now known as Armstrong Wood Products, Inc. (Triangle Pacific) from 1977 until 1996. The site was formerly owned by the U.S. Navy (Navy) and Westinghouse, now CBS Corporation (CBS). We assumed ownership of the site when we acquired the stock of Triangle Pacific in 1998. Prior to our acquisition, the NC Department of Environment and Natural Resources listed the site as a hazardous waste site. In 1997, Triangle Pacific 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, Triangle Pacific and CBS entered into an RI/FS with the EPA for the site. In 2007, we and CBS 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. Although the parties initially submitted the RI/FS work plan to the EPA in 2004, the EPA did not approve the RI/FS work plan until August 2011. In January 2014, we submitted the draft Remedial Investigation and Risk Assessment reports and conducted supplemental investigative work based upon agency comments to those reports. The supplemental reports were submitted to the agency in January 2015 and the agency has not yet responded to those reports. We are unable to reasonably estimate any additional investigative costs or determine whether remediation will be required. If remediation is required, the related costs may be material, although we expect these costs to be shared with CBS and the Navy.

Summary of Financial Position

Liabilities of $6.0 million at December 31, 2015 and $4.4 million at December 31, 2014 were recorded for potential environmental liabilities, on a global basis, that we consider probable and for which a reasonable estimate of the probable liability could be made. 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. These liabilities are undiscounted.

The estimated liabilities above do not take into account any claims for recoveries from insurance or third parties. It is our policy to record probable recoveries that are either available through settlement or anticipated to be recovered through negotiation or litigation as assets in the Consolidated Balance Sheets. No material amounts were recorded for probable recoveries at December 31, 2015 or December 31, 2014.

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.

ANTIDUMPING AND COUNTERVAILING DUTY CASES

In October 2010, a coalition of U.S. producers of multilayered wood flooring (not including AWI and its subsidiaries) filed petitions seeking antidumping duties (AD) and countervailing duties (CVD) with the United States Department of Commerce (DOC) and the United States International Trade Commission (ITC) against imports of multilayered wood flooring from China. The AD and CVD petitions ultimately resulted in DOC issuing AD and CVD orders (the Orders) against multilayered wood flooring imported into the U.S. from China. These Orders and the associated additional duties they have imposed have been the subject of extensive litigation, both at DOC and in the U.S. courts.

We produce multilayered wood flooring domestically and import multilayered wood flooring from third party suppliers in China. Until October 2014, we also operated a plant in Kunshan, China (Armstrong Kunshan) that manufactured multilayered wood flooring for export to the U.S. As a result, we have been directly involved in the multilayered wood flooring-related litigation at DOC and in the U.S. courts. Our consistent view through the course of this matter has been, and remains, that our imports are neither dumped nor subsidized. In 2013, in the sole DOC investigation of AWI and its subsidiaries (as a mandatory respondent in connection with the first annual administrative review), Armstrong Kunshan received a final AD rate of 0.00% and a final CVD rate of 0.98%.

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Litigation regarding this matter has continued in the U.S. courts. The most recent court decision, on July 6, 2015, upheld certain DOC calculations on remand. Armstrong Kunshan as well as other respondents have appealed the DOC s original decision to apply an AD rate to us and other separate rate respondents in the original investigation (for which we received a final initial AD rate of 3.31%) to the Court of Appeals for the Federal Circuit.

DOC also continues to conduct annual administrative reviews of the AD and CVD final duty rates under the Orders. In July 2015, DOC issued its final AD and CVD rates for the second administrative review, which applies to imports of multilayered wood flooring made between December 1, 2012 and November 30, 2013 (AD) and between January 1, 2012 and December 31, 2012 (CVD). Armstrong Kunshan was not selected as a mandatory respondent for the second AD review and, therefore, was not subject to individual review, but we are subject to the rates applicable to importers that were not individually reviewed (the separate rate or all others respondents).

On July 7, 2015, the DOC issued a final All Others CVD rate of 0.99% that also applies to Armstrong Kunshan as part of the second CVD administrative review. On July 9, 2015, DOC issued a final AD determination for the second administrative review. DOC imposed a 13.74% AD rate determined solely on the basis of the AD duty rate assigned to the only mandatory respondent that did not receive a de minimis rate. DOC assigned this rate to all separate rate respondents that were not individually investigated, including Armstrong Kunshan. AWI and its subsidiaries, Armstrong Kunshan, and other respondents have filed complaints against DOC challenging the rate in the U.S. Court of International Trade with a decision expected in 2016. If such rates are ultimately upheld after any court appeals are exhausted, the estimated additional liability to us for the relevant period is approximately $4 million. This estimated additional liability was reflected in our second quarter 2015 results. We continue to accrue and make cash deposits for duties when we are the importer of record at the rates established by the DOC based on the second administrative review process.

DOC is also currently conducting its third annual administrative review. Armstrong Kunshan was not selected as a mandatory respondent for the third AD review and therefore, is not subject to individual mandatory review. As part of these reviews, Armstrong Kunshan s individual AD and CVD assessment rates may be changed and the revised rates applicable to participants that were not individually reviewed will apply to all multilayer wood flooring imports between December 1, 2013 and November 30, 2014 (AD) and between January 1, 2013 and December 31, 2013 (CVD). The DOC issued a preliminary AD rate of 13.34% and a preliminary CVD rate of 1.43% for the third administrative review. We do not anticipate final AD and CVD rates for the third administrative reviews until mid-2016. We are unable to predict the final AD and CVD rates for the pending reviews at this time, but plan to continue to defend our import practices and pursue our available legal rights and remedies, including litigation at DOC and in the U.S. courts. Armstrong Kunshan is not a respondent in the DOC fourth AD and CVD administrative reviews.

OTHER CLAIMS

We are involved in various lawsuits, claims, investigations and other legal matters from time to time that arise in the ordinary course of conducting business, including matters involving our products, intellectual property, relationships

with suppliers, relationships with distributors, relationships with competitors, employees and other matters. For example, we are currently a party to various litigation matters that involve product liability, tort liability and other claims under a wide range of allegations, including illness due to exposure to certain chemicals used in the workplace; or medical conditions arising from exposure to product ingredients or the presence of trace contaminants. In some cases, these allegations involve multiple defendants and relate to legacy products that we and other defendants purportedly manufactured or sold. We believe these claims and allegations to be without merit and intend to defend them vigorously. For these matters, we also may have rights of contribution or reimbursement from other parties or coverage under applicable insurance policies. We are currently pursuing coverage and recoveries under those policies, but are unable to predict the outcome or those demands.

While complete assurance cannot be given to the outcome of these proceedings, we do not believe that any of these matters, individually or in the aggregate, will have a material adverse effect on our financial condition, liquidity or results of operations.

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Armstrong World Industries, Inc., and Subsidiaries

Notes to Consolidated Financial Statements

(dollar amounts in millions, except share data)

NOTE 28. EARNINGS PER SHARE

Earnings per share components may not add due to rounding.

The following table is a reconciliation of net earnings to net earnings attributable to common shares used in our basic and diluted EPS calculations for the years ended December 31, 2015, 2014, and 2013:

	2015	2014	2013
Earnings from continuing operations	$ 52.6	$ 102.0	$ 127.3
Earnings allocated to participating non-vested share awards	(0.1)	(0.5)	(0.7)
Earnings from continuing operations attributable to common shares	$ 52.5	$ 101.5	$ 126.6

	2015	2014	2013
		(in millions)	
Basic shares outstanding	55.5	55.0	57.8
Dilutive effect of common stock equivalents	0.4	0.4	0.6
Diluted shares outstanding	55.9	55.4	58.4

Options to purchase 203,527, 142,038 and 181,041 shares of common stock were outstanding as of December 31, 2015, 2014, and 2013, respectively, but not included in the computation of diluted earnings per share, because the options were anti-dilutive.

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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, 2015. 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 changes in our internal control over financial reporting that occurred during the quarter ended December 31, 2015 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.

ITEM 9B. OTHER INFORMATION

Not applicable.

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PART III

ITEM 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

Executive Officers of the Company (as of February 22, 2016):

Name	Age	Present Position and Business Experience During the Last Five Years*
Matthew J. Espe	57	Armstrong World Industries, Inc. President & CEO; Director since August 2010 Ricoh Americas Corporation Chairman & CEO (2008)
Victor D. Grizzle	54	Armstrong World Industries, Inc. Executive Vice President & CEO, Armstrong Building Products since January 2011 Valmont Industries Group President, Global Structures, Coatings and Tubing (2005)
Mark A. Hershey	46	Armstrong World Industries, Inc. Senior Vice President, General Counsel since July 2011 Chief Compliance Officer since February 2012 Secretary (July 2011 to June 2014) Ricoh Americas Corporation Senior Vice President, General Counsel, Chief Compliance Officer & Secretary (2008)
Donald R. Maier	51	Armstrong World Industries, Inc. Executive Vice President and CEO, Armstrong Floor Products since September 2014 Senior Vice President, Global Operations Excellence (2010) TPG Capital Operational Consultant, several TPG portfolio companies (2008)

		Director of Operational Excellence, Freescale Semiconductors (2008)
Stephen F. McNamara	49	Armstrong World Industries, Inc. Vice President, Controller since July 2008
Ellen R. Romano	54	Armstrong World Industries, Inc. Senior Vice President, Human Resources since July 2013 Vice President, Human Resources, Armstrong Building Products (2009)
David S. Schulz	50	Armstrong World Industries, Inc. Senior Vice President, Chief Financial Officer since November 2013 Vice President, Armstrong Building Products (June 2011) Procter & Gamble Company Associate Director & CFO, Americas Snacks (2009) J.M. Smucker Company Finance Director, Coffee Strategic Business Area (2008)

* *Information in parentheses regarding previously held positions indicates either the duration the Executive Officer held the position or the year in which service in the position began.*

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

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Code of Ethics

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

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

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

The Codes of Ethics are available at http://www.armstrong.com/corporate/codes-policies.html and in print free of charge. Any waiver of the Company s Code of Business Conduct, particularly its conflicts-of-interest provisions, which may be proposed to apply to any director or executive officer, must be reviewed in advance by the Nominating and Governance Committee of the Board of Directors, which would be responsible for making a recommendation to the Board of Directors for approval or disapproval. The Board of Directors decision on any such matter would be disclosed publicly in compliance with applicable legal standards and the rules of the New York Stock Exchange. We intend to satisfy these requirements by making disclosures concerning such matters available on the For Investors page of our website. There were no waivers or exemptions from the Code of Business Conduct in 2015 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 Section 16(a) Beneficial Ownership Reporting Compliance in the Company s proxy statement for its 2016 annual meeting of shareholders to be filed no later than April 29, 2016.

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, Summary Compensation Table, Grants of Plan-Based Awards, Outstanding Equity Awards at Fiscal Year-End, Option Exercises and Stock Vested, Pension Benefits, Nonqualified Deferred Compensation, Potential Payments Upon Termination or Change in Control, Board of Directors 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 2016 annual meeting of shareholders to be filed no later than April 29, 2016.

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, Security Ownership of Management, and Equity Compensation Plan Information in the Company s proxy statement for its 2016 annual meeting of shareholders to be filed no later than April 29, 2016.

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

The information required by Item 13 is incorporated by reference to the sections entitled Certain Relationships and Related Transactions and Director Independence in the Company s proxy statement for its 2016 annual meeting of shareholders to be filed no later than April 29, 2016.

ITEM 14. PRINCIPAL ACCOUNTANT FEES AND SERVICES

The information required by Item 14 is incorporated by reference to the sections entitled Audit Committee Report and Relationship with Independent Auditors in the Company s proxy statement for its 2016 annual meeting of shareholders to be filed no later than April 29, 2016.

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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 2015 Annual Report on Form 10-K is listed in the Index to Financial Statements and Schedules on Page 42.

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, 2015, 2014, and 2013 (filed herewith as Exhibit 99.1).

3. The following exhibits are filed as part of this 2015 Annual Report on Form 10-K:

Exhibit No.	Description
2	Armstrong World Industries, Inc. s Fourth Amended Plan of Reorganization dated May 23, 2003 (as modified by modifications filed with the Bankruptcy Court on October 17, 2003, November 10, 2003, December 3, 2004 and February 21, 2006) is incorporated by reference from the Annual Report on Form 10-K, filed on February 24, 2006, wherein it appeared as Exhibit 2.3.
3.1	Amended and Restated Certificate of Incorporation of Armstrong World Industries, Inc. is incorporated by reference from the Current Report on Form 8-K filed on October 2, 2006, 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 28, 2014, wherein it appeared as Exhibit 3.1.
10.1	Amended and Restated Credit Agreement dated, March 15, 2013, among Armstrong World Industries, Inc. and Armstrong Wood Products, Inc., as borrowers, the guarantors identified therein and Bank of America, N.A., as administrative agent and collateral agent, is incorporated by reference from the Current Report on Form 8-K filed on March 18, 2013, wherein it appeared as Exhibit 10.1.
10.2	Amended and Restated Security Agreement dated, March 15, 2013, by and among Armstrong World Industries, Inc., the grantors named therein and Bank of America, N.A., as collateral agent, is incorporated by reference from the Current Report on Form 8-K filed on March 18, 2013, wherein it appeared as Exhibit 10.2.
10.3	Amended and Restated Pledge Agreement dated, March 15, 2013, by and among Armstrong World Industries, Inc., the pledgors named therein and Bank of America, N.A., as collateral agent, is incorporated by reference from the Current Report on Form 8-K filed on March 18, 2013, wherein it appeared as Exhibit 10.3.

10.4	Amended and Restated Canadian Pledge Agreement dated, March 15, 2013, by and among Armstrong World Industries, Inc. and Bank of America, N.A., as collateral agent, is incorporated by reference from the Current Report on Form 8-K filed on March 18, 2013, wherein it appeared as Exhibit 10.4.

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10.5	Receivables Purchase Agreement dated as of December 10, 2010, by and among Armstrong World Industries, Inc., as initial servicer and collection agent, Armstrong Receivables Company LLC, as seller, Atlantic Asset Securitization LLC, as conduit purchaser, and Credit Agricole Corporate and Investment Bank, as administrative agent, an issuer of letters of credit and related committed purchaser, is incorporated by reference from the Current Report on Form 8-K filed on December 14, 2010, wherein it appeared as Exhibit 10.1.
10.6	Purchase and Sale Agreement dated as of December 10, 2010, by and among Armstrong World Industries, Inc., as originator and as initial servicer, Armstrong Hardwood Flooring Company, as originator, and Armstrong Receivables Company LLC, is incorporated by reference from the Current Report on Form 8-K filed on December 14, 2010, wherein it appeared as Exhibit 10.2.
10.7	Omnibus Amendment to Receivables Purchase Agreement and Purchase and Sale Agreement dated as of August 1, 2011, by and among Armstrong World Industries, Inc., Armstrong Receivables Company LLC, Armstrong Hardwood Flooring Company, Atlantic Asset Securitization LLC, and Credit Agricole Corporate and Investment Bank, is incorporated by reference from the Annual Report on Form 10-K filed on February 27, 2012, wherein it appeared as Exhibit 10.9.
10.8	Second Omnibus Amendment to Receivables Purchase Agreement and Purchase and Sale Agreement dated as of December 21, 2011, by and among Armstrong World Industries, Inc., Armstrong Receivables Company LLC, as seller, Armstrong Hardwood Flooring Company, as originator, Atlantic Asset Securitization LLC, as resigning conduit purchaser, Credit Agricole Corporate and Investment Bank, as resigning administrative agent, resigning related committed purchaser and resigning LC bank, The Bank of Nova Scotia, as successor administrative agent, successor related committed purchaser and successor LC bank, and Liberty Street Funding LLC, as successor conduit purchaser, is incorporated by reference from the Annual Report on Form 10-K filed on February 27, 2012, wherein it appeared as Exhibit 10.10.
10.9	Third Omnibus Amendment Agreement, dated as of March 28, 2013, by and among Armstrong Receivables Company, LLC, Armstrong World Industries, Inc., Armstrong Hardwood Flooring Company, The Bank of Nova Scotia, and Liberty Street Funding LLC, is incorporated by reference from the Quarterly Report on Form 10-Q filed on April 29, 2013, wherein it appeared as Exhibit 10.1.
10.10	Fourth Amendment Agreement, dated as of December 18, 2014, by and among Armstrong Receivables Company, LLC, Armstrong World Industries, Inc., Armstrong Hardwood Flooring Company, The Bank of Nova Scotia, and Liberty Street Funding LLC, is incorporated by reference from the Annual Report on Form 10-K filed on February 23, 2015, wherein it appeared as Exhibit 10.10.
10.11	Stipulation and Agreement with Respect to Claims of Armstrong Holdings, Inc. and Armstrong Worldwide, Inc.; and Motion for Order Approving Stipulation and Agreement are incorporated by reference from the Current Report on Form 8-K filed on February 27, 2007, wherein they appeared as Exhibits 99.2 and 99.3, respectively.
10.12	Amended and Restated Joint Venture Agreement, dated February 22, 2016 between Armstrong Ventures, Inc. and Worthington Ventures, Inc.
10.13	Management Achievement Plan for Key Executives, effective as of November 28, 1983, as amended April 30, 2007, December 8, 2008, and 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 B.*

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10.14	2006 Long-Term Incentive Plan, as amended February 23, 2009, is incorporated by reference from the Annual Report on Form 10-K, filed on February 26, 2009, wherein it appeared as Exhibit 10.13.*
10.15	Form of Stock Option Agreement under 2006 Long-Term Incentive Plan is incorporated by reference from the Current Report on Form 8-K filed on October 2, 2006, wherein it appeared as Exhibit 10.5.*
10.16	Form of Restricted Stock Award Agreement under 2006 Long-Term Incentive Plan is incorporated by reference from the Current Report on Form 8-K filed on October 2, 2006, wherein it appeared as Exhibit 10.6.*
10.17	Form of Restricted Stock and/or Option Award under 2006 Long-Term Incentive Plan is incorporated by reference from the Current Report on Form 8-K filed on October 2, 2006, wherein it appeared as Exhibit 10.7.*
10.18	Form of Restricted Stock Award under the 2006 Long-Term Incentive Plan is incorporated by reference from the 2007 Annual Report on Form 10-K, filed on February 29, 2008, wherein it appeared as Exhibit 10.35.*
10.19	Form of Stock Option Award under the 2006 Long-Term Incentive Plan is incorporated by reference from the Quarterly Report on Form 10-Q for the quarter ended March 31, 2008, filed on May 1, 2008, wherein it appeared as Exhibit 10.37.*
10.20	Stock Option Award under the 2006 Long-Term Incentive Plan to Thomas B. Mangas is incorporated by reference from the Current Report on Form 8-K filed on April 6, 2010, wherein it appeared as Exhibit 10.1.*
10.21	Form of Stock Option Award under the 2006 Long-Term Incentive Plan used in connection with award to Stephen F. McNamara is incorporated by reference from the Current Report on Form 8-K filed on April 6, 2010, wherein it appeared as Exhibit 10.2.*
10.22	Stock Option and Performance Restricted Stock Unit Awards under the 2006 Long-Term Incentive Plan to Donald R. Maier dated September 7, 2010, is incorporated by reference from the Annual Report on Form 10-K filed on February 27, 2012, wherein it appeared as Exhibit 10.25.*
10.23	Form of Stock Option and Restricted Stock Unit Award under the 2006 Long-Term Incentive Plan used in connection with awards to Victor D. Grizzle in connection with new hire grant, is incorporated by reference from the Annual Report on Form 10-K filed on February 27, 2012, wherein it appeared as Exhibit 10.26.*
10.24	Forms of Stock Option and Performance Restricted Stock Unit Award under the 2006 Long-Term Incentive Plan used in connection with March 2011 grants to officers (except Donald R. Maier) and new hire grant for Mark A. Hershey, is incorporated by reference from the Annual Report on Form 10-K filed on February 27, 2012, wherein it appeared as Exhibit 10.27.*
10.25	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.*
10.26	Form of 2011 Long-Term Incentive Plan Terms and Conditions (Grant of Nonqualified Stock Options U.S. (Executive Officer), is incorporated by reference from the Quarterly Report on Form 10-Q filed on April 30, 2012, wherein it appeared as Exhibit 10.1.*

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10.27	Form of 2011 Long-Term Incentive Plan Terms and Conditions (Grant of Nonqualified Stock Options U.S.), is incorporated by reference from the Quarterly Report on Form 10-Q filed on April 30, 2012, wherein it appeared as Exhibit 10.2.*
10.28	Form of 2011 Long-Term Incentive Plan Terms and Conditions (Grant of Nonqualified Stock Options Non-U.S. (Executive Officer)), is incorporated by reference from the Quarterly Report on Form 10-Q filed on April 30, 2012, wherein it appeared as Exhibit 10.3.*
10.29	Form of 2011 Long-Term Incentive Plan Terms and Conditions (Grant of Time-Based Restricted Stock Units U.S.), is incorporated by reference from the Quarterly Report on Form 10-Q filed on April 30, 2012, wherein it appeared as Exhibit 10.4.*
10.30	Form of 2011 Long-Term Incentive Plan Terms and Conditions (Grant of Time-Based Restricted Stock Units Payable in Cash Non-U.S.), is incorporated by reference from the Quarterly Report on Form 10-Q filed on April 30, 2012, wherein it appeared as Exhibit 10.5.*
10.31	Form of 2011 Long-Term Incentive Plan Terms and Conditions (Grant of Time-Based Restricted Stock Units Payable in Shares Non-U.S.), is incorporated by reference from the Quarterly Report on Form 10-Q filed on April 30, 2012, wherein it appeared as Exhibit 10.6.*
10.32	Form of 2011 Long-Term Incentive Plan Terms and Conditions (Grant of Performance-Based Restricted Stock Units Payable in Shares U.S. (Executive Officer)), is incorporated by reference from the Quarterly Report on Form 10-Q filed on April 30, 2012, wherein it appeared as Exhibit 10.7.*
10.33	Form of 2011 Long-Term Incentive Plan Terms and Conditions (Grant of Performance-Based Restricted Stock Units Payable in Shares U.S.), is incorporated by reference from the Quarterly Report on Form 10-Q filed on April 30, 2012, wherein it appeared as Exhibit 10.8.*
10.34	Form of 2011 Long-Term Incentive Plan Terms and Conditions (Grant of Performance-Based Restricted Stock Units Payable in Cash Non-U.S.), is incorporated by reference from the Quarterly Report on Form 10-Q filed on April 30, 2012, wherein it appeared as Exhibit 10.9.*
10.35	Form of 2011 Long-Term Incentive Plan Terms and Conditions (Grant of Performance-Based Restricted Stock Units Payable in Shares Non-U.S. (Executive Officer)), is incorporated by reference from the Quarterly Report on Form 10-Q filed on April 30, 2012, wherein it appeared as Exhibit 10.10.*
10.36	Form of 2011 Long-Term Incentive Plan Terms and Conditions, as amended for 2013 (Grant of Nonqualified Stock Options U.S. (Executive Officer)), is incorporated by reference from the Quarterly Report on Form 10-Q filed on April 29, 2013, wherein it appeared as Exhibit 10.2.*
10.37	Form of 2011 Long-Term Incentive Plan Terms and Conditions, as amended for 2013 (Grant of Nonqualified Stock Options U.S.), is incorporated by reference from the Quarterly Report on Form 10-Q filed on April 29, 2013, wherein it appeared as Exhibit 10.3.*
10.38	Form of 2011 Long-Term Incentive Plan Terms and Conditions, as amended for 2013 (Grant of Nonqualified Stock Options Non-U.S.), is incorporated by reference from the Quarterly Report on Form 10-Q filed on April 29, 2013, wherein it appeared as Exhibit 10.4.*
10.39	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.*

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10.40	Form of 2011 Long-Term Incentive Plan Terms and Conditions, as amended for 2014 (Grant of Nonqualified Stock Options Non-U.S.), is incorporated by reference from the Quarterly Report on Form 10-Q filed on April 28, 2014, wherein it appeared as Exhibit 10.2.*
10.41	Form of 2011 Long-Term Incentive Plan Terms and Conditions, as amended for 2014 (Grant of Time-Based Restricted Stock Units U.S.), is incorporated by reference from the Quarterly Report on Form 10-Q filed on April 28, 2014, wherein it appeared as Exhibit 10.3.*
10.42	Form of 2011 Long-Term Incentive Plan Terms and Conditions, as amended for 2014 (Grant of Time-Based Restricted Stock Units Payable in Cash Non-U.S.), is incorporated by reference from the Quarterly Report on Form 10-Q filed on April 28, 2014, wherein it appeared as Exhibit 10.4.*
10.43	Form of 2011 Long-Term Incentive Plan Terms and Conditions, as amended for 2014 (Grant of Time-Based Restricted Stock Units Payable in Shares Non-U.S.), is incorporated by reference from the Quarterly Report on Form 10-Q filed on April 28, 2014, wherein it appeared as Exhibit 10.5.*
10.44	Form of 2011 Long-Term Incentive Plan Terms and Conditions, as amended for 2014 (Grant of Performance Restricted Stock Units Payable in Shares U.S.), is incorporated by reference from the Quarterly Report on Form 10-Q filed on April 28, 2014, wherein it appeared as Exhibit 10.6.*
10.45	Form of 2011 Long-Term Incentive Plan Terms and Conditions, as amended for 2014 (Grant of Performance Restricted Stock Units Payable in Cash Non-U.S.), is incorporated by reference from the Quarterly Report on Form 10-Q filed on April 28, 2014, wherein it appeared as Exhibit 10.7.*
10.46	Form of 2011 Long-Term Incentive Plan Terms and Conditions, as amended for 2014 (Grant of Performance Restricted Stock Units Payable in Shares Non-U.S.), is incorporated by reference from the Quarterly Report on Form 10-Q filed on April 28, 2014, wherein it appeared as Exhibit 10.8.*
10.47	Form of 2011 Long-Term Incentive Plan Terms and Conditions (Grant of Time-Based Restricted Stock Units U.S.), is incorporated by reference from the Quarterly Report on Form 10-Q filed on April 30, 2015, wherein it appeared as Exhibit 10.1.*
10.48	Form of 2011 Long-Term Incentive Plan Terms and Conditions (Grant of Time-Based Restricted Stock Units Payable in Cash Non-U.S.), is incorporated by reference from the Quarterly Report on Form 10-Q filed on April 30, 2015, wherein it appeared as Exhibit 10.2.*
10.49	Form of 2011 Long-Term Incentive Plan Terms and Conditions (Grant of Time-Based Restricted Stock Units Payable in Shares Non-U.S.), is incorporated by reference from the Quarterly Report on Form 10-Q filed on April 30, 2015, wherein it appeared as Exhibit 10.3.*
10.50	Nonqualified Deferred Compensation Plan effective January 2005, as amended July 23, 2010, is incorporated by reference from the Annual Report on Form 10-K, filed on February 28, 2011, wherein in appeared as Exhibit 10.4.*
10.51	Bonus Replacement Retirement Plan, effective as of January 1, 1998, as amended January 1, 2007, is incorporated by reference from the Annual Report on Form 10-K, filed on February 29, 2008, wherein it appeared as Exhibit 10.9.*
10.52	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.*

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10.53	2006 Phantom Stock Unit Plan, as amended December 8, 2008, is incorporated by reference from the 2008 Annual Report on Form 10-K, filed on February 26, 2009, wherein it appeared as Exhibit 10.18.*
10.54	2006 Phantom Stock Unit Agreement is incorporated by reference from the Current Report on Form 8-K filed on October 26, 2006, wherein it appeared as Exhibit 10.3. A Schedule of Participating Directors is incorporated by reference from the 2006 Annual Report on Form 10-K, filed on March 30, 2007, wherein it appeared as Exhibit 10.36.*
10.55	2007 Award under the 2006 Phantom Stock Unit Agreement and the Schedule of Participating Directors are incorporated by reference from the Current Report on Form 8-K filed on October 23, 2007, wherein they appeared as Exhibits 10.1 and 10.2, respectively.*
10.56	Schedule of Armstrong World Industries, Inc. Nonemployee Directors Compensation Summary is incorporated by reference from the Quarterly Report on Form 10-Q, filed on July 29, 2013, wherein it appeared as Exhibit 10.3.*
10.57	The 2008 Directors Stock Unit Plan, as amended December 8, 2008, November 30, 2010 and June 24, 2011 is incorporated by reference to the Current Report on Form 8-K filed on June 13, 2011, wherein it appeared as Exhibit 99.2.*
10.58	Form of 2009 Award under the 2008 Director Stock Unit Plan, as amended, is incorporated by reference from the Quarterly Report on Form 10-Q for the quarter ended September 30, 2009, filed on October 28, 2009, wherein it appeared as Exhibit 10.27.*
10.59	Form of 2010 Award under the 2008 Directors Stock Unit Plan, as amended, is incorporated by reference from the Quarterly Report on Form 10-Q for the quarter ended September 30, 2009, filed on October 28, 2009, wherein it appeared as Exhibit 10.27.*
10.60	Form of 2011, 2012, 2013 and 2014 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.*
10.61	Employment Agreement with Matthew J. Espe dated June 24, 2010, is incorporated by reference from the Current Report filed on Form 8-K filed on June 25, 2010, wherein it appeared as Exhibit 10.1.*
10.62	Amendment to Employment Agreement with Matthew J. Espe dated March 9, 2015, is incorporated by reference from the Current Report filed on Form 8-K filed on March 10, 2015, wherein it appeared as Exhibit 10.1.*
10.63	Amendment to Employment Agreement with Matthew J. Espe dated December 31, 2012, is incorporated by reference from the Current Report filed on Form 8-K filed on January 4, 2013, wherein it appeared as Exhibit 10.4.*
10.64	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.*
10.65	Offer Letter to Mark A. Hershey dated April 21, 2011, is incorporated by reference from the Current Report on Form 8-K filed on April 27, 2011, wherein it appeared as Exhibit 99.1.*
10.66	Form of Change in Control Severance Agreement with Matthew Espe dated August 1, 2015, is incorporated by reference from the Quarterly Report on Form 10-Q filed on October 29, 2015, wherein it appeared as Exhibit 10.1.*

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10.67	Form of Retention Agreement with Matthew J. Espe, David S. Schulz and Mark A. Hershey is incorporated by reference from the Report on Form 8-K filed on March 10, 2015, wherein it appeared as Exhibit 10.2.*
10.68	Form of Severance Agreement with David S. Schulz and Mark A. Hershey and Victor D. Grizzle is incorporated by reference from the Report on Form 8-K filed on March 10, 2015, wherein it appeared as Exhibit 10.3.*
10.69	Form of Change in Control Severance Agreement with Ms. Ellen R. Romano and Messrs. David S. Schulz, Victor D. Grizzle, Mark A. Hershey, Stephen H. Poole, and Stephen F. McNamara is incorporated by reference from the Quarterly Report on Form 10-Q filed on October 29, 2015, wherein it appeared as Exhibit 10.2.*
10.70	Change in Control Severance Agreement with Donald R. Maier, dated as of November 17, 2014, is incorporated by reference from the Report on Form 8-K filed on November 18, 2014, wherein it appeared as Exhibit 10.1.*
10.71	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 June 4, 2010, wherein it appeared as Exhibit 10.1.*
10.72	Separation of Employment and General Release Agreement dated as of November 5, 2013 by and between the Company and Frank J. Ready, is incorporated by reference from the Current Report on Form 8-K filed on December 2, 2013, wherein it appeared as Exhibit 10.1.
10.73	Transition Agreement with Donald R. Maier, dated as of March 31, 2014, is incorporated by reference from the Report on Form 8-K filed on April 4, 2014, wherein it appeared as Exhibit 10.1.*
11	Computation of Earnings Per Share.
12	Computation of Ratio of Earnings to Fixed Charges.
14	The Armstrong Code of Business Conduct, revised as of July 29, 2011, is incorporated by reference from the Current Report on Form 8-K filed on August 1, 2011, wherein it appeared as Exhibit 14.1.
21	Armstrong World Industries, Inc. s Subsidiaries.
23.1	Consent of Independent Registered Public Accounting Firm.
23.2	Consent of Independent Auditors.
31.1	Certification of Chief Executive Officer required by Rule 13a-15(e) or 15d-15(e) of the Securities Exchange Act.
31.2	Certification of Chief Financial Officer required by Rule 13a-15(e) or 15d-15(e) of the Securities Exchange Act.
32.1	Certification of Chief Executive Officer required by Rule 13a and 18 U.S.C. Section 1350 (furnished herewith).
32.2	Certification of Chief Financial Officer required by Rule 13a and 18 U.S.C. Section 1350 (furnished herewith).
99.1	Worthington Armstrong Venture consolidated financial statements as of December 31, 2015 and 2014 and for the years ended December 31, 2015, 2014 and 2013.

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99.2	Armstrong World Industries, Inc. Asbestos Personal Injury Settlement Trust Agreement dated as of October 2, 2006, by and among Armstrong World Industries, Inc. and trustees, is incorporated by reference from the Current Report on Form 8-K filed on October 2, 2006, wherein it appeared as Exhibit 10.2.
99.3	Stockholder and Registration Rights Agreement, dated as of October 2, 2006, by and between Armstrong World Industries, Inc. and the Armstrong World Industries, Inc. Asbestos Personal Injury Settlement Trust is incorporated by reference from the Current Report on Form 8-K filed on October 2, 2006, wherein it appeared as Exhibit 10.3.
99.4	Nomination and Shareholder Agreement with the persons or entities identified on Schedule I attached thereto (collectively the ValueAct Group and each individually, a member of the ValueAct Group), and Gregory P. Spivy in his individual capacity and as a member of the ValueAct Group (the ValueAct Designee), is incorporated by reference from the Report on Form 8-K filed on December 15, 2014, wherein it appeared as Exhibit 99.1.
101	Interactive Data Files**

* Management Contract or Compensatory Plan.
Filed herewith.

** 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.

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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/ Matthew J. Espe
Director, President and Chief Executive Officer

Date: February 22, 2016

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 Armstrong and in the capacities and on the dates indicated.

Directors and Principal Officers of the registrant AWI:

Name	Title
Matthew J. Espe	Director, President and Chief Executive Officer (Principal Executive Officer)
David S. Schulz	Senior Vice President and Chief Financial Officer (Principal Financial Officer)
Stephen F. McNamara	Vice President and Controller (Principal Accounting Officer)
Stanley A. Askren	Director
James J. Gaffney	Director
Tao Huang	Director
Michael F. Johnston	Director
Jeffrey Liaw	Director
Larry S. McWilliams	Director
James C. Melville	Director
James J. O Connor	Director

John J. Roberts	Director
Gregory P. Spivy	Director
Richard E. Wenz	Director

By: /s/ Matthew J. Espe
(Matthew J. Espe)

As of February 22, 2016

By: /s/ David S. Schulz
(David S. Schulz)

As of February 22, 2016

By: /s/ Stephen F. McNamara
(Stephen F. McNamara)

As of February 22, 2016

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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
2013				
Provision for bad debts	$ 3.9	$ 0.9	($ 1.6)	$ 3.2
Provision for discounts	19.7	113.8	(119.1)	14.4
Provision for warranties	8.7	15.7	(17.0)	7.4
Reserves for inventory	1.6	1.0	(0.4)	2.2
2014				
Provision for bad debts	$ 3.2	$ 2.1	($ 1.1)	$ 4.2
Provision for discounts	14.4	97.2	(98.6)	13.0
Provision for warranties	7.4	15.4	(14.9)	7.9
Reserves for inventory	2.2	1.8	(1.6)	2.4
2015				
Provision for bad debts	$ 4.2	$ 0.8	($ 1.0)	$ 4.0
Provision for discounts	13.0	105.4	(105.9)	12.5
Provision for warranties	7.9	11.9	(12.1)	7.7
Reserves for inventory	2.4	2.8	(2.0)	3.2