UNITED STATES SECURITIES AND EXCHANGE COMMISSION
Washington, DC 20549

FORM 10-K

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

For the Fiscal Year Ended December 31, 2018 **Commission File Number 1-5794**

MASCO CORPORATION

(Exact name of Registrant as Specified in its Charter)

Delaware	**38-1794485**
(State of Incorporation)	(I.R.S. Employer Identification No.)
17450 College Parkway, Livonia, Michigan	**48152**
(Address of Principal Executive Offices)	(Zip Code)

Registrant's telephone number, including area code: 313-274-7400
Securities Registered Pursuant to Section 12(b) of the Act:

Title of Each Class	Name of Each Exchange On Which Registered
Common Stock, $1.00 par value	New York Stock Exchange, Inc.

Securities Registered Pursuant to Section 12(g) of the Act: None

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

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes ☐ No ☑

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

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

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K 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. ☐

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

Large accelerated filer ☒	Accelerated filer ☐
Non-accelerated filer ☐	Smaller reporting company ☐
(Do not check if a smaller reporting company)	Emerging growth company ☐

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

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

The aggregate market value of the Registrant's Common Stock held by non-affiliates of the Registrant on June 30, 2018 (based on the closing sale price of $37.42 of the Registrant's Common Stock, as reported by the New York Stock Exchange on such date) was approximately $11,345,157,000.

Number of shares outstanding of the Registrant's Common Stock at January 31, 2019 :
294,492,500 shares of Common Stock, par value $1.00 per share

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the Registrant's definitive Proxy Statement to be filed for its 2019 Annual Meeting of Stockholders are incorporated by reference into Part III of this Form 10-K.

Masco Corporation
2018 Annual Report on Form 10-K

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PART I

Item 1. Business.

Masco Corporation is a global leader in the design, manufacture and distribution of branded home improvement and building products. Our portfolio of industry-leading brands includes BEHR® paint; DELTA® and HANSGROHE® faucets and bath and shower fixtures; KRAFTMAID® and MERILLAT® cabinets; MILGARD® windows and doors; KICHLER® decorative and outdoor lighting; and HOT SPRING® spas. We leverage our powerful brands across product categories, sales channels and geographies to create value for our customers and shareholders.

We believe that our solid results of operations and financial position for 2018 resulted from our continued focus on our three strategic pillars: driving the full potential of our core businesses, leveraging opportunities across our businesses, and actively managing our portfolio.

- To drive the full potential of our core businesses, we continued to pursue sales growth opportunities by introducing new products, enhancing services and penetrating adjacent markets. In addition, we continued to reduce costs and capitalize on synergies across our businesses with standardized operating tools, cost saving initiatives and the implementation of lean principles and process improvements in many areas, including production and functional support processes.

- We also continued to leverage the collective strength of our enterprise as we developed talent, facilitated operational improvements and realized supply chain efficiencies through strategic sourcing and sharing best practices across all of our functional departments.

- We actively managed our portfolio and completed the acquisition of The L.D. Kichler Co. ("Kichler") in 2018, and we remain committed to making selective acquisitions in attractive end markets. In addition, we repurchased over 18 million shares of our common stock and increased our quarterly dividend by 14 percent, which further enhanced value for our shareholders.

We believe that the actions we have taken over the last few years, combined with the Masco Operating System, our methodology to drive growth and productivity, have positioned us to further enhance shareholder value. We will continue to focus on our disciplined execution of our strategy in 2019.

Masco was incorporated under the laws of Michigan in 1929 and was reincorporated under the laws of Delaware in 1968.

Our Business Segments

We report our financial results in four segments aggregated by similarity in products. All of our segments, except the Plumbing Products segment, normally experience stronger sales during the second and third calendar quarters, corresponding with the peak season for repair and remodel activity and new home construction.

Plumbing Products

The businesses in our Plumbing Products segment sell a wide variety of products that are manufactured or sourced by us.

- The majority of our faucet, sink, bathing and showering products are sold in North America and Europe under the brand names DELTA ®, BRIZO ®, PEERLESS ®, HANSGROHE ®, AXOR ®, GINGER ®, NEWPORT BRASS ®, BRASSTECH ® and WALTEC ®. Our BRISTAN™ and HERITAGE™ products are sold primarily in the United Kingdom. These plumbing products include faucets, showerheads, handheld showers, valves, bath hardware and accessories, bathing units, shower bases and enclosures and toilets. We sell these products to home center and online retailers and to wholesalers and distributors that, in turn, sell them to plumbers, building contractors, remodelers, smaller retailers and consumers.

- We manufacture acrylic tubs, bath and shower enclosure units, and shower bases and trays. Our DELTA, PEERLESS and MIROLIN ® products are sold primarily to home center retailers in North America. Our MIROLIN products are also sold to wholesalers and distributors in Canada. Our HÜPPE ® shower enclosures and shower trays are sold through wholesale channels primarily in Europe.

- Our spas, exercise pools and fitness systems are manufactured and sold under our HOT SPRING ®, CALDERA ®, FREEFLOW SPAS ®, FANTASY SPAS ® and ENDLESS POOLS ® brands, as well as under other trademarks. Our spa and exercise pools are sold worldwide to independent specialty retailers and distributors and to online mass merchant retailers. Certain exercise pools are also available on a consumer-direct basis in North America and Europe, while our fitness systems are sold through independent specialty retailers as well as on a consumer-direct basis in some areas.

- Also included in our Plumbing Products segment are brass , copper and composite plumbing system components and other non-decorative plumbing products that are sold to plumbing, heating and hardware wholesalers, home center and online retailers, hardware stores, building supply outlets and other mass merchandisers. These products are marketed primarily in North America under our BRASSCRAFT ®, PLUMB SHOP ®, COBRA ®, COBRA PRO™ and MASTER PLUMBER ® brands and are also sold under private label.

- We also supply high-quality, custom thermoplastic extrusions, extruded plastic profiles and specialized fabrications to manufacturers, distributors and wholesalers for use in diverse applications that include faucets and plumbing supplies, appliances, oil and gas equipment, building products and automotive components.

We believe that our plumbing products are among the leaders in sales in North America and Europe. Competitors of the majority of our products in this segment include Lixil Group Corporation’s American Standard Brands and Grohe products, Kohler Co., Fortune Brands Home & Security, Inc.'s Moen, Rohl and Riobel brands and Spectrum Brands Holdings, LLC’s Pfister faucets. Competitors of our spas and exercise pools and systems include Artesian, Jacuzzi and Master Spas brands. Foreign manufacturers competing with us are located primarily in Germany and China. We face significant competition from private label products. Many of the faucet and showering products with which our products compete are manufactured by foreign manufacturers that are putting downward pressure on price. The businesses in our Plumbing Products segment manufacture products in North America, Europe and Asia and source products from Asia and other regions. Competition for our plumbing products is based largely on brand reputation, product features and innovation, product quality, customer service, breadth of product offering and price.

Many of our plumbing products contain brass, the major components of which are copper and zinc. We have multiple sources, both domestic and foreign, for the raw materials used in this segment, and sufficient raw materials have been available for our needs. We have encountered price volatility for brass, brass components and any components containing copper and zinc. To help reduce the impact of this volatility, from time to time we may enter into long-term agreements with certain significant suppliers or, occasionally, use derivative instruments. In addition, some of the products in this segment that we import may be subject to duties and tariffs.

Decorative Architectural Products

We produce architectural coatings, including paints, primers, specialty coatings, stains and waterproofing products. These products are sold in North America, South America and China under the brand names BEHR ®, KILZ ® and other trademarks to “do-it-yourself” and professional customers through home center retailers and other retailers. Net sales of architectural coatings comprised approximately 24 percent of our consolidated net sales in 2018 and 25 percent of our consolidated net sales in 2017 and 2016 . Our BEHR products are sold through The Home Depot, our largest customer overall, as well as this segment’s largest customer. The loss of this segment’s sales to The Home Depot would have a material adverse effect on this segment’s business and on our consolidated business as a whole.

Our competitors in this segment include large national and international brands such as Benjamin Moore & Co., PPG Industries, Inc. (with its Glidden, Olympic, PPG, and Pittsburgh Paint brands), The Sherwin-Williams Company (with its Sherwin-Williams and Valspar brands as well as Thompson’s Water Seal, and Minwax brands) a nd RPM International, Inc. (with its Rust-Oleum and Zinsser brands), as well as many regional and other national brands. We believe that brand reputation is an important factor in consumer selection, and that competition in this industry is also based largely on product features and innovation, product quality, customer service and price.

Titanium dioxide and acrylic resins are major raw materials in the manufacture of architectural coatings. The price for titanium dioxide can fluctuate as a result of global supply and demand dynamics and production capacity limitations, which can have a material impact on our costs and results of operations in this segment. The price of acrylic resins fluctuates based on the price of its components, which can also have a material impact on our costs and results of operations in this segment. In addition, the prices of crude oil, natural gas and certain petroleum by-products can also impact our costs and results of operations in this segment. We have agreements with certain significant suppliers for this segment that are intended to help assure continued supply.

Our Decorative Architectural Products segment also includes branded cabinet and door hardware, functional hardware, wall plates, hook and rail products, and picture hanging accessories, which are manufactured for us and sold to home center retailers, mass retailers, online retailers, other specialty retailers, original equipment manufacturers and wholesalers. These products are sold under the LIBERTY ®, BRAINERD ®, FRANKLIN BRASS ® and other trademarks, and our key competitors in North America include Amerock, Top Knobs, Richelieu and private label brands. Decorative bath hardware, shower accessories, and shower doors are sold under the brand names DELTA ® and FRANKLIN BRASS ® and other trademarks to wholesalers, home center retailers, mass retailers and other specialty retailers. Competitors for these products include Kohler, Moen and private label brands.

During 2018, we expanded this segment with our acquisition of Kichler lighting products, which include decorative indoor and outdoor lighting fixtures, ceiling fans, landscape lighting and LED lighting systems. These products are sold to home center retailers, online retailers, electrical distributors, landscape distributors and lighting showrooms under the brand names KICHLER ® and ÉLAN ® and under other trademarks. Competitors of these products include FX Luminaire, Hinkley Lighting, Inc., Hunter Fan Company, Progress Lighting, Inc. and private label brands.

We import certain materials and products for this segment that may be subject to duties and tariffs.

Cabinetry Products

In North America, we manufacture and sell semi-custom, stock and value-priced assembled cabinetry for kitchen, bath, storage, home office and home entertainment applications in a broad range of styles and price points to address consumer preferences. Our KRAFTMAID ® and CARDELL ® products are sold primarily to dealers and home center retailers, and our MERILLAT ® and QUALITY CABINETS™ products are sold primarily to dealers and homebuilders for both home improvement and new home construction. Cabinet sales are significantly affected by levels of activity in both retail consumer spending and new home construction, particularly spending for major kitchen and bathroom renovation projects. A significant portion of our cabinetry sales for home improvement projects are made through home center retailers.

The cabinet manufacturing industry in the United States includes several large companies and numerous local and regional businesses with whom we compete. We believe that competition in this industry is based largely on product features and selection, product quality and price. Our competitors in this segment include American Woodmark Corporation, Elkay Manufacturing Company, Inc. and Fortune Brands Home & Security, Inc.

The raw materials used in this segment are primarily hardwood lumber, plywood and particleboard and are available from multiple sources, both domestic and foreign. Some of the materials we import may be subject to duties and tariffs.

Windows and Other Specialty Products

We manufacture and sell vinyl, fiberglass and aluminum windows and patio doors, which are sold under the MILGARD ® brand name for home improvement and new home construction, principally in the western United States. MILGARD products are sold primarily through dealers and, to a lesser extent, directly to production homebuilders and through lumber yards and home center retailers. Our North American competitors for these products include national brands, such as Andersen, Jeld-Wen, Marvin, Pella, and Ply Gem, and numerous regional brands.

In the United Kingdom, we manufacture and sell vinyl windows, composite and panel doors, related products and components under several brand names, including DURAFLEX™, GRIFFIN™, PREMIER™ and EVOLUTION™. Sales are primarily through dealers and wholesalers to the repair and remodeling markets, although our DURAFLEX products are also sold to other window fabricators. United Kingdom competitors include many small and mid-sized firms and a few large, vertically integrated competitors.

In addition to price, we believe that brand reputation is an important factor in consumer selection and that competition in this industry in both the domestic and international markets is based largely on product quality, innovative products and customer and warranty services.

The raw materials used in this segment are available from multiple sources.

Additional Information

Intellectual Property

We hold numerous U.S. and foreign patents, patent applications, licenses, trademarks, trade names, trade secrets and proprietary manufacturing processes. We view our trademarks and other intellectual property rights as important, but do not believe that there is any reasonable likelihood of a loss of such rights that would have a material adverse effect on our present business as a whole.

Environmental Laws and Regulations Affecting Our Business

We are subject to federal, state, local and foreign government regulations regarding the protection of the environment, and we have certain responsibilities for environmental remediation. We monitor applicable laws and regulations relating to the protection of the environment and incur ongoing expense relating to compliance. Compliance with these laws and regulations may affect our product and production costs.

- Many products in our Plumbing Products segment are subject to restrictions on the amount of certain materials and chemicals, including lead and mercury, that can be in the product, and on water flow rates.
- Our Decorative Architectural Products segment is subject to requirements relating to the emission of volatile organic compounds, which has required us to reformulate paint products and may require further reformulation in the future.
- Our Cabinetry Products segment is also subject to requirements relating to the emission of volatile organic compounds, which may impact our sourcing of particleboard and may require us to install special equipment in manufacturing facilities.

We do not expect that compliance with the federal, state, local and foreign regulations relating to the discharge of materials into the environment, or otherwise relating to the protection of the environment, will result in material capital expenditures or have a material adverse effect on our competitive position or results of operations and financial position.

Backlog

We do not consider backlog orders to be material in any of our segments.

Employees

At December 31, 2018 , we employed approximately 26,000 people. We have generally experienced satisfactory relations with our employees.

Available Information

Our website is www.masco.com. Our periodic reports and all amendments to those reports required to be filed or furnished pursuant to Section 13(a) or Section 15(d) of the Securities Exchange Act of 1934 are available free of charge through our website as soon as reasonably practicable after those reports are electronically filed with or furnished to the Securities and Exchange Commission ("SEC"). This Report is being posted on our website concurrently with its filing with the SEC. Material contained on our website is not incorporated by reference into this Report. Our reports filed with the SEC also may be found on the SEC’s website at www.sec.gov .

Item 1A. Risk Factors.

There are a number of business risks and uncertainties that could affect our business. These risks and uncertainties could cause our actual results to differ from past performance or expected results. We consider the following risks and uncertainties to be most relevant to our specific business activities. Additional risks and uncertainties not presently known to us, or that we currently believe to be immaterial, also may adversely impact our business, results of operations and financial position.

Our business relies on residential repair and remodeling activity and, to a lesser extent, on new home construction activity, both of which are cyclical.

Our business relies on residential repair and remodeling activity and, to a lesser extent, on new home construction activity. A number of factors affect consumers' spending on home improvement projects as well as new home construction activity, including:

- consumer confidence levels;
- fluctuations in home prices;
- existing home sales;
- unemployment and underemployment levels;
- consumer income and debt levels;
- household formation;
- the availability of home equity loans and mortgages and the interest rates for and tax deductibility of such loans;
- the availability of skilled tradespeople for repair and remodeling work;
- trends in lifestyle and housing design; and
- weather and natural disasters.

The fundamentals driving our business are cyclical, fluctuating with economic cycles. Adverse changes or uncertainty involving the factors listed above or an economic downturn in the United States or worldwide could result in a decline in spending on residential repair and remodeling activity and a decline in demand for new home construction, which could adversely affect our results of operations and financial position.

We could lose market share if we do not maintain our strong brands, develop new products or respond to changing purchasing practices and consumer preferences or if our reputation is damaged.

Our competitive advantage is due, in part, to our ability to maintain our strong brands and to develop and introduce innovative new and improved products. While we continue to invest in brand building and brand awareness, these initiatives may not be successful. The uncertainties associated with developing and introducing new and improved products, such as gauging changing consumer preferences and successfully developing, manufacturing, marketing and selling these products, may impact the success of our product introductions. If we do not introduce new or improved products in a timely manner or if these products do not gain widespread acceptance, we could lose market share, which could adversely impact our results of operations and financial position. It is also possible that our competitors may improve their products more rapidly or effectively than we do, which could adversely affect our market share.

In recent years, consumer purchasing practices and preferences have shifted and our customers' business models and strategies have changed. As our customers execute their strategies to reach end consumers through multiple channels, they rely on us to support their efforts with our infrastructure, including maintaining robust and user-friendly websites with sufficient content for consumer research and providing comprehensive supply chain solutions and differentiated product development. If we are unable to successfully provide this support to our customers or if our customers are unable to successfully execute their strategies, our brands may lose market share.

If we do not timely and effectively identify and respond to changing consumer purchasing practices, including an increase in e-commerce, and consumer preferences, our relationships with our customers and with consumers could be harmed, the demand for our brands and products could be reduced and our results of operations and financial position could be adversely affected.

Our public image and reputation are important to maintaining our strong brands and could be adversely affected by various factors, including product quality and service, claims and comments in social media or the press, or negative publicity regarding disputes or legal action against us, even if unfounded. Damage to our public image or reputation could adversely affect our sales and results of operations and financial position.

We face significant competition and operate in an evolving competitive landscape.

Our products face significant competition. We believe that brand reputation is an important factor affecting product selection and that we compete on the basis of product features and innovation, product quality, customer service, warranty and price. We sell many of our products through home center retailers, online retailers, distributors and independent dealers and rely on these customers to market and promote our products to consumers. Our success with our customers is dependent on our ability to provide quality products and timely delivery. In addition, home center retailers, which have historically concentrated their sales efforts on retail consumers and remodelers, are increasingly selling directly to professional contractors and installers, which may adversely affect our margins on our products that contractors and installers would otherwise buy through our dealers and wholesalers.

We also compete with low - cost foreign manufacturers and private label brands sold by our customers in a variety of our product groups. As market dynamics change, we may experience a shift in the mix of some products we sell toward more value - priced or opening price point products, which may affect our profitability.

Further, as the e - commerce channel expands, greater pricing transparency for consumers, continuing conflicts between our existing distribution channels and a need for different distribution methods could affect our results of operations and financial position. In addition, our relationships with our customers, including our home center customers, may be affected if we increase the amount of business we transact in the e-commerce channel.

If we are unable to maintain our competitive position in our industries , our results of operations and financial position could be adversely affected.

Our sales are concentrated with two significant customers.

Our sales are concentrated with our two largest customers. In 2018 , our net sales to The Home Depot were $2.7 billion (approximately 32 percent of our consolidated net sales), and our net sales to Lowe’s were less than 10 percent of our consolidated net sales. Our reliance on these significant customers may further increase if the mix of our business operations changes, including as a result of acquisitions or divestitures. These home center retailers can significantly affect the prices we receive for our products and the terms and conditions on which we do business with them. Additionally, these home center retailers may reduce the number of vendors from which they purchase and could make significant changes in their volume of purchases from us. Although other retailers, dealers, distributors and homebuilders represent other channels of distribution for our products and services, we might not be able to quickly replace, if at all, the loss of a substantial portion of our sales to The Home Depot or the loss of all of our sales to Lowe’s, and any such loss would have a material adverse effect on our business, results of operations and financial position.

In addition, these home center retailers are granted product exclusivity from time to time, which affects our ability to sell products to other customers and increases the complexity of our product offerings and our costs.

Variability in commodity costs, limited availability of commodities and increasing tariffs could affect our results of operations and financial position.

Various commodities, including, among others, brass, resins, titanium dioxide, zinc, wood and glass, are used to produce our products. Fluctuations in the availability and prices of these commodities have in the past and could increase the costs of our products. Our production of products could be affected if we or our suppliers are unable to procure our requirements for these commodities or if a shortage of these commodities drives their prices to levels that are not commercially feasible. Further, the cost of certain of our raw materials and finished goods is increasing as a result of new tariffs. Tariffs and rising energy costs could increase our production and transportation costs . In addition, water is a significant component of our architectural coatings products and may be subject to restrictions in certain regions. These factors could adversely affect our results of operations and financial position.

It can be difficult for us to pass on to customers our cost increases. Our existing arrangements with customers, competitive considerations and customer resistance to price increases may delay or make us unable to adjust selling prices. If we are not able to sufficiently increase the prices of our products or achieve cost savings to offset increased commodity and production costs, including the impact of increasing tariffs, our results of operations and financial position could be adversely affected. If we are able to increase our selling prices, sustained price increases for our products may lead to sales declines and loss of market share, particularly if our competitors do not increase their prices. When commodity prices decline, we have experienced and may in the future receive pressure from our customers to reduce our prices. Such reductions could adversely affect our results of operations and financial position.

From time to time we enter into long-term agreements with certain significant suppliers to help ensure continued availability of key commodities and to establish firm pricing, but at times these contractual commitments may result in our paying above market prices for commodities during the term of the contract. Occasionally, we may also use derivative instruments, including commodity futures and swaps. This strategy increases the possibility that we may make commitments for these commodities at prices that subsequently exceed their market prices, which has occurred and could occur in the future and may adversely affect our results of operations and financial position.

We are dependent on third-party suppliers.

We are dependent on third - party suppliers for many of our products and components, and our ability to offer a wide variety of products depends on our ability to obtain an adequate and timely supply of these products and components. Failure of our suppliers to timely provide us quality products on commercially reasonable terms, or to comply with applicable legal and regulatory requirements, or our policies regarding our supplier business practices, could have a material adverse effect on our results of operations and financial position or could damage our reputation. Sourcing these products and components from another supplier is time-consuming and costly. Accordingly, the loss of critical suppliers, or a substantial decrease in the availability of products or components from our suppliers, could disrupt our business and adversely affect our results of operations and financial position.

Many of the suppliers we rely upon are located in foreign countries. The differences in business practices, shipping and delivery requirements, changes in economic conditions and trade policies and laws and regulations, together with the limited number of suppliers, have increased the complexity of our supply chain logistics and the potential for interruptions in our production scheduling. If we are unable to effectively manage our supply chain or if there is a disruption in transporting the products or components, our results of operations and financial position could be adversely affected.

There are risks associated with our international operations and global strategies.

In 2018, 19 percent of our sales are made outside of North America (principally in Europe) and are transacted in currencies other than the U.S. dollar. In addition to our European operations, we manufacture products in Asia and source products and components from third parties globally. Risks associated with our international operations include changes in political, monetary and social environments, economic conditions, labor conditions and practices, the laws, regulations and policies of foreign governments, social and political unrest, terrorist attacks, cultural differences and differences in enforcement of contract and intellectual property rights.

We are also affected by laws applicable to U.S. companies doing business abroad or importing goods and materials. These include tax laws, laws regulating competition, anti-bribery/anti-corruption and other business practices, and trade regulations, including duties and tariffs. Compliance with these laws are costly, and future changes to these laws may require significant management attention and disrupt our operations. Additionally, while it is difficult to assess what changes may occur and the relative effect on our international tax structure, significant changes in how U.S. and foreign jurisdictions tax cross-border transactions could adversely affect our results of operations and financial position.

Our results of operations and financial position are also impacted by changes in currency exchange rates. Unfavorable currency exchange rates, particularly the Euro, the British pound sterling, the Canadian dollar and the Chinese Yuan Renminbi, have in the past adversely affected us, and could adversely affect us in the future. Fluctuations in currency exchange rates may present challenges in comparing operating performance from period to period.

Additionally, as the situation involving the United Kingdom’s decision to exit from the European Union develops, we could experience volatility in the currency exchange rates or a change in the demand for our products and services, particularly in our U.K. and European markets, or there could be disruption of our operations and our customers’ and suppliers’ businesses.

We may not achieve all of the anticipated benefits of our strategic initiatives.

We continue to pursue our strategic initiatives of investing in our brands, developing innovative products, and focusing on operational excellence through the Masco Operating System, our methodology to drive growth and productivity. All of these initiatives are designed to grow revenue, improve profitability and increase shareholder value over the mid - to long - term. Our business performance and results could be adversely affected if we are unable to successfully execute these initiatives or if we are unable to execute these initiatives in a timely and efficient manner. We could also be adversely affected if we have not appropriately prioritized and balanced our initiatives or if we are unable to effectively manage change throughout our organization.

We may not be able to successfully execute our acquisition strategy or integrate businesses that we acquire.

Pursuing the acquisition of businesses complementary to our portfolio is a component of our strategy for future growth. If we are not able to identify suitable acquisition candidates or consummate potential acquisitions at acceptable terms and prices, our long - term competitive positioning may be affected. Even if we are successful in acquiring businesses, we may experience risks in integrating these businesses into our existing business. Such risks include difficulties realizing expected synergies and economies of scale, diversion of our resources, unforeseen liabilities, issues or conflicts with our new or existing customers or suppliers, and difficulties in retaining critical employees of the acquired businesses. Future foreign acquisitions may also increase our exposure to foreign currency risks and risks associated with interpretation and enforcement of foreign regulations. Our failure to address these risks could cause us to incur additional costs and fail to realize the anticipated benefits of our acquisitions and could adversely affect our results of operations and financial position.

The long-term performance of our businesses relies on our ability to attract, develop and retain talented personnel.

To be successful, we must attract, develop and retain highly qualified , talented and diverse personnel who have the experience, knowledge and expertise to successfully implement our key strategic initiatives. We compete for employees with a broad range of employers in many different industries, including large multinational firms, and we invest significant resources in recruiting, developing, motivating and retaining them. From time to time, we have been affected by a shortage of qualified personnel in certain geographic areas. Our growth, competitive position and results of operations and financial position could be adversely affected by our failure to attract, develop and retain key employees, to build strong leadership teams, or to develop effective succession planning to assure smooth transitions of those employees and the knowledge and expertise they possess, or by a shortage of qualified personnel.

We rely on information systems and technology, and a breakdown of these systems could adversely affect our results of operations and financial position.

We rely on many information systems and technology to process, transmit, store and manage information to support our business activities. We may be adversely affected if our information systems breakdown, fail, or are no longer supported. In addition to the consequences that may occur from interruptions in our systems, increased global cybersecurity vulnerabilities, threats and more sophisticated and targeted attacks pose a risk to our information technology systems.

We have implemented security policies, processes and layers of defense designed to help identify and protect against intentional and unintentional misappropriation or corruption of our systems and information and disruption of our operations. Despite these efforts, our systems have been and in the future may be damaged, disrupted, or shut down due to cybersecurity attacks by unauthorized access, malicious software, undetected intrusion, hardware failures, or other events, and in these circumstances our disaster recovery plans may be ineffective or inadequate. These breaches or intrusions could lead to business interruption, exposure of proprietary or confidential information, data corruption, damage to the reputation of our brands, damage to our relationships with our customers and suppliers, exposure to litigation, and increased operational costs. Such events could adversely affect our results of operations and financial position.

In addition, we could be adversely affected if any of our significant customers or suppliers experiences any similar events that disrupt their business operations or damage their reputation.

We may not experience the anticipated benefits from our investments in new technology.

We continue to invest in new technology systems throughout our company, including implementations of Enterprise Resource Planning ("ERP") systems at our business units. ERP implementations are complex and require significant management oversight. While we are leveraging our experience and engaging consultants to assist as we deploy ERP systems, we have experienced, and may continue to experience, unanticipated expenses and interruptions to our operations during these implementations. These interruptions could affect our ability to produce and ship goods to our customers or to timely report financial results and the effectiveness of our internal controls. Our results of operations and financial position could be adversely affected if we do not appropriately select and implement our new technology systems in a timely manner or if we experience significant unanticipated expenses or disruptions in connection with the implementation of ERP systems.

Claims and litigation could be costly.

We are involved in various claims and litigation, including class actions and regulatory proceedings, that arise in the ordinary course of our business and that could have a material adverse effect on us. The types of matters may include, among others: competition, product liability, employment, warranty, advertising, contract, personal injury , environmental, intellectual property, product compliance and insurance coverage. The outcome and effect of these matters are inherently unpredictable, and defending and resolving them can be costly and can divert management's attention. We have and may continue to incur significant costs as a result of claims and litigation.

We are also subject to product safety regulations, recalls and direct claims for product liability that can result in significant costs and, regardless of the ultimate outcome, create adverse publicity and damage the reputation of our brands and business. Also, we rely on other manufacturers to provide products or components for products that we sell. Due to the difficulty of controlling the quality of products and components we source from other manufacturers, we are exposed to risks relating to the quality of such products and to limitations on our recourse against such suppliers.

We maintain insurance against some, but not all, of the risks of loss resulting from claims and litigation. The levels of insurance we maintain may not be adequate to fully cover our losses or liabilities. If any significant accident, judgment, claim or other event is not fully insured or indemnified against, it could adversely affect our results of operations and financial position.

Refer to Note T to the consolidated financial statements included in Item 8 of this Report for additional information about litigation involving our businesses.

Compliance with laws, government regulation and industry standards is costly, and our failure to comply could adversely affect our results of operations and financial position.

We are subject to a wide variety of federal, state, local and foreign laws and regulations pertaining to:

- securities matters;
- taxation;
- anti-bribery/anti-corruption;
- employment matters;
- health and safety;
- the protection of employees and consumers;
- product compliance;
- competition practices;
- trade, including duties and tariffs;
- data privacy and the collection and storage of information; and
- climate change and environmental issues.

In addition to complying with current requirements and known future requirements, even more stringent requirements could be imposed on us in the future. As we sell new types of products or existing products in new geographic areas, our failure to comply with the requirements applicable to those products or regions could adversely affect our results of operations and financial position. Additionally, some of our products must be certified by industry organizations. Compliance with new or changed laws, regulations and industry standards may require us to alter our product designs, our manufacturing processes, our packaging or our sourcing. Compliance activities are costly and require significant management attention and resources. If we do not effectively and timely comply with such regulations and industry standards, our results of operations and financial position could be adversely affected.

We may not be able to adequately protect or prevent the unauthorized use of our intellectual property.

Protecting our intellectual property is important to our growth and innovation efforts. We own a number of patents, trade names, brand names and other forms of intellectual property in our products and manufacturing processes throughout the world. There can be no assurance that our efforts to protect our intellectual property rights will prevent violations. Our intellectual property may be challenged or infringed upon by third parties, particularly in countries where property rights are not highly developed or protected. In addition, the global nature of our business increases the risk that we may be unable to obtain or maintain our intellectual property rights on reasonable terms. Furthermore, others may assert intellectual property infringement claims against us. Current and former employees, contractors or suppliers have or may have had access to proprietary or confidential information regarding our business operations that could harm us if used by, or disclosed to others, including our competitors. Protecting and defending our intellectual property could be costly, time consuming and require significant resources. If we are not able to protect our existing intellectual property rights, or prevent unauthorized use of our intellectual property, sales of our products may be affected and we may experience reputational damage to our brand names, increased litigation costs and adverse impact to our competitive position, which could adversely affect our results of operations and financial position.

Restrictive covenants in our credit agreement could limit our financial flexibility.

We must comply with both financial and nonfinancial covenants in our credit agreement, and in order to borrow under it, we cannot be in default with any of those provisions. Our ability to borrow under the credit agreement could be affected if our earnings significantly decline to a level where we are not in compliance with the financial covenants or if we default on any nonfinancial covenants. In the past, we have been able to amend the covenants in our credit agreement, but there can be no assurance that in the future we would be able to further amend them. If we were unable to borrow under our credit agreement, our financial flexibility could be restricted .

Item 1B. Unresolved Staff Comments.

None.

Item 2. Properties.

The table below lists our principal North American properties.

Business Segment	Manufacturing	Warehouse and Distribution
Plumbing Products	22	7
Decorative Architectural Products	8	18
Cabinetry Products	8	4
Windows and Other Specialty Products	10	3
Totals	48	32

Most of our North American facilities range from single warehouse buildings to complex manufacturing facilities. We own most of our North American manufacturing facilities, none of which is subject to significant encumbrances. A substantial number of our warehouse and distribution facilities are leased.

The table below lists our principal properties outside of North America.

Business Segment	Manufacturing	Warehouse and Distribution
Plumbing Products	10	19
Decorative Architectural Products	—	—
Cabinetry Products	—	—
Windows and Other Specialty Products	9	—
Totals	19	19

Most of our international facilities are located in China, Germany and the United Kingdom. We own most of our international manufacturing facilities, none of which is subject to significant encumbrances. A substantial number of our international warehouse and distribution facilities are leased.

We lease our corporate headquarters in Livonia, Michigan, and we own a building in Taylor, Michigan that is used by our Masco Technical Services (research and development) department. We continue to lease an office facility in Luxembourg, which serves as a headquarters for most of our foreign operations.

Each of our operating divisions assesses the manufacturing, distribution and other facilities needed to meet its operating requirements. Our buildings, machinery and equipment have been generally well maintained and are in good operating condition. We believe our facilities have sufficient capacity and are adequate for our production and distribution requirements.

Item 3. Legal Proceedings.

Information regarding legal proceedings involving us is set forth in Note T to the consolidated financial statements included in Item 8 of this Report and is incorporated herein by reference.

Item 4. Mine Safety Disclosures.

Not applicable.

PART II

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

The New York Stock Exchange is the principal market on which our common stock is traded, under the ticker symbol MAS. On January 31, 2019 , there were approximately 3,400 holders of record of our common stock.

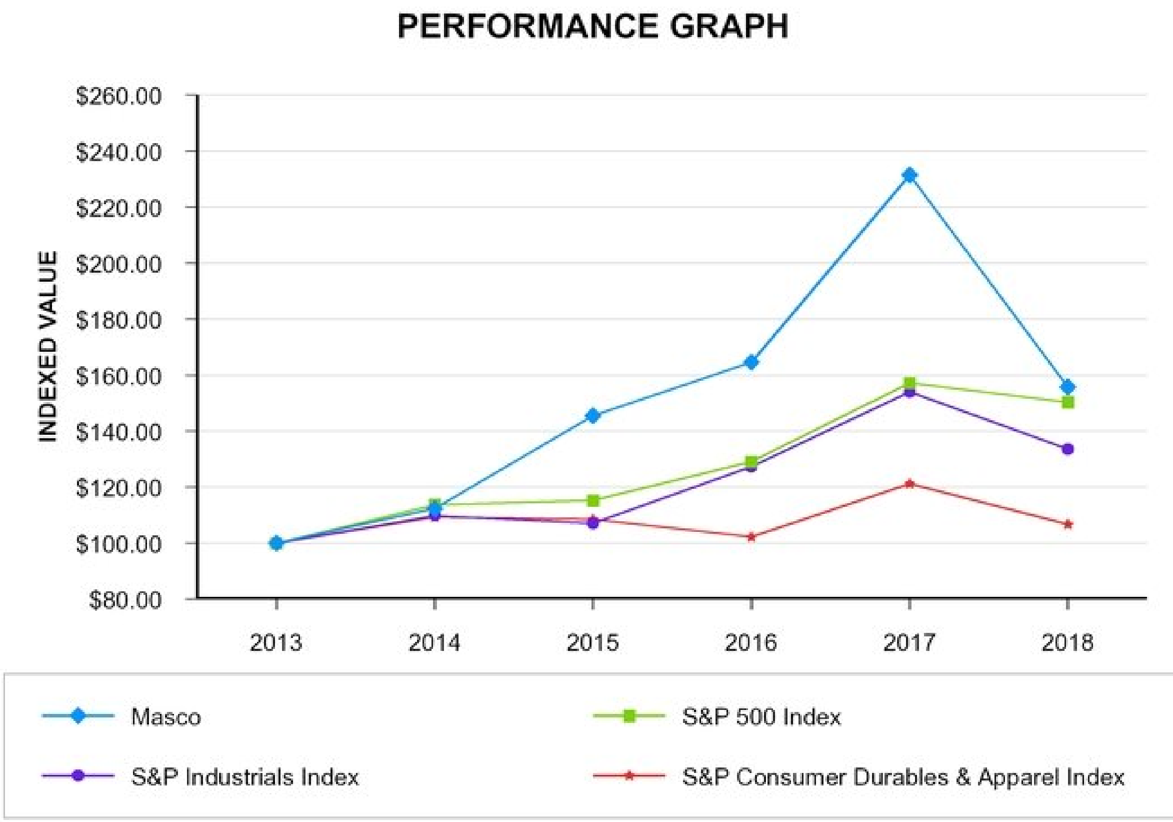
We expect that our practice of paying quarterly dividends on our common stock will continue, although the payment of future dividends is at the discretion of our Board of Directors and will depend upon our earnings, capital requirements, financial condition and other factors.

In May 2017, our Board of Directors authorized the repurchase, for retirement, of up to $1.5 billion of shares of our common stock in open-market transactions or otherwise. During 2018 , we repurchased and retired 18.6 million shares of our common stock (including 0.7 million shares to offset the dilutive impact of long-term stock awards granted during the year), for approximately $654 million . At December 31, 2018 , we had $636 million remaining under the 2017 authorization. The following table provides information regarding the repurchase of our common stock for the three-month period ended December 31, 2018 .

Period	Total Number of Shares Purchased	Average Price Paid Per Common Share	Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs	Maximum Value of Shares That May Yet Be Purchased Under the Plans or Programs
10/1/18 - 10/31/18	2,305,692	$ 32.54	2,305,692	$ 860,879,098
11/1/18 - 11/30/18	5,635,262	$ 31.24	5,635,262	$ 684,831,947
12/1/18 - 12/31/18	1,652,685	$ 29.79	1,652,685	$ 635,603,772
Total for the quarter	9,593,639		9,593,639	$ 635,603,772

Performance Graph

The table below compares the cumulative total shareholder return on our common stock with the cumulative total return of (i) the Standard & Poor's 500 Composite Stock Index ("S&P 500 Index"), (ii) The Standard & Poor's Industrials Index ("S&P Industrials Index") and (iii) the Standard & Poor's Consumer Durables & Apparel Index ("S&P Consumer Durables & Apparel Index"), from December 31, 2013 through December 31, 2018 , when the closing price of our common stock was $29.24. The graph assumes investments of $100 on December 31, 2013 in our common stock and in each of the three indices and the reinvestment of dividends.



The table below sets forth the value, as of December 31 for each of the years indicated, of a $100 investment made on December 31, 2013 in each of our common stock, the S&P 500 Index, the S&P Industrials Index and the S&P Consumer Durables & Apparel Index and includes the reinvestment of dividends.

	2014	2015	2016	2017	2018
Masco	$ 112.29	$ 145.52	$ 164.64	$ 231.40	$ 155.74
S&P 500 Index	$ 113.69	$ 115.26	$ 129.05	$ 157.22	$ 150.33
S&P Industrials Index	$ 109.83	$ 107.04	$ 127.23	$ 153.99	$ 133.53
S&P Consumer Durables & Apparel Index	$ 109.32	$ 108.49	$ 102.19	$ 121.18	$ 106.69

Item 6. Selected Financial Data.

	Dollars in Millions (Except Per Common Share Data)									
		2018		2017		2016		2015		2014
Net sales **(1) (2)**	$	8,359	$	7,642	$	7,361	$	7,142	$	7,006
Operating profit **(1) (2) (3)**		1,211		1,194		1,087		914		721
Income from continuing operations attributable to Masco Corporation **(1)(2) (4)**		734		533		493		357		821
Income per common share from continuing operations **(2)** :										
Basic	$	2.38	$	1.68	$	1.49	$	1.04	$	2.31
Diluted		2.37		1.66		1.48		1.03		2.28
Dividends declared		0.450		0.410		0.390		0.370		0.345
Dividends paid		0.435		0.405		0.385		0.365		0.330
At December 31:										
Total assets **(2) (5)**	$	5,393	$	5,534	$	5,164	$	5,664	$	7,208
Long-term debt **(5)**		2,971		2,969		2,995		2,403		2,919
Shareholders' equity (deficit) **(2) (6)**		69		183		(96)		58		1,128

(1) Amounts exclude discontinued operations in the year 2014 and 2015.

(2) Net sales, operating profit, income from continuing operations attributable to Masco Corporation, income per common share from continuing operations, total assets and shareholder's equity for 2014 and 2015 have not been recast for the impact of the adoption of Accounting Standards Codification 606. Refer to Note A to the consolidated financial statements for further information on the adoption of this standard.

(3) Operating profit for 2014 and 2015 has not been recast for the impact of the adoption of Accounting Standards Update ("ASU") 2017-07, "Compensation-Retirement Benefits (Topic 715): Improving the Presentation of Net Periodic Pension Cost and Net Periodic Postretirement Benefit Cost." Refer to Note A to the consolidated financial statements for further information on the adoption of this standard.

(4) The year 2014 includes a $529 million tax benefit from the release of the valuation allowance on deferred tax assets.

(5) Total assets and long-term debt for 2014 has not been recast for the impact of the adoption of ASU 2015-03 “Interest - Imputation of Interest (Subtopic 835-30) - Simplifying the Presentation of Debt Issuance Costs,” as amended by Accounting Standards Update 2015-15, which required the reclassification of certain debt issuance costs from an asset to a liability.

(6) The decrease in shareholder's equity from 2014 to 2015 relates primarily to the spin off of TopBuild Corp.

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

The financial and business analysis below provides information which we believe is relevant to an assessment and understanding of our consolidated financial position, results of operations and cash flows. This financial and business analysis should be read in conjunction with the consolidated financial statements and related notes.

The following discussion and certain other sections of this Report contain statements that reflect our views about our future performance and constitute "forward-looking statements" under the Private Securities Litigation Reform Act of 1995. Forward-looking statements can be identified by words such as "outlook," "believe," "anticipate," "appear," "may," "will," "should," "intend," "plan," "estimate," "expect," "assume," "seek," "forecast," and similar references to future periods. Our views about future performance involve risks and uncertainties that are difficult to predict and, accordingly, our actual results may differ materially from the results discussed in our forward-looking statements. We caution you against relying on any of these forward-looking statements.

In addition to the various factors included in the "Executive Level Overview," "Critical Accounting Policies and Estimates" and "Outlook for the Company" sections, our future performance may be affected by the levels of residential repair and remodel activity and new home construction, our ability to maintain our strong brands and reputation and to develop new products, our ability to maintain our competitive position in our industries, our reliance on key customers, the cost and availability of raw materials and increasing tariffs, our dependence on third-party suppliers, risks associated with international operations and global strategies, our ability to achieve the anticipated benefits of our strategic initiatives, our ability to successfully execute our acquisition strategy and integrate businesses that we have and may acquire, our ability to attract, develop and retain talented personnel, risks associated with our reliance on information systems and technology, and our ability to achieve the anticipated benefits from our investments in new technology. These and other factors are discussed in detail in Item 1A "Risk Factors" of this Report. Any forward-looking statement made by us speaks only as of the date on which it was made. Factors or events that could cause our actual results to differ may emerge from time to time, and it is not possible for us to predict all of them. Unless required by law, we undertake no obligation to update publicly any forward-looking statements as a result of new information, future events or otherwise.

Executive Level Overview

We design, manufacture and distribute branded home improvement and building products. These products are sold primarily for repair and remodeling activity and new home construction through home center retailers, mass merchandisers, hardware stores, homebuilders, distributors, online retailers, and direct to the consumer.

2018 Results

Net sales were positively impacted by the acquisition of The L.D. Kichler Co. ("Kichler") in March 2018 and Mercury Plastics, Inc. ("Mercury") in December 2017. Net sales were also positively impacted by increased sales volume resulting from increased repair and remodel activity and new home construction in the U.S., and net selling price increases primarily in the U.S. Such increases were partially offset by the divestiture of Moores Furniture Group Limited ("Moores") in the fourth quarter of 2017 and Arrow Fastener Co., LLC ("Arrow") in the second quarter of 2017. Our results of operations were negatively impacted by increased other expenses, such as logistics costs, salaries, and Enterprise Resource Planning System ("ERP") costs, and the recognition of the inventory step up adjustment established as part of the acquisition of Kichler. Such negative impacts were partially offset by benefits associated with cost savings initiatives and increased sales volume.

Our Plumbing Products segment was negatively impacted by an increase in commodity costs, unfavorable sales mix, and an increase in other expenses (such as salaries, logistics costs and ERP costs). These negative impacts were partially offset by increased sales volume, the benefits associated with cost savings initiatives and increased net selling prices. Our Decorative Architectural Products segment was negatively impacted by an increase in commodity costs, the recognition of the inventory step up adjustment established as part of the acquisition of Kichler, and increased depreciation and amortization expense. These negative impacts were partially offset by increased net selling prices of paints and other coating products, benefits associated with cost savings initiatives and increased sales volume. Our Cabinetry Products segment was negatively impacted by an increase in other expenses (such as logistics costs), program launch and display expenses, and unfavorable sales mix. These negative impacts were partially offset by benefits associated with cost savings initiatives, increased sales volume and the divestiture of Moores. Our Windows and Other Specialty Products segment was negatively impacted by an increase in other expenses (such as warranty-related costs and higher labor costs), an increase in commodity costs, decreased sales volume and the divestiture of Arrow. These negative impacts were partially offset by increased net selling prices and the benefits associated with cost savings initiatives.

Critical Accounting Policies and Estimates

Our discussion and analysis of our financial condition and results of operations is based upon our consolidated financial statements, which have been prepared in accordance with accounting principles generally accepted in the United States of America ("GAAP"). The preparation of these financial statements requires us to make certain estimates and assumptions that affect the reported amounts of assets and liabilities, disclosure of any contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting periods. We regularly review our estimates and assumptions, which are based upon historical experience, as well as current economic conditions and various other factors that we believe to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of certain assets and liabilities that are not readily apparent from other sources. Actual results may differ from these estimates and assumptions.

Note A to the consolidated financial statements includes our accounting policies, estimates and methods used in the preparation of our consolidated financial statements.

We believe that the following critical accounting policies are affected by significant judgments and estimates used in the preparation of our consolidated financial statements.

Revenue Recognition and Receivables

We recognize revenue as control of our products is transferred to our customers, which is generally at the time of shipment or upon delivery based on the contractual terms with our customers, or when services are completed. Control over certain of our custom-made window products transfers to our customers as production is completed, and revenue is recognized over the production period for these products, as our products do not have an alternative use and we have an enforceable right to payment during the production period. The production period of our custom-made window products generally does not lapse days, and for these products we currently recognize revenue based on the output of production, which is a faithful depiction of the transfer of these products to our customers. We provide customer programs and incentive offerings, including special pricing and co-operative advertising arrangements, promotions and other volume-based incentives. These customer programs and incentives are considered variable consideration. We include in revenue variable consideration only to the extent that it is probable that a significant reversal in the amount of cumulative revenue recognized will not occur when the variable consideration is resolved. This determination is made based upon known customer program and incentive offerings at the time of sale, and expected sales volume for ecasts as it relates to our volume-based incentives. This determination is updated each reporting period.

We monitor our customer receivable balances and the credit worthiness of our customers on an on-going basis and maintain allowances for doubtful accounts receivable for estimated losses resulting from the inability of customers to make required payments. During downturns in our markets, declines in the financial condition and creditworthiness of customers impact the credit risk of the receivables involved, and we have incurred additional bad debt expense related to customer defaults. Allowances are estimated based upon specific customer balances, where a risk of default has been identified, and also include a provision for non-customer specific defaults based upon historical collection, return and write-off activity.

Goodwill and Other Intangible Assets

We record the excess of purchase cost over the fair value of net tangible assets of acquired companies as goodwill or other identifiable intangible assets. In the fourth quarter of each year, or as events occur or circumstances change that would more likely than not reduce the fair value of a reporting unit below its carrying amount, we complete the impairment testing of goodwill utilizing a discounted cash flow method. We selected the discounted cash flow methodology because we believe that it is comparable to what would be used by market participants. We have defined our reporting units and completed the impairment testing of goodwill at the operating segment level.

Determining market values using a discounted cash flow method requires us to make significant estimates and assumptions, including long-term projections of cash flows, market conditions and appropriate discount rates. Our judgments are based upon historical experience, current market trends, consultations with external valuation specialists and other information. While we believe that the estimates and assumptions underlying the valuation methodology are reasonable, different estimates and assumptions could result in different outcomes. In estimating future cash flows, we rely on internally generated five-year forecasts for sales and operating profits, and, currently, a two to three percent long-term assumed annual growth rate of cash flows for periods after the five-year forecast. We generally develop these forecasts based upon, among other things, recent sales data for existing products, planned timing of new product launches, estimated repair and remodel activity and estimated housing starts. Our assumptions included a relatively stable U.S. Gross Domestic Product growing at approximately 2.5 percent per annum and a eurozone Gross Domestic Product growing at approximately 1.9 percent per annum over the five-year forecast.

We utilize our weighted average cost of capital of approximately 9.0 percent as the basis to determine the discount rate to apply to the estimated future cash flows. Our weighted average cost of capital increased in 2018 as compared to 2017 , primarily due to an increased market required rate of return on equity, as well as an increase in the after-tax cost of debt, which was driven by a reduction in the effective tax rate . In 2018 , based upon our assessment of the risks impacting each of our businesses, we applied a risk premium to increase the discount rate to a range of 11.0 percent to 13.5 percent for our reporting units.

If the carrying amount of a reporting unit exceeds its fair value, an impairment loss is recognized to the extent that a reporting unit's recorded carrying value exceeds its fair value, not to exceed the carrying amount of goodwill in that reporting unit.

In the fourth quarter of 2018 , we estimated that future discounted cash flows projected for all of our reporting units were greater than the carrying values. Accordingly, we did not recognize any impairment charges for goodwill. A 10 percent decrease in the estimated fair value of our reporting units would not have resulted in an impairment for any reporting unit.

We review our other indefinite-lived intangible assets for impairment annually, in the fourth quarter, or as events occur or circumstances change that indicate the assets may be impaired without regard to the business unit. Potential impairment is identified by comparing the fair value of an other indefinite-lived intangible asset to its carrying value. We utilized a relief-from-royalty model to estimate the fair value of other indefinite-lived intangible assets. We consider the implications of both external (e.g., market growth, competition and local economic conditions) and internal (e.g., product sales and expected product growth) factors and their potential impact on cash flows related to the intangible asset in both the near- and long-term. We also consider the profitability of the business, among other factors, to determine the royalty rate for use in the impairment assessment.

We utilize our weighted average cost of capital of approximately 9.0 percent as the basis to determine the discount rate to apply to the estimated future cash flows. In 2018 , based upon our assessment of the risks impacting each of our businesses, we applied a risk premium to increase the discount rate to a range of 12.0 percent to 13.5 percent for our other indefinite-lived intangible assets.

In the fourth quarter of 2018 , we estimated that future discounted cash flows projected for our other indefinite-lived intangible assets were greater than the carrying values. Accordingly, we did not recognize any impairment charges for other indefinite-lived intangible assets. A 10 percent decrease in the estimated fair value of our other indefinite-lived intangible assets would have resulted in a $4 million impairment for trade names related to businesses acquired within the past two years.

Employee Retirement Plans

As of January 1, 2010, substantially all our domestic and foreign qualified and domestic non-qualified defined-benefit pension plans were frozen to future benefit accruals.

Accounting for defined-benefit pension plans involves estimating the cost of benefits to be provided in the future, based upon vested years of service, and attributing those costs over the time period each employee works. We develop our pension costs and obligations from actuarial valuations. Inherent in these valuations are key assumptions regarding expected return on plan assets, mortality rates and discount rates for obligations and expenses. We consider current market conditions, including changes in interest rates, in selecting these assumptions. While we believe that the estimates and assumptions underlying the valuation methodology are reasonable, different estimates and assumptions could result in different reported pension costs and obligations within our consolidated financial statements.

In December 2018 , our discount rate for obligations increased to a weighted average of 3.8 percent from 3.3 percent. The discount rate for obligations is based upon the expected duration of each defined-benefit pension plan's liabilities matched to the December 31, 2018 Willis Towers Watson Rate Link Curve. The discount rates we use for our defined-benefit pension plans ranged from 1.5 percent to 4.2 percent, with the most significant portion of the liabilities having a discount rate for obligations of 4.1 percent or higher. The assumed asset return was primarily 7.0 percent, reflecting the expected long-term return on plan assets based upon an analysis of expected and historical rates of return of various asset classes utilizing the current and long-term target asset allocation of the plan assets.

Our net underfunded amount for our qualified defined-benefit pension plans, which is the difference between the projected benefit obligation and plan assets, decreased to $226 million at December 31, 2018 from $266 million at

December 31, 2017 . Our projected benefit obligation for our unfunded, non-qualified, defined-benefit pension plans decreased to $155 million at December 31, 2018 from $170 million at December 31, 2017 . These unfunded plans are not subject to the funding requirements of the Pension Protection Act of 2006. In accordance with the Pension Protection Act, the Adjusted Funding Target Attainment Percentage for the various defined-benefit pension plans ranges from 90 percent to 115 percent.

The decrease in our qualified defined-benefit pension plan projected benefit obligation was primarily impacted by an increase in the discount rate. During 2018 , we contributed $52 million to our qualified defined-benefit pension plans, and our qualified defined-benefit pension plan assets had a return of negative 4.9 percent. Refer to Note M to the consolidated financial statements for additional information.

We expect pension expense for our qualified defined-benefit pension plans to be $16 million in 2019 compared with $8 million in 2018 . If we assumed that the future return on plan assets was 50 basis points lower than the assumed asset return and the discount rate decreased by 50 basis points, the 2019 pension expense would increase by $4 million. We expect pension expense for our non-qualified defined-benefit pension plans to be $8 million in 2019 , compared to $9 million in 2018 .

We anticipate that we will be required to contribute approximately $15 million in 2019 to our qualified and non-qualified defined-benefit plans; however, we currently anticipate contributing approximately $66 million in 2019 . Refer to Note M to the consolidated financial statements for further information regarding the funding of our plans.

Income Taxes

Deferred taxes are recognized based on the future tax consequences of differences between the financial statement carrying value of assets and liabilities and their respective tax basis. The future realization of deferred tax assets depends on the existence of sufficient taxable income in future periods. Possible sources of taxable income include taxable income in carryback periods, the future reversal of existing taxable temporary differences recorded as a deferred tax liability, tax-planning strategies that generate future income or gains in excess of anticipated losses in the carryforward period and projected future taxable income.

If, based upon all available evidence, both positive and negative, it is more likely than not (more than 50 percent likely) such deferred tax assets will not be realized, a valuation allowance is recorded. Significant weight is given to positive and negative evidence that is objectively verifiable. A company's three-year cumulative loss position is significant negative evidence in considering whether deferred tax assets are realizable, and the accounting guidance restricts the amount of reliance we can place on projected taxable income to support the recovery of the deferred tax assets.

We maintain a valuation allowance on certain state and foreign deferred tax assets as of December 31, 2018 . Should we determine that we would not be able to realize our remaining deferred tax assets in these jurisdictions in the future, an adjustment to the valuation allowance would be recorded in the period such determination is made. The need to maintain a valuation allowance against deferred tax assets may cause greater volatility in our effective tax rate.

The current accounting guidance allows the recognition of only those income tax positions that have a greater than 50 percent likelihood of being sustained upon examination by the taxing authorities. We believe that there is an increased potential for volatility in our effective tax rate because this threshold allows for changes in the income tax environment and, to a greater extent, the inherent complexities of income tax law in a substantial number of jurisdictions, which may affect the computation of our liability for uncertain tax positions.

While we believe we have adequately provided for our uncertain tax positions, amounts asserted by taxing authorities could vary from our liability for uncertain tax positions. Accordingly, additional provisions for tax-related matters, including interest and penalties, could be recorded in income tax expense in the period revised estimates are made or the underlying matters are settled or otherwise resolved.

The comprehensive U.S. tax reform, which generally became effective in 2018 has had a significant impact on our effective tax rate and taxes paid primarily due to the reduction in the U.S. Federal corporate tax rate from 35 percent to 21 percent and the additional U.S. taxes on our foreign earnings. The continued impact from U.S. tax reform may differ from our current estimates due to the issuance and finalization of future regulatory guidance.

Warranty

We offer full and limited warranties on certain products, with warranty periods ranging up to the lifetime of the product to the original consumer purchaser. At the time of sale, we accrue a warranty liability for the estimated future cost to provide products, parts or services to repair or replace products to satisfy our warranty obligations. Our estimate of future costs to service our warranty obligations is based upon the information available and includes a number of factors, such as the warranty coverage, the warranty period, historical experience specific to the nature, frequency and average cost to service the claim, along with industry and demographic trends.

Certain factors and related assumptions in determining our warranty liability involve judgments and estimates and are sensitive to changes in the factors described above. We believe that the warranty accrual is appropriate; however, actual claims incurred could differ from our original estimates, which would require us to adjust our previously established accruals. Refer to Note T to the consolidated financial statements for additional information on our warranty accrual.

A significant portion of our business is at the consumer retail level through home center retailers and other major retailers. A consumer may return a product to a retail outlet that is a warranty return. However, certain retail outlets do not distinguish between warranty and other types of returns when they claim a return deduction from us. Our revenue recognition policy takes into account this type of return when recognizing revenue, and an estimate of these amounts is recorded as a deduction to net sales at the time of sale.

Litigation

We are involved in claims and litigation, including class actions and regulatory proceedings, which arise in the ordinary course of our business. Liabilities and costs associated with these matters require estimates and judgments based upon our professional knowledge and experience and that of our legal counsel. When a liability is probable of being incurred and our exposure in these matters is reasonably estimable, amounts are recorded as charges to earnings. The ultimate resolution of these exposures may differ due to subsequent developments.

Corporate Development Strategy

We expect to maintain a balanced growth strategy pursuing organic growth by maximizing the full potential of our existing core businesses and complementing our existing business with strategic acquisitions.

In addition, we actively manage our portfolio of companies by divesting of those businesses that do not align with our long-term growth strategy. We will continue to review all of our businesses to determine which businesses, if any, may not align with our long-term growth strategy.

Liquidity and Capital Resources

Historically, we have largely funded our growth through cash provided by our operations, the issuance of notes in the financial markets, bank borrowings and the issuance of our common stock, including issuances for certain mergers and acquisitions. Maintaining high levels of liquidity and focusing on cash generation are among our financial strategies. Our capital allocation strategy includes reinvesting in our business, balancing share repurchases with potential acquisitions and maintaining an appropriate dividend.

Our total debt as a percent of total capitalization was 98 percent and 94 percent at December 31, 2018 and 2017 , respectively. Refer to Note K to the consolidated financial statements for additional information.

On April 16, 2018, we repaid and retired all of our $114 million , 6.625% Notes on the scheduled repayment date.

On June 21, 2017, we issued $300 million of 3.5% Notes due November 15, 2027 and $300 million of 4.5% Notes due May 15, 2047. We received proceeds of $599 million, net of discount, for the issuance of these Notes. The Notes are senior indebtedness and are redeemable at our option at the applicable redemption price. On June 27, 2017, proceeds from the debt issuances, together with cash on hand, were used to repay and early retire $299 million of our 7.125% Notes due March 15, 2020, $74 million of our 5.95% Notes due March 15, 2022, $62 million of our 7.75% Notes due August 1, 2029, and $100 million of our 6.5% Notes due August 15, 2032. In connection with these early retirements, we incurred a loss on debt extinguishment of $107 million , which was recorded as interest expense.

On March 17, 2016 , we issued $400 million of 3.5% Notes due April 1, 2021 and $500 million of 4.375% Notes due April 1, 2026. We received proceeds of $896 million, net of discount, for the issuance of these Notes. The Notes are senior indebtedness and are redeemable at our option at the applicable redemption price. On April 15, 2016, proceeds from the debt issuances, together with cash on hand, were used to repay and early retire all of our $1 billion , 6.125% Notes which were due on October 3, 2016 and all of our $300 million , 5.85% Notes which were due on March 15, 2017. In connection with these early retirements, we incurred a loss on debt extinguishment of $40 million, which was recorded as interest expense.

On March 28, 2013, we entered into a credit agreement (the "Credit Agreement") with a bank group, with an aggregate commitment of $1.25 billion and a maturity date of March 28, 2018. On May 29, 2015 and August 28, 2015, we amended the Credit Agreement with the bank group (the "Amended Credit Agreement"). The Amended Credit Agreement reduces the aggregate commitment to $750 million and extends the maturity date to May 29, 2020. Under the Amended Credit Agreement, at our request and subject to certain conditions, we can increase the aggregate commitment up to an additional $375 million with the current bank group or new lenders. Refer to Note K to the consolidated financial statements for additional information.

The Amended Credit Agreement contains financial covenants requiring us to maintain (A) a maximum net leverage ratio, as adjusted for certain items, of 4.0 to 1.0, and (B) a minimum interest coverage ratio, as adjusted for certain items, equal to or greater than 2.5 to 1.0. We were in compliance with all covenants and had no borrowings under our Amended Credit Agreement at December 31, 2018 . We expect to remain in compliance with these covenants through at least the next year.

On March 9, 2018, we acquired substantially all of the net assets of Kichler. The purchase price, net of $2 million cash acquired, consisted of $549 million paid with cash on hand.

In the third quarter of 2018, we increased our quarterly dividend to $.12 per common share from $.105 per common share. During 2018, we repurchased 18.6 million shares of our common stock for cash aggregating $654 million .

We had cash, cash investments and short-term bank deposits of approximately $559 million at December 31, 2018 . Our cash and cash investments consist of overnight interest bearing money market demand accounts, time deposit accounts, and money market mutual funds containing government securities and treasury obligations. While we attempt to diversify these investments in a prudent manner to minimize risk, it is possible that future changes in the financial markets could affect the security or availability of these investments. Our short-term bank deposits consist of time deposits with maturities of 12 months or less.

Of the $559 million and $1.3 billion of cash, cash investments and short-term bank deposits we held at December 31, 2018 and 2017 , respectively, $270 million and $759 million, respectively, is held in our foreign subsidiaries. If these funds were needed for our operations in the U.S., their repatriation into the U.S. would not result in significant additional U.S. income tax or foreign withholding tax, as we have recorded such taxes on substantially all undistributed foreign earnings, except for those that are legally restricted.

We utilize derivative and hedging instruments to manage our exposure to currency fluctuations, primarily related to the European euro, British pound and the U.S. dollar; occasionally, we have also used derivative and hedging instruments to manage our exposure to commodity cost fluctuations, primarily zinc and copper, and interest rate fluctuations, primarily related to debt issuances. We review our hedging program, derivative positions and overall risk management on a regular basis. We currently do not have any derivative instruments for which we have designated hedge accounting.

Our current ratio was 1.6 to 1 and 2.0 to 1 at December 31, 2018 and 2017 , respectively. The decrease in our current ratio is due primarily to the cash on hand we paid for our acquisition of Kichler, partially offset by the acquired working capital.

Cash Flows

Significant sources and (uses) of cash in the past three years are summarized as follows, in millions:

	2018	2017	2016
Net cash from operating activities	$ 1,032	$ 751	$ 789
Retirement of notes	(114)	(535)	(1,300)
Purchase of Company common stock	(654)	(331)	(459)
Cash dividends paid	(134)	(129)	(128)
Dividends paid to noncontrolling interest	(89)	(35)	(31)
Capital expenditures	(219)	(173)	(180)
Debt extinguishment costs	—	(104)	(40)
Acquisition of businesses, net of cash acquired	(549)	(89)	—
Issuance of notes, net of issuance costs	—	593	889
Employee withholding taxes paid on stock-based compensation	(42)	(33)	(40)
Proceeds from disposition of:			
Businesses, net of cash disposed	—	128	—
Property and equipment	14	24	—
Financial investments	5	7	32
Decrease in debt, net	(1)	(3)	(1)
Proceeds of short-term bank deposits, net	108	112	40
Effect of exchange rate changes on cash and cash investments	4	55	(34)
Other, net	4	(34)	(15)
Cash (decrease) increase	$ (635)	$ 204	$ (478)

Our working capital days were as follows:

	At December 31,	
	2018	2017
Receivable days	53	51
Inventory days	64	59
Accounts Payable days	71	72
Working capital (receivables plus inventories, less accounts payable) as a percentage of net sales	14.0%	13.4%

Net cash provided by operations of $1,032 million consisted primarily of net income adjusted for certain non-cash items, including depreciation and amortization expense of $156 million , stock-based compensation expense and amortization expense related to in-store displays, changes in working capital amounts, as well as employee withholding taxes paid on stock-based compensation, which is classified as a financing activity. These amounts were partially offset by contributions to our defined-benefit pension plans.

Net cash used for financing activities was $1,020 million , primarily due to $654 million for the repurchase and retirement of Company common stock (as part of our strategic initiative to drive shareholder value), $134 million for the payment of cash dividends, $114 million for the retirement of our 6.625% of Notes due April 15, 2018, $89 million for dividends paid to noncontrolling interests and $42 million for employee withholding taxes paid on stock-based compensation.

In May 2017, our Board of Directors authorized the repurchase, for retirement, of up to $1.5 billion of shares of our common stock in open-market transactions or otherwise. During 2018, we repurchased and retired 18.6 million shares of our common stock, (including 0.7 million shares repurchased to offset the dilutive impact of long-term stock awards granted in 2018). At December 31, 2018, we had $636 million remaining under the authorization. Consistent with past practice and as part of our strategic initiative to drive shareholder value, we anticipate using approximately $600 million of cash for share repurchases (including shares which will be purchased to offset any dilution from long-term stock awards granted as part of our compensation programs) in 2019.

Net cash used for investing activities was $651 million , primarily driven by $549 million for the acquisition of Kichler, net of cash acquired, and $219 million for capital expenditures, partially offset by $108 million of net proceeds from the disposition of short-term bank deposits.

We continue to invest in our manufacturing and distribution operations to increase our productivity, improve customer service and support new product innovation. Capital expenditures for 2018 were $219 million , compared with $173 million for 2017 and $180 million for 2016 . For 2019 , capital expenditures, excluding any potential acquisitions, are expected to be approximately $200 million. Depreciation and amortization expense for 2018 totaled $156 million , compared with $127 million for 2017 and $134 million for 2016 . For 2019 , depreciation and amortization expense, excluding any potential 2019 acquisitions, is expected to be approximately $175 million. Amortization expense totaled $24 million in 2018 , compared with $11 million and $10 million in 2017 and 2016 , respectively.

Costs of environmental responsibilities and compliance with existing environmental laws and regulations have not had, nor do we expect them to have, a material effect on our capital expenditures, financial position or results of operations.

We believe that our present cash balance and cash flows from operations, and our ability to utilize our Amended Credit Agreement are sufficient to fund our near-term working capital and other investment needs. We believe that our longer-term working capital and other general corporate requirements will be satisfied through cash flows from operations and, to the extent necessary, from bank borrowings and future financial market activities.

Consolidated Results of Operations

We report our financial results in accordance with GAAP in the United States. However, we believe that certain non-GAAP performance measures and ratios, used in managing the business, may provide users of this financial information with additional meaningful comparisons between current results and results in prior periods. Non-GAAP performance measures and ratios should be viewed in addition to, and not as an alternative for, our reported results under GAAP.

The following discussion of consolidated results of operations compares each respective period to the same period of the immediately preceding year.

Sales and Operations

Net sales for 2018 were $8.4 billion , which increased nine percent compared to 2017 . Excluding acquisitions, divestitures and the effect of currency translation, net sales increased five percent. The following table reconciles reported net sales to net sales excluding acquisitions, divestitures and the effect of currency translation, in millions:

	Year Ended December 31	
	2018	2017
Net sales, as reported	$ 8,359	$ 7,642
Acquisitions	(377)	—
Divestitures	—	(72)
Net sales, excluding acquisitions and divestitures	7,982	7,570
Currency translation	(47)	—
Net sales, excluding acquisitions, divestitures and the effect of currency translation	$ 7,935	$ 7,570

Net sales for 2018 increased five percent due to the acquisition of Kichler in March 2018 and Mercury in December 2017. Net sales were also positively impacted by increased sales volume of plumbing products and cabinetry, which, in aggregate, increased sales by three percent, and net selling price increases of paints and other coating products, plumbing products and windows, which, in aggregate, increased sales by two percent. Foreign currency translation also increased sales by one percent. Net sales for 2018 were negatively affected by the divestiture of our Arrow and Moores businesses, which, in aggregate, decreased sales by one percent.

Net sales for 2017 were positively affected by increased sales volume of plumbing products, paints and other coating products and builders' hardware, which, in aggregate, increased sales by four percent. Net sales for 2017 were also positively affected by favorable sales mix of cabinets, North American plumbing products and North American windows, as well as net selling price increases of windows and international plumbing products, which, in aggregate, increased sales two percent. Net sales for 2017 were negatively affected by lower sales volume of cabinets, the divestiture of our Arrow and Moores businesses, and an unfavorable sales mix of international plumbing products, which, in aggregate, decreased sales by two percent.

Net sales for 2016 were positively affected by increased sales volume of plumbing products, paints and other coating products and builders' hardware. Net sales for 2016 were also positively affected by favorable sales mix of cabinets and windows, and net selling price increases of North American windows and North American and international plumbing products. Net sales for 2016 were negatively affected by lower sales volume of cabinets and lower net selling prices of paints and other coating products.

Our gross profit margins were 32.2 percent, 34.2 percent and 33.4 percent in 2018 , 2017 and 2016 , respectively. The 2018 gross profit margin was negatively impacted by an increase in commodity costs, the recognition of the inventory step up adjustment established as a part of the the acquisition of Kichler, an increase in other expenses (such as logistics costs and salaries) and unfavorable sales mix. These negative impacts were partially offset by an increase in net selling prices, the benefits associated with cost savings initiatives, and increased sales volume. The 2017 gross profit margin was positively impacted by increased sales volume, a more favorable relationship between net selling prices and commodity costs, and cost savings initiatives.

Selling, general and administrative expenses as a percent of sales were 17.7 percent in 2018 compared with 18.6 percent in 2017 and 18.7 percent in 2016 . The decrease in selling, general and administrative expenses, as a percentage of sales, was driven by leverage of fixed expenses, due primarily to increased sales volume, and improved cost control.

The following table reconciles reported operating profit to operating profit, as adjusted to exclude certain items, dollars in millions:

	2018	2017	2016
Operating profit, as reported	$ 1,211	$ 1,194	$ 1,087
Rationalization charges	14	4	22
Kichler inventory step up adjustment	40	—	—
Operating profit, as adjusted	$ 1,265	$ 1,198	$ 1,109
Operating profit margins, as reported	14.5%	15.6%	14.8%
Operating profit margins, as adjusted	15.1%	15.7%	15.1%

Operating profit margin in 2018 was negatively affected by an increase in commodity costs, the recognition of the inventory step up adjustment established as a part of the the acquisition of Kichler and an increase in other expenses (such as logistics costs, salaries and ERP costs). These negative impacts were partially offset by increased net selling prices, benefits associated with cost savings initiatives and increased sales volume. Operating profit margin in 2017 was positively impacted by increased sales volume, cost savings initiatives, and a more favorable relationship between net selling prices and commodity costs. Operating profit margin in 2017 was negatively impacted by an increase in strategic growth investments and certain other expenses, including stock-based compensation, health insurance costs, trade show costs and increased head count.

Due to the recently-announced increase in tariffs on imported materials from China, and assuming tariffs rise to 25 percent in 2019, we could be exposed to approximately $150 million of potential annual direct cost increases. We will work to mitigate the impact of these tariffs through a combination of price increases, supplier negotiations, supply chain repositioning and other internal productivity measures.

Other Income (Expense), Net

Other, net, for 2018 included $14 million of net periodic pension and post-retirement benefit cost and $8 million of realized foreign currency losses. These expenses were partially offset by $3 million of earnings related to equity method investments and $1 million related to distributions from private equity funds.

Other, net, for 2017 included $26 million related to periodic pension and post-retirement benefit costs, $13 million net loss related to the divestitures of Moores and Arrow and $2 million related to the impairment of a private equity fund, partially offset by $3 million related to distributions from private equity funds and $1 million of earnings related to equity method investments.

Other, net, for 2016 included $32 million related to periodic pension and post-retirement benefit costs and $3 million of realized foreign currency losses, partially offset by $5 million related to distributions from private equity funds, $3 million from the redemption of auction rate securities and $2 million of earnings from equity method investments.

Interest expense was $156 million , $278 million and $229 million in 2018 , 2017 and 2016 , respectively. The decrease in interest expense from 2017 to 2018 is primarily the result of a loss on debt extinguishment of $107 million which was recorded as additional interest expense in connection with the early retirement of debt in 2017, the discharge of indebtedness in 2018 and refinancing certain debt at more favorable interest rates in 2017. The increase in interest expense from 2016 to 2017 is primarily the result of the $107 million and $40 million losses on debt extinguishment which were recorded as additional interest expense in connection with the early retirement of debt in 2017 and 2016, respectively. The increase was partially offset by the discharge of indebtedness in 2016 as well as refinancing certain debt at more favorable interest rates.

Net Income and Income Per Common Share (Attributable to Masco Corporation)

Net income and diluted income per common share for 2018 were $734 million and $2.37 per common share, respectively. Net income and diluted income per common share for 2017 were $533 million and $1.66 per common share, respectively. Net income and diluted income per common share for 2016 were $493 million and $1.48 per common share, respectively.

Our effective tax rate was 25 percent, 34 percent and 36 percent in 2018 , 2017 and 2016 , respectively. U.S. tax reform, which generally became effective in 2018, reduced the U.S. Federal tax rate from 35 percent to 21 percent. Additionally, effective January 1, 2017 we adopted ASU 2016-09, which requires the tax effects related to employee stock-based payments to be recorded to income tax expense, thus increasing the volatility in our effective tax rate. Our normalized tax rate was 25 percent, 34 percent and 36 percent in 2018 , 2017 and 2016 , respectively.

In the fourth quarter of 2018, our normalized rate was changed from 26 percent to 25 percent primarily due to a reduction in our U.S. tax on foreign earnings attributable to Global Intangible Low-taxed Income as a result of recently issued IRS regulatory guidance. Our 2018 effective tax rate equaled our normalized rate.

The 2017 effective tax rate was impacted by divestiture of businesses with no tax impact. This impact was offset by a $17 million net tax benefit from the impact of changes in U.S. Federal tax law and a $20 million tax benefit from stock-based compensation payments recognized in 2017.

The 2016 effective tax rate includes a $14 million charge to tax expense from the elimination of a disproportionate tax effect resulting from our auction rate securities being called by our counterparty during 2016. This charge was offset by a $13 million tax benefit from the recognition of a deferred tax asset on certain German net operating losses primarily resulting from a return to sustainable profitability.

Refer to Note R to the consolidated financial statements for additional information.

Outlook for the Company

We continue to successfully execute our long-term growth and capital allocation strategies by leveraging our strong brand portfolio, industry-leading positions and Masco Operating System, our methodology to drive growth and productivity. Although we have experienced commodity and logistics cost pressures, the fundamentals of the repair and remodel industry remain strong. We believe that our strong financial position and cash flow generation, together with our current strategy of investing in our industry-leading branded building products, our continued focus on innovation and our commitment to operational excellence, the active management of our portfolio and disciplined capital allocation, will allow us to drive long-term growth and create shareholder value.

Business Segment and Geographic Area Results

The following table sets forth our net sales and operating profit (loss) information by business segment and geographic area, dollars in millions.

				Percent Change	
	2018	2017	2016	2018 vs. 2017	2017 vs. 2016
Net Sales:					
Plumbing Products	$ 3,998	$ 3,732	$ 3,529	7 %	6 %
Decorative Architectural Products	2,656	2,206	2,092	20 %	5 %
Cabinetry Products	950	934	970	2 %	(4)%
Windows and Other Specialty Products	755	770	770	(2)%	— %
Total	$ 8,359	$ 7,642	$ 7,361	9 %	4 %
North America	$ 6,763	$ 6,067	$ 5,838	11 %	4 %
International, principally Europe	1,596	1,575	1,523	1 %	3 %
Total	$ 8,359	$ 7,642	$ 7,361	9 %	4 %

	2018	2017	2016
Operating Profit (Loss): (A)			
Plumbing Products	$ 715	$ 702	$ 654
Decorative Architectural Products	456	438	433
Cabinetry Products	86	92	97
Windows and Other Specialty Products	34	54	(3)
Total	$ 1,291	$ 1,286	$ 1,181
North America	$ 1,094	$ 1,080	$ 973
International, principally Europe	197	206	208
Total	1,291	1,286	1,181
General corporate expense, net	(80)	(92)	(94)
Total operating profit	$ 1,211	$ 1,194	$ 1,087

	2018	2017	2016
Operating Profit (Loss) Margin: (A)			
Plumbing Products	17.9%	18.8%	18.5 %
Decorative Architectural Products	17.2%	19.9%	20.7 %
Cabinetry Products	9.1%	9.9%	10.0 %
Windows and Other Specialty Products	4.5%	7.0%	(0.4)%
North America	16.2%	17.8%	16.7 %
International, principally Europe	12.3%	13.1%	13.7 %
Total	15.4%	16.8%	16.0 %
Total operating profit margin, as reported	14.5%	15.6%	14.8 %

(A) Before general corporate expense, net; refer to Note P to the consolidated financial statements for additional information.

Business Segment Results Discussion

Changes in operating profit margins in the following Business Segment and Geographic Area Results discussion exclude general corporate expense, net, and compares each respective period to the same period of the immediately preceding year.

Plumbing Products

Sales

Net sales of Plumbing Products increased seven percent in 2018 due primarily to higher sales volume of North American and International operations, which, in aggregate, increased sales by five percent, and net selling price increases of International and North American operations, which in aggregate, increased sales by one percent. The acquisition of Mercury and foreign currency translation each increased sales by one percent. Such increases were partially offset by unfavorable sales mix of North American and International operations which, in aggregate, decreased sales by one percent.

Net sales in this segment increased six percent in 2017, primarily due to higher sales volume of both North American and International operations, net selling price increases of International operations and a favorable sales mix of North American operations, which, in aggregate, increased sales by seven percent. These increases were partially offset by an unfavorable sales mix of International operations, which decreased sales by one percent.

Net sales in this segment increased in 2016, primarily due to higher sales volume of both North American and International operations, partially offset by foreign currency translation.

Operating Results

Operating margins in the Plumbing Products segment in 2018 were negatively impacted by an increase in commodity costs, unfavorable sales mix, an increase in other expenses (such as salaries, logistics, and ERP system costs), and higher depreciation expense. These negative impacts were partially offset by increased sales volume, the benefit associated with cost savings initiatives and increased net selling prices.

Operating margins in this segment in 2017 were positively impacted by increased sales volume, cost savings initiatives, and a favorable relationship between net selling prices and commodity costs, partially offset by an increase in strategic growth initiatives and certain other expenses (including trade show costs and higher headcount).

Operating margins in this segment in 2016 were positively impacted by increased sales volume, a favorable relationship between net selling prices and commodity costs (including the positive impact of metal hedge contracts), and the benefits associated with business rationalization and other cost savings initiatives. Such increases were partially offset by an increase in strategic growth investments, higher insurance costs, and unfavorable sales mix.

Decorative Architectural Products

Sales

Net sales of Decorative Architectural Products increased 20 percent in 2018 due primarily to the acquisition of Kichler in March 2018, which increased sales by 16 percent. Net sales also increased due to net selling price increases of paints and other coating products and increased sales volume of builders' hardware and paints and other coating products.

Net sales in this segment increased five percent in 2017 primarily due to higher sales volume of paints and other coating products and builders' hardware, resulting from growth in our BEHR PRO ® business and the expansion of our shower door and cabinet hardware programs, as well as net selling price increases of paints and other coating products.

Net sales in this segment increased in 2016 primarily due to higher sales volume of paints and other coating products related to our BEHR PRO business and core-DIY products, as well as builder's hardware. Such increases were partially offset by lower net selling prices of paints and other coating products.

Operating Results

Operating margins in the Decorative Architectural Products segment in 2018 were negatively impacted by an increase in commodity costs of paints and other coating products and builders' hardware, the recognition of the inventory step up adjustment established as part of the acquisition of Kichler, increased depreciation and amortization expense and an increase in strategic growth investments. These negative impacts were partially offset by increased net selling prices of paints and other coating products, benefits associated with cost savings initiatives, increased sales volume of builders' hardware and paints and other coating products, and a gain on the sale of a building.

Operating margins in this segment in 2017 were negatively affected by an unfavorable relationship between net selling prices and commodity costs of paints and other coating products, and an increase in strategic growth investments to support the expansion of pro paint sales and new programs in builders' hardware. Such cost increases were partially offset by increased sales volume and cost savings initiatives.

Operating margins in this segment in 2016 reflect increased sales volume of paints and other coating products and builders' hardware, partially offset by an unfavorable relationship between net selling prices and commodity costs of paints and other coating products.

Cabinetry Products

Sales

Net sales in the Cabinetry Products segment increased two percent in 2018 due primarily to higher sales volume to home centers and dealers, which increased sales four percent. Net selling price increases and favorable sales mix, in aggregate, increased sales by two percent. These increases were partially offset by the divestiture of Moores, which decreased sales by five percent.

Net sales in this segment decreased four percent in 2017 primarily due to lower sales volume of North American cabinets, mainly due to decreased sales to our builder customers in the U.S., which decreased sales by five percent. Additionally, our international cabinet business experienced lower sales volume due to the continued exit of certain accounts in the U.K., which, combined with our divestiture of the same business in the fourth quarter, decreased sales by two percent. Such decreases were partially offset by a positive sales mix of North American cabinets, which increased sales by three percent.

Net sales in this segment decreased in 2016 primarily due to lower sales volume of cabinets resulting from our deliberate exit of certain lower margin business in the direct-to-builder channel in the U.S. and other accounts in the U.K., and a stronger U.S. dollar. Such decreases were partially offset by a favorable sales mix of North American and international cabinets and net selling price increases of North American cabinets.

Operating Results

Operating margins in the Cabinetry Products segment in 2018 were negatively impacted by an increase in other expenses (such as logistics costs), program launch and display expenses, commodity costs and unfavorable sales mix. These negative impacts were partially offset by increased net selling prices, benefits associated with cost savings initiatives, increased sales volume and the divestiture of Moores.

Operating margins in this segment were slightly lower in 2017 due to decreased sales volume, costs to support new product launches in North America, anti-dumping and countervailing duties, and an unfavorable relationship between net selling prices and commodity costs of North American cabinets which were mostly offset by cost savings initiatives as well as positive sales mix of North American cabinets.

Operating margins in this segment in 2016 were positively affected by operational efficiencies due to the benefits associated with business rationalization activities and other cost savings initiatives, a favorable sales mix, and a more favorable relationship between net selling prices and commodity costs, primarily at our North American cabinets business. This increase was partially offset by decreased sales volume in North American and international cabinets.

Windows and Other Specialty Products

Sales

Net sales of Windows and Other Specialty Products decreased two percent in 2018. The divestiture of Arrow in the second quarter of 2017 decreased sales by four percent. Lower sales volume of international windows further decreased sales by four percent. Such decreases were partially offset by net selling price increases of North American and international windows, which, in aggregate, increased sales by three percent, favorable sales mix of North American windows, which increased sales by two percent, and foreign currency translation, which increased sales one percent.

Net sales of Windows and Other Specialty Products were flat in 2017. Excluding the divestiture of Arrow, sales increased five percent. Net selling price increases of North American and international windows, increased sales volume of North American windows, and a favorable sales mix of North American windows, in aggregate, increased sales by seven percent. These increases were partially offset by decreased sales volume of international windows, which decreased sales by one percent. Foreign currency translation also decreased sales by one percent, due to a weaker U.S. dollar.

Net sales in this segment increased in 2016 primarily due to improved net selling prices of North American windows, a favorable sales mix of North American and international windows, and the impact from acquiring a U.K. window business. These increases were partially offset by foreign currency translation due to a stronger U.S. dollar.

Operating Results

Operating margins in the Windows and Other Specialty Products segment in 2018 were negatively impacted by an increase in other expenses (such as warranty-related costs and higher labor costs), increased commodity costs, decreased sales volume of international windows, and the divestiture of Arrow. These negative impacts were partially offset by increased net selling prices and benefits associated with costs savings initiatives.

Operating margins in this segment in 2017 were positively affected by a decrease in warranty adjustments, cost savings initiatives and a favorable relationship between net selling prices and commodity costs of North American windows.

Operating margins in this segment decreased in 2016 due to a $31 million increase in our estimate of expected future warranty claims relating to previously sold windows and doors. The change in estimate resulted from the adoption of an improved warranty valuation model and the availability of additional information used to support the estimate of costs to service claims and recent warranty claim trends, including a shift to increased costs to repair. Operating margins also decreased due to increases in certain other expenses, such as higher labor costs and ERP system implementation costs at our North American windows business. Such costs were partially offset by a more favorable relationship between net selling prices and commodity costs of North American windows.

Business Rationalizations and Other Initiatives

Over the last several years, we have taken several actions focused on the strategic rationalization of our businesses including business consolidations, plant closures, head count reductions and other cost savings initiatives. In 2018 , 2017 and 2016 , we incurred net pre-tax costs and charges related to these initiatives of $14 million , $4 million , and $22 million , respectively.

We continue to realize the benefits of our business rationalizations and continuous improvement initiatives across our enterprise and expect to identify additional opportunities to improve our business operations, although we do not anticipate that the related costs will be as significant as they have been historically.

During 2018 , our Plumbing Products segment incurred costs and charges of $9 million primarily related to plant closure costs in North America. Our Windows and Other Specialty Products segment incurred costs of $5 million primarily related to plant closure costs and severance in the United Kingdom.

During 2017 , our Plumbing Products segment incurred costs and charges of $2 million primarily related to plant closure costs and severance in North America. Our Cabinetry Products segment incurred costs of $2 million primarily related to plant closure costs in North America.

During 2016 , our Plumbing Products segment incurred costs of $13 million primarily related to plant closure costs in Canada and at our International operations, as well as severance costs across multiple businesses. Our Cabinetry Products segment incurred costs and charges of $8 million primarily related to cost savings initiatives in North America. Lastly, our Windows and Other Specialty Products segment incurred costs of $1 million related to severance at our U.S. windows business.

Geographic Area Results Discussion

North America

Sales

North American net sales in 2018 increased 11 percent. Net sales were positively impacted by the acquisitions of Kichler and Mercury which, in aggregate, increased sales by six percent. Net sales were also positively impacted by increased sales volume of plumbing products and cabinets, which, in aggregate, increased sales by three percent, and increased net selling prices of paints and other coating products, which increased sales by one percent.

North American net sales in 2017 increased four percent. Net sales were positively impacted by increased sales volume of plumbing products, paints and other coating products, builders' hardware and windows, which more than offset decreased sales volume of cabinets. In aggregate, sales volume increased sales by three percent. Favorable sales mix of cabinets, plumbing products and windows, and net selling price increases of windows and paints and other coating products, in aggregate, increased sales by two percent. The divestiture of Arrow decreased sales by one percent.

North American net sales in 2016 were positively impacted by increased sales volume of paints and other coating products, plumbing products and builders' hardware, which more than offset decreased sales volume of cabinets. A favorable sales mix of cabinets and windows and increased net selling prices of windows, plumbing products and cabinets also increased sales. Such increases were partially offset by lower net selling prices of paints and other coating products.

Operating Results

Operating margins from North American operations in 2018 were negatively affected by an increase in commodity costs, the recognition of the inventory step up adjustment established as part of the acquisition of Kichler and an increase in other expenses (such as logistics costs, salaries and ERP costs). These negative impacts were partially offset by increased net selling prices, the benefits associated with cost savings initiatives and higher sales volume.

Operating margins from North American operations in 2017 were positively impacted by cost savings initiatives, increased sales volume, and favorable sales mix, partially offset by increases in strategic growth initiatives **,** an unfavorable relationship between net selling prices and commodity costs, and certain other expenses, including increased headcount.

Operating margins from North American operations in 2016 were positively affected by the benefits associated with business rationalization and other cost savings initiatives. North American operations were also positively affected by increased sales volume, a more favorable relationship between net selling prices and commodity costs, as well as a favorable sales mix. Such increases were partially offset by an increase in warranty costs and certain other expenses, such as higher labor costs, ERP system implementation costs, strategic growth investments and insurance costs.

International, Principally Europe

Sales

Net sales from International operations in 2018 increased one percent. In local currencies (including sales in foreign currencies outside their respective functional currencies), net sales decreased two percent. The divestiture of Moores in the fourth quarter of 2017 decreased sales by three percent, lower sales volume of windows decreased sales by two percent, and unfavorable sales mix of plumbing products decreased sales by one percent. These decreases were partially offset by increased net selling prices and higher sales volume of plumbing products, which increased sales, in aggregate, by three percent.

Net sales from International operations in 2017 increased three percent. In local currencies, net sales increased four percent. Net sales were positively impacted by increased sales volume of plumbing products and net selling price increases of plumbing products and windows, which, in aggregate, increased sales by seven percent. Such increases were partially offset by an unfavorable sales mix of plumbing products and lower sales volume of cabinets and windows, which, in aggregate, decreased sales by three percent. The divestiture of Moores also decreased sales by one percent.

Net sales from International operations increased in 2016 due primarily to increased sales volume of plumbing products. Net sales were also positively impacted by a favorable sales mix of cabinets and windows, and increased net selling prices for plumbing products. These increases were partially offset by lower sales volume for cabinets and unfavorable foreign currency translation due to the stronger U.S. dollar.

Operating Results

Operating margins from International operations in 2018 were negatively impacted by an increase in other expenses (such as salaries from increased headcount), an increase in commodity costs and unfavorable sales mix, partially offset by increased net selling prices, benefits associated with cost savings initiatives and the divestiture of Moores.

Operating margins from International operations in 2017 were negatively impacted by unfavorable sales mix, increases in certain other expenses (including trade show costs and increased headcount) and investments in strategic growth initiatives, partially offset by a favorable relationship between net selling prices and commodity costs and increased sales volume .

Operating margins from International operations in 2016 were positively affected by increased sales volume and a more favorable relationship between net selling prices and commodity costs of plumbing products. These increases were partially offset by strategic growth investments.

Other Matters

Commitments and Contingencies

Litigation

Information regarding our legal proceedings is set forth in Note T to the consolidated financial statements, which is incorporated herein by reference.

Other Commitments

We enter into contracts, which include reasonable and customary indemnifications that are standard for the industries in which we operate. Such indemnifications include claims made against builders by homeowners for issues relating to our products and workmanship. In conjunction with divestitures and other transactions, we occasionally provide reasonable and customary indemnifications. We have never had to pay a material amount related to these indemnifications, and we evaluate the probability that amounts may be incurred and record an estimated liability when probable and reasonably estimable.

Recently Adopted and Issued Accounting Pronouncements

Refer to Note A to the consolidated financial statements for discussion of recently adopted and issued accounting pronouncements, which is incorporated herein by reference.

Contractual Obligations

The following table provides payment obligations related to current contracts at December 31, 2018 , in millions:

	Payments Due by Period					
	2019	2020-2021	2022-2023	Beyond 2023	Other	Total
Debt **(A)**	$ 8	$ 605	$ 332	$ 2,054	$ —	$ 2,999
Interest **(A)**	148	267	209	676	—	1,300
Operating leases	55	87	50	99	—	291
Currently payable income taxes	11	—	—	—	—	11
Private equity funds **(B)**	—	—	—	—	4	4
Purchase commitments **(C)**	258	—	—	—	—	258
Uncertain tax positions, including interest and penalties **(D)**	—	—	—	—	67	67
Total	$ 480	$ 959	$ 591	$ 2,829	$ 71	$ 4,930

(A) We assume that all debt would be held to maturity. Amounts include capital lease obligations.

(B) There is no schedule for the capital commitments to the private equity funds; accordingly, we are unable to make a reasonable estimate as to when capital commitments may be paid.

(C) Excludes contracts that do not require volume commitments and open or pending purchase orders.

(D) Due to the high degree of uncertainty regarding the timing of future cash outflows associated with uncertain tax positions, we are unable to make a reasonable estimate for the year in which cash settlements may occur with applicable tax authorities.

Refer to Note M to the consolidated financial statements for defined-benefit pension plan obligations.

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

We have considered the provisions of accounting guidance regarding disclosure of accounting policies for derivative financial instruments and disclosure of quantitative and qualitative information about market risk inherent in derivative financial instruments and other financial instruments.

We are exposed to the impact of changes in interest rates and foreign currency exchange rates, particularly changes between the U.S. dollar and the European euro, British pound, and Canadian dollar, and to market price fluctuations related to our financial investments. We have involvement with derivative financial instruments and use such instruments to the extent necessary to manage exposure to foreign currency fluctuations. Refer to Note F to the consolidated financial statements for additional information regarding our derivative instruments.

At December 31, 2018 , we performed sensitivity analyses to assess the potential loss in the fair values of market risk sensitive instruments resulting from a hypothetical change of 10 percent in foreign currency exchange rates, a 10 percent decline in the market value of our long-term investments, or a 100 basis point change in interest rates. Based upon the analyses performed, such changes would not be expected to materially affect our consolidated financial position, results of operations or cash flows.

Item 8. Financial Statements and Supplementary Data.

Management's Report on Internal Control Over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting. Our 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 accounting principles generally accepted in the United States of America.

On March 9, 2018, we completed the acquisition of The L.D. Kichler Co. ("Kichler"). In connection with the integration of Kichler, we are in the process of analyzing and evaluating Kichler's internal control over financial reporting. This process may result in additions or changes to our internal control over financial reporting. In accordance with the Securities and Exchange Commission guidance, we have excluded the Kichler operations from the scope of our annual assessment of the effectiveness of internal control over financial reporting for the year ended December 31, 2018. Such guidance allows for the omission of an assessment of an acquired business' internal control over financial reporting from the assessment of internal control over financial reporting for a period not to exceed one year. Kichler is a wholly-owned subsidiary whose total assets and net sales excluded from our assessment represent approximately 5% and 4%, respectively, as of and for the year ended December 31, 2018 .

We assessed the effectiveness of our internal control over financial reporting as of December 31, 2018 using the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission ("COSO") in "Internal Control – Integrated Framework." Based on this assessment, we have determined that our internal control over financial reporting was effective as of December 31, 2018 .

PricewaterhouseCoopers LLP, an independent registered public accounting firm, performed an audit of our consolidated financial statements and of the effectiveness of our internal control over financial reporting as of December 31, 2018 . Their report expressed an unqualified opinion on the effectiveness of our internal control over financial reporting as of December 31, 2018 and expressed an unqualified opinion on our 2018 consolidated financial statements. This report appears under 'Item 8. Financial Statements and Supplementary Data' under the heading "Report of Independent Registered Public Accounting Firm."

Report of Independent Registered Public Accounting Firm

To the Board of Directors and Shareholders
of Masco Corporation:

Opinions on the Financial Statements and Internal Control over Financial Reporting

We have audited the accompanying consolidated balance sheets of Masco Corporation and its subsidiaries (the “Company”) as of December 31, 2018 and 2017, and the related consolidated statements of operations, comprehensive income (loss), shareholders’ equity and cash flows for each of the three years in the period ended December 31, 2018, including the related notes and financial statement schedule listed in the index appearing under Item 15(a)(2) (collectively referred to as the “consolidated financial statements”). We also have audited the Company's internal control over financial reporting as of December 31, 2018, based on criteria established in Internal Control - Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO).

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of the Company as of December 31, 2018 and 2017, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2018 in conformity with accounting principles generally accepted in the United States of America. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2018, based on criteria established in Internal Control - Integrated Framework (2013) issued by the COSO.

Basis for Opinions

The Company's management is responsible for these consolidated financial statements, for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting, included in Management's Report on Internal Control over Financial Reporting appearing under Item 8. Our responsibility is to express opinions on the Company’s consolidated financial statements and on the Company's internal control over financial reporting based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

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

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

As described in Management’s Report on Internal Control over Financial Reporting appearing under Item 8, management has excluded The L.D. Kichler Co. (Kichler) from its assessment of internal control over financial reporting as of December 31, 2018 because it was acquired by the Company in a purchase business combination during 2018. We have also excluded Kichler from our audit of internal control over financial reporting. Kichler is a wholly-owned subsidiary whose total assets and net sales excluded from management’s assessment and our audit of internal control over financial reporting represent approximately 5% and 4%, respectively, of the related consolidated financial statement amounts as of and for the year ended December 31, 2018.

Definition and Limitations of Internal Control over Financial Reporting

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

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

/s/ PricewaterhouseCoopers LLP

PricewaterhouseCoopers LLP
Detroit, Michigan
February 7, 2019

We have served as the Company’s auditor since 1959.

MASCO CORPORATION and Consolidated Subsidiaries
CONSOLIDATED BALANCE SHEETS

December 31, 2018 and 2017
(In Millions, Except Share Data)

	2018	2017
ASSETS		
Current Assets:		
Cash and cash investments	$ 559	$ 1,194
Short-term bank deposits	—	108
Receivables	1,153	1,066
Inventories	946	784
Prepaid expenses and other	108	111
Total current assets	2,766	3,263
Property and equipment, net	1,223	1,129
Goodwill	898	841
Other intangible assets, net	406	187
Other assets	100	114
Total assets	$ 5,393	$ 5,534
LIABILITIES		
Current Liabilities:		
Accounts payable	$ 926	$ 824
Notes payable	8	116
Accrued liabilities	750	727
Total current liabilities	1,684	1,667
Long-term debt	2,971	2,969
Other liabilities	669	715
Total liabilities	5,324	5,351
Commitments and contingencies (Note T)		
EQUITY		
Masco Corporation's shareholders' equity:		
Common shares, par value $1 per share Authorized shares: 1,400,000,000; Issued and outstanding: 2018 – 293,900,000; 2017 – 310,400,000	294	310
Preferred shares authorized: 1,000,000; Issued and outstanding: 2018 and 2017 – None	—	—
Paid-in capital	—	—
Retained deficit	(278)	(298)
Accumulated other comprehensive loss	(127)	(65)
Total Masco Corporation's shareholders' deficit	(111)	(53)
Noncontrolling interest	180	236
Total equity	69	183
Total liabilities and equity	$ 5,393	$ 5,534

See notes to consolidated financial statements.

MASCO CORPORATION and Consolidated Subsidiaries
CONSOLIDATED STATEMENTS OF OPERATIONS

For the Years Ended December 31, 2018 , 2017 and 2016
(In Millions, Except Per Common Share Data)

	2018	2017	2016
Net sales	$ 8,359	$ 7,642	$ 7,361
Cost of sales	5,670	5,030	4,899
Gross profit	2,689	2,612	2,462
Selling, general and administrative expenses	1,478	1,418	1,375
Operating profit	1,211	1,194	1,087
Other income (expense), net:			
Interest expense	(156)	(278)	(229)
Other, net	(13)	(32)	(26)
	(169)	(310)	(255)
Income before income taxes	1,042	884	832
Income tax expense	258	304	296
Net income	784	580	536
Less: Net income attributable to noncontrolling interest	50	47	43
Net income attributable to Masco Corporation	$ 734	$ 533	$ 493
Income per common share attributable to Masco Corporation:			
Basic:			
Net income	$ 2.38	$ 1.68	$ 1.49
Diluted:			
Net income	$ 2.37	$ 1.66	$ 1.48

See notes to consolidated financial statements.

MASCO CORPORATION and Consolidated Subsidiaries
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME (LOSS)

For the Years Ended December 31, 2018 , 2017 and 2016
(In Millions)

	2018	2017	2016
Net income	$ 784	$ 580	$ 536
Less: Net income attributable to noncontrolling interest	50	47	43
Net income attributable to Masco Corporation	$ 734	$ 533	$ 493
Other comprehensive (loss) income, net of tax (Note O):			
Cumulative translation adjustment	$ (31)	$ 133	$ (78)
Interest rate swaps	2	3	1
Pension and other post-retirement benefits	9	63	(15)
Realized loss on available-for-sale securities	—	—	12
Other comprehensive (loss) income, net of tax	(20)	199	(80)
Less: Other comprehensive (loss) income attributable to the noncontrolling interest:			
Cumulative translation adjustment	$ (15)	$ 28	$ (10)
Pension and other post-retirement benefits	(2)	1	—
	(17)	29	(10)
Other comprehensive (loss) income attributable to Masco Corporation	$ (3)	$ 170	$ (70)
Total comprehensive income	$ 764	$ 779	$ 456
Less: Total comprehensive income attributable to noncontrolling interest	33	76	33
Total comprehensive income attributable to Masco Corporation	$ 731	$ 703	$ 423

See notes to consolidated financial statements.

MASCO CORPORATION and Consolidated Subsidiaries
CONSOLIDATED STATEMENTS OF CASH FLOWS

For the Years Ended December 31, 2018 , 2017 and 2016
(In Millions)

	2018	2017	2016
CASH FLOWS FROM (FOR) OPERATING ACTIVITIES:			
Net income	$ 784	$ 580	$ 536
Depreciation and amortization	156	127	134
Display amortization	21	25	25
Deferred income taxes	4	13	130
Employee withholding taxes paid on stock-based compensation	42	33	40
Gain on disposition of investments, net	(4)	(4)	(4)
Loss on disposition of businesses, net	—	13	—
Pension and other postretirement benefits	(47)	(38)	(78)
Impairment of financial investments	—	2	—
Stock-based compensation	27	38	29
Increase in receivables	(46)	(140)	(132)
Increase in inventories	(11)	(78)	(37)
Increase in accounts payable and accrued liabilities, net	108	67	79
Debt extinguishment costs	—	104	40
Other, net	(2)	9	27
Net cash from operating activities	1,032	751	789
CASH FLOWS FROM (FOR) FINANCING ACTIVITIES:			
Retirement of notes	(114)	(535)	(1,300)
Purchase of Company common stock	(654)	(331)	(459)
Cash dividends paid	(134)	(129)	(128)
Dividends paid to noncontrolling interest	(89)	(35)	(31)
Issuance of notes, net of issuance costs	—	593	889
Debt extinguishment costs	—	(104)	(40)
Increase in debt	—	2	3
Issuance of Company common stock	—	—	1
Proceeds from the exercise of stock options	14	—	—
Employee withholding taxes paid on stock-based compensation	(42)	(33)	(40)
Payment of debt	(1)	(5)	(4)
Net cash for financing activities	(1,020)	(577)	(1,109)
CASH FLOWS FROM (FOR) INVESTING ACTIVITIES:			
Capital expenditures	(219)	(173)	(180)
Acquisition of businesses, net of cash acquired	(549)	(89)	—
Proceeds from disposition of:			
Businesses, net of cash disposed	—	128	—
Short-term bank deposits	108	218	251
Property and equipment	14	24	—
Other financial investments	5	7	32
Purchases of short-term bank deposits	—	(106)	(211)
Other, net	(10)	(34)	(16)
Net cash for investing activities	(651)	(25)	(124)
Effect of exchange rate changes on cash and cash investments	4	55	(34)
CASH AND CASH INVESTMENTS:			
(Decrease) increase for the year	(635)	204	(478)
At January 1	1,194	990	1,468
At December 31	$ 559	$ 1,194	$ 990

See notes to consolidated financial statements.

MASCO CORPORATION and Consolidated Subsidiaries
CONSOLIDATED STATEMENTS OF SHAREHOLDERS' EQUITY

For the Years Ended December 31, 2018 , 2017 and 2016
(In Millions, Except Per Common Share Data)

	Total	Common Shares ($1 par value)	Paid-In Capital	Retained Earnings (Deficit)	Accumulated Other Comprehensive (Loss) Income	Noncontrolling Interest
Balance, January 1, 2016	$ 58	$ 330	$ —	$ (300)	$ (165)	$ 193
Cumulative effect of adoption of new revenue recognition accounting standard	5			5		
Balance, January 1, 2016	63	330	—	(295)	(165)	193
Total comprehensive income (loss)	456			493	(70)	33
Shares issued	(24)	3	(27)			
Shares retired:						
Repurchased	(459)	(15)	(14)	(430)		
Surrendered (non-cash)	(14)			(14)		
Cash dividends declared	(128)			(128)		
Dividends paid to noncontrolling interest	(31)					(31)
Stock-based compensation	41		41			
Balance, December 31, 2016	$ (96)	$ 318	$ —	$ (374)	$ (235)	$ 195
Total comprehensive income	779			533	170	76
Shares issued	(19)	2	(21)			
Shares retired:						
Repurchased	(331)	(9)	(8)	(314)		
Surrendered (non-cash)	(15)	(1)		(14)		
Cash dividends declared	(129)			(129)		
Dividends paid to noncontrolling interest	(35)					(35)
Stock-based compensation	29		29			
Balance, December 31, 2017	$ 183	$ 310	$ —	$ (298)	$ (65)	$ 236
Reclassification of disproportionate tax effects (Refer to Note A)	—			59	(59)	
Total comprehensive income (loss)	764			734	(3)	33
Shares issued	(9)	3	(4)	(8)		
Shares retired:						
Repurchased	(654)	(19)	(26)	(609)		
Surrendered (non-cash)	(19)			(19)		
Cash dividends declared	(137)			(137)		
Dividends paid to noncontrolling interest	(89)					(89)
Stock-based compensation	30		30			
Balance, December 31, 2018	$ 69	$ 294	$ —	$ (278)	$ (127)	$ 180

See notes to consolidated financial statements.

A. ACCOUNTING POLICIES

Principles of Consolidation. The consolidated financial statements include the accounts of Masco Corporation and all majority-owned subsidiaries. All significant intercompany transactions have been eliminated. We consolidate the assets, liabilities and results of operations of variable interest entities for which we are the primary beneficiary.

Use of Estimates and Assumptions in the Preparation of Financial Statements. The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires us to make certain estimates and assumptions that affect the reported amounts of assets and liabilities, disclosure of any contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results may differ from these estimates and assumptions.

Revenue Recognition. We recognize revenue as control of our products is transferred to our customers, which is generally at the time of shipment or upon delivery based on the contractual terms with our customers, or when services are completed. Control over certain of our custom-made window products transfers to our customers as production is completed, and revenue is recognized over the production period for these products, as our products do not have an alternative use and we have an enforceable right to payment during the production period. The production period of our custom-made window products generally does not lapse days, and for these products we currently recognize revenue based on the output of production, which is a faithful depiction of the transfer of these products to our customers. Our customers' payment terms generally range from 30 to 65 days of fulfilling our performance obligations and recognizing revenue.

We provide customer programs and incentive offerings, including special pricing and co-operative advertising arrangements, promotions and other volume-based incentives. These customer programs and incentives are considered variable consideration. We include in revenue variable consideration only to the extent that it is probable that a significant reversal in the amount of cumulative revenue recognized will not occur when the variable consideration is resolved. This determination is made based upon known customer program and incentive offerings at the time of sale, and expected sales volume for ecasts as it relates to our volume-based incentives. This determination is updated each reporting period.

Certain product sales include a right of return. We estimate future product returns at the time of sale based on historical experience and record a corresponding refund liability. We additionally record an asset, based on historical experience, for the amount of product we expect to return to inventory as a result of the return, which is recorded in prepaid expenses and other in the consolidated balance sheets.

We consider shipping and handling activities performed by us as activities to fulfill the sales of our products. Amounts billed for shipping and handling are included in net sales, while costs incurred for shipping and handling are included in cost of sales. We capitalize incremental costs of obtaining a contract and expense the costs on a straight-line basis over the contractual period if the cost is recoverable, the cost would not have been incurred without the contract and the term of the contract is greater than one year; otherwise, we expense the amounts as incurred. We do not adjust the promised amount of consideration for the effects of a financing component if the period between when we transfer our products or services and when our customers pay for our products or services is expected to be one year or less.

Customer Displays. In-store displays that are owned by us and used to market our products are included in other assets in the consolidated balance sheets and are amortized using the straight-line method over the expected useful life of three to five years; related amortization expense is classified as a selling expense in the consolidated statement of operations.

Foreign Currency. The financial statements of our foreign subsidiaries are measured using the local currency as the functional currency. Assets and liabilities of these subsidiaries are translated at exchange rates as of the balance sheet dates. Revenues and expenses are translated at average exchange rates in effect during the year. The resulting cumulative translation adjustments have been recorded in the accumulated other comprehensive loss component of shareholders' equity. Realized foreign currency transaction gains and losses are included in the consolidated statements of operations in other income (expense), net.

Cash and Cash Investments. We consider all highly liquid investments with an initial maturity of three months or less to be cash and cash investments.

A. ACCOUNTING POLICIES (Continued)

Short-Term Bank Deposits. We invest a portion of our foreign excess cash in short-term bank deposits. These highly liquid investments have original maturities between three and twelve months and are valued at cost, which approximated fair value at December 31, 2018 and 2017 . These short-term bank deposits are classified in the current assets section of our consolidated balance sheets, and interest income related to short-term bank deposits is recorded in our consolidated statements of operations in other income (expense), net.

Receivables. We do significant business with a number of customers, including certain home center retailers and homebuilders. We monitor our exposure for credit losses on our customer receivable balances and the credit worthiness of our customers on an on-going basis and record related allowances for doubtful accounts. Allowances are estimated based upon specific customer balances, where a risk of default has been identified, and also include a provision for non-customer specific defaults based upon historical collection, return and write-off activity. A separate allowance is recorded for customer incentive rebates and is generally based upon sales activity. Receivables are presented net of certain allowances (including allowances for doubtful accounts) of $46 million and $36 million at December 31, 2018 and 2017 , respectively.

Property and Equipment. Property and equipment, including significant improvements to existing facilities, are recorded at cost. Upon retirement or disposal, the cost and accumulated depreciation are removed from the accounts and any gain or loss is included in the consolidated statements of operations. Maintenance and repair costs are charged against earnings as incurred.

We review our property and equipment as events occur or circumstances change that would more likely than not reduce the fair value of the property and equipment below the carrying amount. If the carrying amount of property and equipment is not recoverable from its undiscounted cash flows, then we would recognize an impairment loss for the difference between the carrying amount and the current fair value. Further, we evaluate the remaining useful lives of property and equipment at each reporting period to determine whether events and circumstances warrant a revision to the remaining depreciation periods.

Depreciation. Depreciation expense is computed principally using the straight-line method over the estimated useful lives of the assets. Annual depreciation rates are as follows: buildings and land improvements, 2 to 10 percent, computer hardware and software, 17 to 33 percent, and machinery and equipment, 5 to 33 percent. Depreciation expense was $132 million , $116 million and $124 million in 2018 , 2017 and 2016 , respectively.

Goodwill and Other Intangible Assets. We perform our annual impairment testing of goodwill in the fourth quarter of each year, or as events occur or circumstances change that would more likely than not reduce the fair value of a reporting unit below its carrying amount. We have defined our reporting units and completed the impairment testing of goodwill at the operating segment level. Our operating segments are reporting units that engage in business activities, for which discrete financial information, including five-year forecasts, are available. We compare the fair value of the reporting units to the carrying value of the reporting units for goodwill impairment testing. Fair value is determined using a discounted cash flow method, which includes significant unobservable inputs (Level 3 inputs), and requires us to make significant estimates and assumptions, including long-term projections of cash flows, market conditions and appropriate discount rates. Our judgments are based upon historical experience, current market trends, consultations with external valuation specialists and other information. In estimating future cash flows, we rely on internally generated five-year forecasts for sales and operating profits, and, currently, a two percent to three percent long-term assumed annual growth rate of cash flows for periods after the five -year forecast. We utilize our weighted average cost of capital of approximately 9.0 percent as the basis to determine the discount rate to apply to the estimated future cash flows. In 2018 , based upon our assessment of the risks impacting each of our businesses, we applied a risk premium to increase the discount rate to a range of 11.0 percent to 13.5 percent for our reporting units. If the carrying amount of a reporting unit exceeds its fair value, an impairment loss is recognized to the extent that a reporting unit's carrying value exceeds its fair value, not to exceed the carrying amount of goodwill in that reporting unit.

We review our other indefinite-lived intangible assets for impairment annually in the fourth quarter, or as events occur or circumstances change that indicate the assets may be impaired without regard to the business unit. Potential impairment is identified by comparing the fair value of an other indefinite-lived intangible asset to its carrying value. We utilized a relief-from-royalty model to estimate the fair value of other indefinite-lived intangible assets. We consider the implications of both external (e.g., market growth, competition and local economic conditions) and internal (e.g., product sales and expected product growth) factors and their potential impact on cash flows related to the intangible asset in both the near- and long-term. We also consider the profitability of the business, among other factors, to determine the royalty rate for use in the impairment assessment. We utilize our weighted average cost of capital of

A. ACCOUNTING POLICIES (Continued)

approximately 9.0 percent as the basis to determine the discount rate to apply to the estimated future cash flows. In 2018 , based upon our assessment of the risks impacting each of our businesses, we applied a risk premium to increase the discount rate to a range of 12.0 percent to 13.5 percent for our other indefinite-lived intangible assets.

While we believe that the estimates and assumptions underlying the valuation methodologies are reasonable, different estimates and assumptions could result in different outcomes.

Intangible assets with finite useful lives are amortized using the straight-line method over their estimated useful lives. We review our intangible assets with finite useful lives as events occur or circumstances change that would more likely than not reduce the fair value of the assets below the carrying amount. If the carrying amount of the assets is not recoverable from the undiscounted cash flows, then we would recognize an impairment loss for the difference between the carrying amount and the current fair value. We evaluate the remaining useful lives of amortizable intangible assets at each reporting period to determine whether events or circumstances warrant a revision to the remaining periods of amortization.

Refer to Note H for additional information regarding goodwill and other intangible assets.

Fair Value Accounting. We use derivative financial instruments to manage certain exposure to fluctuations in earnings and cash flows resulting from changes in foreign currency exchange rates, and occasionally from changes in commodity costs and interest rate exposures. Derivative financial instruments are recorded in the consolidated balance sheets as either an asset or liability measured at fair value, netted by counterparty, where the right of offset exists. The gain or loss is recognized in determining current earnings during the period of the change in fair value. We currently do not have any derivative instruments for which we have designated hedge accounting.

Warranty. We offer full and limited warranties on certain products with warranty periods ranging up to the lifetime of the product to the original consumer purchaser. At the time of sale, we accrue a warranty liability for the estimated future cost to provide products, parts or services to repair or replace products to satisfy our warranty obligations. Our estimate of future costs to service our warranty obligations is based upon the information available and includes a number of factors, such as the warranty coverage, the warranty period, historical experience specific to the nature, frequency and average cost to service the claim, along with industry and demographic trends.

Certain factors and related assumptions in determining our warranty liability involve judgments and estimates and are sensitive to changes in the factors described above. We believe that the warranty accrual is appropriate; however, actual claims incurred could differ from our original estimates which would require us to adjust our previously established accruals. Refer to Note T for additional information on our warranty accrual.

A significant portion of our business is at the consumer retail level through home center retailers and other major retailers. A consumer may return a product to a retail outlet that is a warranty return. However, certain retail outlets do not distinguish between warranty and other types of returns when they claim a return deduction from us. Our revenue recognition policy takes into account this type of return when recognizing revenue, and an estimate of these amounts is recorded as a deduction to net sales at the time of sale.

Insurance Reserves. We provide for expenses associated with workers' compensation and product liability obligations when such amounts are probable and can be reasonably estimated. The accruals are adjusted as new information develops or circumstances change that would affect the estimated liability. Any obligations expected to be settled within 12 months are recorded in accrued liabilities; all other obligations are recorded in other liabilities **.**

Litigation. We are involved in claims and litigation, including class actions and regulatory proceedings, which arise in the ordinary course of our business. Liabilities and costs associated with these matters require estimates and judgments based upon our professional knowledge and experience and that of our legal counsel. When a liability is probable of being incurred and our exposure in these matters is reasonably estimable, amounts are recorded as charges to earnings. The ultimate resolution of these exposures may differ due to subsequent developments.

A. ACCOUNTING POLICIES (Continued)

Stock-Based Compensation. We issue stock-based incentives in various forms to our employees and non-employee Directors. Outstanding stock-based incentives were in the form of long-term stock awards, stock options, restricted stock units ("RSUs"), phantom stock awards and stock appreciation rights ("SARs"). We measure compensation expense for stock awards at the market price of our common stock at the grant date. Such expense is recognized ratably over the shorter of the vesting period of the stock awards, typically 5 or 10 years , or the length of time until the grantee becomes retirement-eligible, generally at age 65. We measure compensation expense for stock options using a Black-Scholes option pricing model. Such expense is recognized ratably over the shorter of the vesting period of the stock options, typically five years , or the length of time until the grantee becomes retirement-eligible, generally at age 65. We measure compensation expense for RSUs at the expected payout of the awards. Such expense is recognized ratably over the three -year vesting period of the units. We recognize forfeitures related to stock awards, stock options and RSUs as they occur.

We initially measure compensation expense for phantom stock awards at the market price of our common stock at the grant date. Such expense is recognized ratably over the vesting period, typically 5 to 10 years . Phantom stock awards are linked to the value of our common stock on the date of grant and are settled in cash upon vesting. We account for phantom stock awards as liability-based awards; the liability is remeasured and adjusted at the end of each reporting period until the awards are fully-vested and paid to the employees. We measure compensation expense for SARs using a Black-Scholes option pricing model; such expense is recognized ratably over the vesting period, typically five years . SARs are linked to the value of our common stock on the date of grant and are settled in cash upon exercise. We account for SARs using the fair value method, which requires outstanding SARs to be classified as liability-based awards. The liability is remeasured and adjusted at the end of each reporting period until the SARs are exercised and payment is made to the employees or the SARs expire. Refer to Note L for additional information on stock-based compensation.

Noncontrolling Interest. We owned 68 percent of Hansgrohe SE at both December 31, 2018 and 2017 . The aggregate noncontrolling interest, net of dividends, at December 31, 2018 and 2017 has been recorded as a component of equity on our consolidated balance sheets.

Income Taxes. Deferred taxes are recognized based on the future tax consequences of differences between the financial statement carrying value of assets and liabilities and their respective tax basis. The future realization of deferred tax assets depends on the existence of sufficient taxable income in future periods. Possible sources of taxable income include taxable income in carryback periods, the future reversal of existing taxable temporary differences recorded as a deferred tax liability, tax-planning strategies that generate future income or gains in excess of anticipated losses in the carryforward period and projected future taxable income.

If, based upon all available evidence, both positive and negative, it is more likely than not (more than 50 percent likely) such deferred tax assets will not be realized, a valuation allowance is recorded. Significant weight is given to positive and negative evidence that is objectively verifiable. A company's three-year cumulative loss position is significant negative evidence in considering whether deferred tax assets are realizable, and the accounting guidance restricts the amount of reliance we can place on projected taxable income to support the recovery of the deferred tax assets.

The current accounting guidance allows the recognition of only those income tax positions that have a greater than 50 percent likelihood of being sustained upon examination by the taxing authorities. We believe that there is an increased potential for volatility in our effective tax rate because this threshold allows for changes in the income tax environment and, to a greater extent, the inherent complexities of income tax law in a substantial number of jurisdictions, which may affect the computation of our liability for uncertain tax positions.

We record interest and penalties on our uncertain tax positions in income tax expense.

The accounting guidance for income taxes requires us to allocate our provision for income taxes between continuing operations and other categories of earnings, such as other comprehensive income (loss). Subsequent adjustments to deferred taxes originally recorded to other comprehensive income (loss) may reverse in a different category of earnings, such as continuing operations, resulting in a disproportionate tax effect within accumulated other comprehensive income (loss). Generally, a disproportionate tax effect will be eliminated and recognized in income tax expense when the circumstances upon which it is premised cease to exist.

A. ACCOUNTING POLICIES (Continued)

The disproportionate tax effect related to various defined-benefit pension plans will be eliminated from accumulated other comprehensive income (loss) at the termination of the related pension plans. The disproportionate tax effect relating to our interest rate swap hedge, which was terminated in 2012, will be eliminated from accumulated other comprehensive income (loss) upon the maturity of the related debt in March 2022.

We record the tax effects of Global Intangible Low-taxed Income related to our foreign operations as a component of income tax expense in the period the tax arises.

Reclassifications. Certain prior year amounts have been reclassified to conform to the 2018 presentation in the consolidated financial statements.

Recently Adopted Accounting Pronouncements. In May 2014, the Financial Accounting Standards Board ("FASB") issued a new standard for revenue recognition, Accounting Standards Codification ("ASC") 606. The purpose of ASC 606 is to provide a single, comprehensive revenue recognition model for all contracts with customers to improve comparability across industries. We adopted ASC 606 on January 1, 2018, under the full retrospective method of adoption. As a result of this adoption, net sales decreased by $2 million and increased by $4 million in 2017 and 2016, respectively, and operating profit (and income before income taxes) decreased by $1 million and increased by $2 million in 2017 and 2016, respectively, from what was previously reported. We additionally have recast our previously reported segment operating results at the end of this section.

In January 2016, the FASB issued ASU 2016-01, "Financial Instruments-Overall: Recognition and Measurement of Financial Assets and Financial Liabilities," which primarily affects the accounting for equity investments, financial liabilities under the fair value option, and the presentation and disclosure requirements for financial instruments. We adopted ASU 2016-01 on January 1, 2018. The adoption of this standard did not have a material impact on our financial position or results of operations.

In October 2016, the FASB issued ASU 2016-16, "Income Taxes (Topic 740): Intra-Entity Asset Transfers of Assets Other than Inventory," which no longer allows the tax effects of intra-entity asset transfers (intercompany sales) of assets other than inventory to be deferred until the transferred asset is sold to a third party or otherwise recovered through use. The new standard requires the tax expense from the sale of the asset in the seller's tax jurisdiction and the corresponding basis differences in the buyer's jurisdiction to be recognized when the transfer occurs even though the pre-tax effects of the transaction are eliminated in consolidation. We adopted ASU 2016-16 on January 1, 2018. The adoption of this standard did not have a material impact on our financial position or results of operations.

In March 2017, the FASB issued ASU 2017-07, "Compensation-Retirement Benefits (Topic 715): Improving the Presentation of Net Periodic Pension Cost and Net Periodic Postretirement Benefit Cost," which modifies the presentation of net periodic pension and post-retirement benefit cost ("net benefit cost") in the income statement and the components eligible for capitalization as assets. ASU 2017-07 requires retrospective application for certain aspects of the standard. We adopted ASU 2017-07 on January 1, 2018. As a result of the adoption, we reclassified $26 million and $32 million of net benefit cost from operating profit to other income (expense), net, within our results of operations in 2017 and 2016, respectively. We additionally have recast our previously reported segment operating results at the end of this section. The adoption of the standard did not impact income before income taxes.

In May 2017, the FASB issued ASU 2017-09, "Compensation-Stock Compensation (Topic 718): Scope of Modification Accounting," which clarifies when to account for a change to the terms or conditions of a share-based payment award as a modification. We adopted ASU 2017-09 on January 1, 2018. The adoption of this standard did not impact our financial position or results of operations; however, modification accounting is now required only if the fair value, the vesting conditions, or the classification of the award (as equity or liability) changes as a result of the change in terms or conditions.

In February 2018, the FASB issued ASU 2018-02, "Income Statement-Reporting Comprehensive Income (Topic 220): Reclassification of Certain Tax Effects from Accumulated Other Comprehensive Income," which permits a company to reclassify from accumulated other comprehensive income (loss) to retained earnings the disproportionate tax effects resulting from the Tax Cuts and Jobs Act of 2017 (“2017 Tax Act”). We early adopted ASU 2018-02 on March 31, 2018. As a result of the adoption, we decreased accumulated other comprehensive income (loss) and increased retained earnings (deficit) by the $59 million disproportionate tax effect caused by the 2017 Tax Act.

A. ACCOUNTING POLICIES (Continued)

Impact of Adoption of ASC 606 and ASU 2017-07. The impact to our previously reported operating results and basic and diluted income per share due to the adoptions of ASC 606 and ASU 2017-07 was as follows, in millions (except per common share data):

	Year Ended December 31, 2016			
	Net Sales		Operating Profit (Loss)	
	As Reported	As Recast	As Reported	As Recast
Operations by segment:				
Plumbing Products	$ 3,526	$ 3,529	$ 642	$ 654
Decorative Architectural Products	2,092	2,092	430	433
Cabinetry Products	970	970	93	97
Windows and Other Specialty Products	769	770	(3)	(3)
Total	$ 7,357	$ 7,361	1,162	1,181
General corporate expense, net			(109)	(94)
Operating profit			$ 1,053	$ 1,087

	Year Ended December 31, 2016	
	As Reported	As Recast
Net income attributable to Masco Corporation	$ 491	$ 493
Income per common share attributable to Masco Corporation:		
Basic:	$ 1.49	$ 1.49
Diluted:	$ 1.47	$ 1.48

	Year Ended December 31, 2017			
	Net Sales		Operating Profit (Loss)	
	As Reported	As Recast	As Reported	As Recast
Operations by segment:				
Plumbing Products	$ 3,735	$ 3,732	$ 698	$ 702
Decorative Architectural Products	2,205	2,206	434	438
Cabinetry Products	934	934	90	92
Windows and Other Specialty Products	770	770	52	54
Total	$ 7,644	$ 7,642	1,274	1,286
General corporate expense, net			(105)	(92)
Operating profit			$ 1,169	$ 1,194

	Year Ended December 31, 2017	
	As Reported	As Recast
Net income attributable to Masco Corporation	$ 533	$ 533
Income per common share attributable to Masco Corporation:		
Basic:	$ 1.68	$ 1.68
Diluted:	$ 1.66	$ 1.66

A. ACCOUNTING POLICIES (Concluded)

Recently Issued Accounting Pronouncements. In February 2016, the FASB issued a new standard for leases, ASC 842, which changes the accounting model for identifying and accounting for leases. ASC 842 is effective for us for annual periods beginning January 1, 2019. We currently anticipate adopting the new standard using the optional transition method which allows for initial application of the new standard beginning at the adoption date. We expect this standard to increase our total assets and total liabilities by approximately five percent. We do not expect the standard to have a material impact on our results of operations. In preparation for the adoption of the standard, we have procured a third-party software to track and manage our leases, loaded lease data into the software, authored our accounting policy, trained our business units on the new standard and policy and the use of the software, and modified our control environment accordingly. We have not experienced significant issues in our implementation process.

In June 2016, the FASB issued ASU 2016-13, "Financial Instruments-Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments," which modifies the methodology for recognizing loss impairments on certain types of financial instruments, including receivables. The new methodology requires an entity to estimate the credit losses expected over the life of an exposure. Additionally, ASU 2016-13 amends the current available-for-sale security other-than-temporary impairment model for debt securities. ASU 2016-13 is effective for us for annual periods beginning January 1, 2020. We are currently evaluating the impact the adoption of this new standard will have on our financial position and results of operations.

In August 2017, the FASB issued ASU 2017-12, "Derivatives and Hedging (Topic 815): Targeted Improvements to Accounting for Hedging Activities," which improves and simplifies accounting rules around hedge accounting and better portrays the economic results of an entity's risk management activities in its financial statements. ASU 2017-12 is effective for us for annual periods beginning January 1, 2019. We do not expect the adoption of the standard will impact our financial position or results of operations.

In June 2018, the FASB issued ASU 2018-07, "Compensation-Stock Compensation (Topic 718): Improvements to Nonemployee Share-Based Payment Accounting," which modifies the accounting for share-based payment awards issued to nonemployees to largely align it with the accounting for share-based payment awards issued to employees. ASU 2018-07 is effective for us for annual periods beginning January 1, 2019. We do not expect the adoption of the standard will impact our financial position or results of operations.

In August 2018, the FASB issued ASU 2018-15, "Intangibles-Goodwill and Other-Internal-Use Software (Subtopic 350-40): Customer's Accounting for Implementation Costs Incurred in a Cloud Computing Arrangement That Is a Service Contract," which allows for the capitalization of certain implementation costs incurred in a hosting arrangement that is a service contract. ASU 2018-15 allows for either retrospective adoption or prospective adoption to all implementation costs incurred after the date of adoption. ASU 2018-15 is effective for us for annual periods beginning January 1, 2020. We are currently evaluating the impact the adoption of this new standard will have on our financial position and results of operations.

B. DIVESTITURES

In the fourth quarter of 2017 we divested Moores Furniture Group Limited ("Moores"), a manufacturer of kitchen and bathroom furniture in the United Kingdom. In connection with the divestiture we recognized a loss of $64 million for the year ended December 31, 2017, included in other, net, within other income (expense), net in our consolidated statement of operations. This loss resulted primarily from the recognition of $58 million of defined-benefit pension plan actuarial losses, net of tax, that were previously included within accumulated other comprehensive loss, due to the transfer of the plan assets and obligations to the purchaser in connection with the sale of the business. Prior to divestiture, the results of this business are included within income before income taxes in the consolidated statement of operations and reported as part of our Cabinetry Products segment.

In the second quarter of 2017 we divested Arrow Fastener Co., LLC ("Arrow"), a manufacturer and distributor of fastening tools, for proceeds of $128 million . In connection with the divestiture we recognized a gain of $51 million for the year ended December 31, 2017, included in other, net, within other income (expense), net in our consolidated statement of operations. Prior to divestiture, the results of this business are included within income before income taxes in the consolidated statement of operations and reported as part of our Windows and Other Specialty Products segment.

C. ACQUISITIONS

On March 9, 2018, we acquired substantially all of the net assets of The L.D. Kichler Co. ("Kichler"), a leader in decorative residential and light commercial lighting products, ceiling fans and LED lighting systems. This business expands our product offerings to our customers. The results of this acquisition for the period from the acquisition date are included in the consolidated financial statements and are reported in the Decorative Architectural Products segment. We recorded $346 million of net sales as a result of this acquisition during 2018. The purchase price, net of $2 million cash acquired, consisted of $549 million paid with cash on hand.

Since the acquisition, we have revised the allocation of the purchase price to identifiable assets and liabilities based on analysis of information as of the acquisition date that has been made available through December 31, 2018 . The allocation will continue to be updated through the measurement period, if necessary. The preliminary allocation of the fair value of the acquisition of Kichler is summarized in the following table, in millions.

	Initial	Revised
Receivables	$ 101	$ 100
Inventories	173	166
Prepaid expenses and other	5	5
Property and equipment	33	33
Goodwill	46	64
Other intangible assets	243	240
Accounts payable	(24)	(24)
Accrued liabilities	(25)	(30)
Other liabilities	(4)	(5)
Total	$ 548	$ 549

The goodwill acquired, which is generally tax deductible, is related primarily to the operational and financial synergies we expect to derive from combining Kichler's operations into our business, as well as the assembled workforce. The other intangible assets acquired consist of $59 million of indefinite-lived intangible assets, which is related to trademarks, and $181 million of definite-lived intangible assets. The definite-lived intangible assets consist of $145 million related to customer relationships, which is being amortized on a straight-line basis over 20 years , and $36 million of other definite-lived intangible assets, which is being amortized over a weighted average amortization period of three years .

In the fourth quarter of 2017, we acquired Mercury Plastics, Inc., a plastics processor and manufacturer of water handling systems for appliance and faucet applications, for approximately $89 million in cash. This business is included in the Plumbing Products segment. This acquisition enhances our ability to develop faucet technology and provides continuity of supply of quality faucet components. In connection with this acquisition, we recognized $38 million of goodwill, which is tax deductible, and is related primarily to the expected synergies from combining the operations into our business.

D. REVENU E

Our revenues are derived primarily from sales to customers in North America and Internationally, principally Europe. Net sales from these geographic markets, by segment, were as follows, in millions:

	Year Ended December 31, 2018				
	Plumbing Products	Decorative Architectural Products	Cabinetry Products	Windows and Other Specialty Products	Total
Primary geographic markets:					
North America	$ 2,552	$ 2,656	$ 950	$ 605	$ 6,763
International, principally Europe	1,446	—	—	150	1,596
Total	$ 3,998	$ 2,656	$ 950	$ 755	$ 8,359

	Year Ended December 31, 2017				
	Plumbing Products	Decorative Architectural Products	Cabinetry Products	Windows and Other Specialty Products	Total
Primary geographic markets:					
North America	$ 2,362	$ 2,206	$ 891	$ 608	$ 6,067
International, principally Europe	1,370	—	43	162	1,575
Total	$ 3,732	$ 2,206	$ 934	$ 770	$ 7,642

	Year Ended December 31, 2016				
	Plumbing Products	Decorative Architectural Products	Cabinetry Products	Windows and Other Specialty Products	Total
Primary geographic markets:					
North America	$ 2,238	$ 2,092	$ 908	$ 600	$ 5,838
International, principally Europe	1,291	—	62	170	1,523
Total	$ 3,529	$ 2,092	$ 970	$ 770	$ 7,361

We recognized increases to revenue of $4 million , $9 million , and $6 million in 2018, 2017 , and 2016 , respectively, for variable consideration related to performance obligations settled in previous periods.

We record contract assets for items for which we have satisfied our performance obligation but our receipt of payment is contingent upon delivery or other circumstances other than the passage of time. Our contract assets are recorded in prepaid expenses and other in our consolidated balance sheets. Our contract assets generally become unconditional and are reclassified to receivables in the quarter subsequent to each balance sheet date. Our contract asset balance was $14 million and $11 million at December 31, 2018 and 2017 , respectively.

We record contract liabilities primarily for deferred revenue. Our contract liabilities are recorded in accrued liabilities in our consolidated balance sheets. Our contract liabilities are generally recognized to net sales in the immediately subsequent reporting period. Our contract liability balance was $41 million and $32 million at December 31, 2018 and 2017 , respectively.

E. INVENTORIES

	(In Millions) At December 31	
	2018	2017
Finished goods	$ 520	$ 402
Raw materials	325	277
Work in process	101	105
Total	$ 946	$ 784

Inventories, which include purchased parts, materials, direct labor and applied overhead, are stated at the lower of cost or net realizable value, with cost determined by use of the first-in, first-out method.

F. DERIVATIVE INSTRUMENTS AND HEDGING ACTIVITIES

We are exposed to global market risk as part of our normal, daily business activities. To manage these risks, we enter into various derivative contracts. These contracts may include interest rate swap agreements, foreign currency contracts and metals contracts. We review our hedging program, derivative positions and overall risk management on a regular basis.

Interest Rate Swap Agreements. In 2012, in connection with the issuance of $400 million of debt, we terminated the interest rate swap hedge relationships that we had entered into in 2011. These interest rate swaps were designated as cash flow hedges and effectively fixed interest rates on the forecasted debt issuance to variable rates based on 3-month LIBOR. Upon termination, the ineffective portion of the cash flow hedges of an approximate $2 million loss was recognized in our consolidated statement of operations in other, net, within other income (expense), net. The remaining loss of approximately $23 million from the termination of these swaps is being amortized as an increase to interest expense over the remaining term of the debt, through March 2022. At December 31, 2018 , the remaining pre-tax balance in accumulated other comprehensive loss was $6 million .

Foreign Currency Contracts. Our net cash inflows and outflows exposed to the risk of changes in foreign currency exchange rates arise from the sale of products in countries other than the manufacturing source, foreign currency denominated supplier payments, debt and other payables, and investments in subsidiaries. To mitigate this risk, we, including certain European operations, enter into foreign currency forward contracts and foreign currency exchange contracts.

Gains (losses) related to foreign currency forward and exchange contracts are recorded in our consolidated statements of operations in other income (expense), net. In the event that the counterparties fail to meet the terms of the foreign currency forward or exchange contracts, our exposure is limited to the aggregate foreign currency rate differential with such institutions.

Metals Contracts. Occasionally, we have entered into contracts to manage our exposure to increases in the price of copper and zinc. Gains (losses) related to these contracts are recorded in our consolidated statements of operations in cost of sales.

The pre-tax (losses) gains included in our consolidated statements of operations are as follows, in millions **:**

	Year Ended December 31,		
	2018	2017	2016
Foreign currency contracts:			
Exchange contracts	$ 1	$ (1)	$ —
Forward contracts	—	1	—
Metals contracts	—	—	5
Interest rate swaps	(2)	(4)	(2)
Total	$ (1)	$ (4)	$ 3

F. DERIVATIVE INSTRUMENTS AND HEDGING ACTIVITIES (Concluded)

We present our derivatives net by counterparty in the consolidated balance sheets, due to the right of offset under master netting arrangements. The notional amounts being hedged and the fair value of those derivative instruments are as follows, in millions:

	At December 31, 2018	
	Notional Amount	Balance Sheet
Foreign currency contracts:		
Forward contracts	$ 74	
Receivables		$ —
Accrued liabilities		—
Other liabilities		—

	At December 31, 2017	
	Notional Amount	Balance Sheet
Foreign currency contracts:		
Exchange contracts	$ 14	
Accrued liabilities		$ —
Forward contracts	43	
Receivables		—
Accrued liabilities		—

The fair value of all foreign currency and metals derivative contracts is estimated on a recurring basis, quarterly, using Level 2 inputs (significant other observable inputs).

G. PROPERTY AND EQUIPMENT

	(In Millions) At December 31	
	2018	2017
Land and improvements	$ 107	$ 110
Buildings	699	681
Computer hardware and software	367	327
Machinery and equipment	1,625	1,547
	2,798	2,665
Less: Accumulated depreciation	(1,575)	(1,536)
Total	$ 1,223	$ 1,129

We lease certain equipment and plant facilities under noncancellable operating leases. Rental expense recorded in the consolidated statements of operations totaled approximately $80 million , $66 million and $63 million during 2018 , 2017 and 2016 , respectively.

At December 31, 2018 , future minimum lease payments were as follows, in millions:

2019	$ 55
2020	47
2021	40
2022	30
2023	20
2024 and beyond	99

H. GOODWILL AND OTHER INTANGIBLE ASSETS

The changes in the carrying amount of goodwill, by segment, were as follows, in millions:

	Gross Goodwill At December 31, 2018	Accumulated Impairment Losses	Net Goodwill At December 31, 2018
Plumbing Products	$ 568	$ (340)	$ 228
Decorative Architectural Products	358	(75)	283
Cabinetry Products	181	—	181
Windows and Other Specialty Products	717	(511)	206
Total	$ 1,824	$ (926)	$ 898

	Gross Goodwill At December 31, 2017	Accumulated Impairment Losses	Net Goodwill At December 31, 2017	Additions (A)	Other (C)	Net Goodwill At December 31, 2018
Plumbing Products	$ 574	$ (340)	$ 234	$ —	$ (6)	$ 228
Decorative Architectural Products	294	(75)	219	64	—	283
Cabinetry Products	181	—	181	—	—	181
Windows and Other Specialty Products	718	(511)	207	—	(1)	206
Total	$ 1,767	$ (926)	$ 841	$ 64	$ (7)	$ 898

	Gross Goodwill At December 31, 2016	Accumulated Impairment Losses	Net Goodwill At December 31, 2016	Additions (A)	Divestitures (B)	Other (C)	Net Goodwill At December 31, 2017
Plumbing Products	$ 519	$ (340)	$ 179	$ 38	$ —	$ 17	$ 234
Decorative Architectural Products	294	(75)	219	—	—	—	219
Cabinetry Products	240	(59)	181	—	—	—	181
Windows and Other Specialty Products	987	(734)	253	—	(47)	1	207
Total	$ 2,040	$ (1,208)	$ 832	$ 38	$ (47)	$ 18	$ 841

(A) Additions consist of acquisitions.

(B) Included within divestitures is the disposition of Moores in the Cabinetry Products segment, which includes $59 million of both gross goodwill and accumulated impairment losses, and the disposition of Arrow in the Windows and Other Specialty Products segment, which includes $270 million of gross goodwill and $223 million of accumulated impairment losses.

(C) Other consists of the effect of foreign currency translation.

Other indefinite-lived intangible assets were $199 million and $140 million at December 31, 2018 and 2017 , respectively, and principally included registered trademarks. As a result of our 2018 and 2017 acquisitions, other indefinite-lived intangible assets increased by $59 million and $5 million , respectively, as of the acquisition dates.

We completed our annual impairment testing of goodwill and other indefinite-lived intangible assets in the fourth quarters of 2018 , 2017 and 2016 . There was no impairment of goodwill for any of our reporting units or of our other indefinite-lived intangible assets in any of these years.

H. GOODWILL AND OTHER INTANGIBLE ASSETS (Concluded)

The carrying value of our definite-lived intangible assets was $207 million (net of accumulated amortization of $29 million) at December 31, 2018 and $47 million (net of accumulated amortization of $10 million) at December 31, 2017 and principally included customer relationships with a weighted average amortization period of 16 years in 2018 and 12 years in 2017 . Amortization expense related to the definite-lived intangible assets was $20 million , $4 million and $4 million in 2018 , 2017 and 2016 , respectively. As a result of our 2018 and 2017 acquisitions, definite-lived intangible assets increased by $181 million and $26 million , respectively, as of the acquisition dates.

At December 31, 2018 , amortization expense related to the definite-lived intangible assets during each of the next five years was as follows: 2019 – $24 million ; 2020 – $23 million ; 2021 – $16 million , 2022 – $12 million and 2023 – $11 million .

I. OTHER ASSETS

	(In Millions) At December 31	
	2018	2017
Equity method investments	$ 11	$ 11
Private equity funds	1	2
In-store displays, net	20	31
Deferred tax assets (Note R)	42	45
Other	26	25
Total	$ 100	$ 114

We recognized amortization expense related to in-store displays of $21 million , $25 million and $25 million in 2018 , 2017 and 2016 , respectively. Cash spent for displays was $10 million , $14 million and $11 million in 2018 , 2017 and 2016 , respectively, and is included in other, net within investing activities on the consolidated statements of cash flows.

J. ACCRUED LIABILITIES

	(In Millions) At December 31	
	2018	2017
Salaries, wages and commissions	$ 170	$ 196
Advertising and sales promotion	173	158
Interest	40	42
Warranty (Note T)	65	59
Employee retirement plans	42	50
Insurance reserves	41	40
Property, payroll and other taxes	25	27
Dividends payable	36	33
Deferred revenue	41	32
Product returns	26	17
Other	91	73
Total	$ 750	$ 727

K. DEBT

	(In Millions) At December 31	
	2018	2017
Notes and debentures:		
6.625%, due April 15, 2018	$ —	$ 114
7.125%, due March 15, 2020	201	201
3.500%, due April 1, 2021	399	399
5.950%, due March 15, 2022	326	326
4.450%, due April 1, 2025	500	500
4.375%, due April 1, 2026	498	498
3.500%, due November 15, 2027	300	300
7.750%, due August 1, 2029	235	234
6.500%, due August 15, 2032	200	200
4.500%, due May 15, 2047	299	299
Other	38	33
Prepaid debt issuance costs	(17)	(19)
	2,979	3,085
Less: Current portion	8	116
Total long-term debt	$ 2,971	$ 2,969

All of the notes and debentures above are senior indebtedness and, other than the 7.75% note due 2029, are redeemable at our option.

On April 16, 2018, we repaid and retired all of our $114 million , 6.625% Notes on the scheduled repayment date.

On June 21, 2017, we issued $300 million of 3.5% Notes due November 15, 2027 and $300 million of 4.5% Notes due May 15, 2047. We received proceeds of $599 million , net of discount, for the issuance of these Notes. The Notes are senior indebtedness and are redeemable at our option at the applicable redemption price. On June 27, 2017, proceeds from the debt issuances, together with cash on hand, were used to repay and early retire $299 million of our 7.125% Notes due March 15, 2020, $74 million of our 5.95% Notes due March 15, 2022, $62 million of our 7.75% Notes due August 1, 2029, and $100 million of our 6.5% Notes due August 15, 2032. In connection with these early retirements, we incurred a loss on debt extinguishment of $107 million , which was recorded as interest expense.

On March 17, 2016 , we issued $400 million of 3.5% Notes due April 1, 2021 and $500 million of 4.375% Notes due April 1, 2026. We received proceeds of $896 million , net of discount, for the issuance of these Notes. The Notes are senior indebtedness and are redeemable at our option at the applicable redemption price. On April 15, 2016, proceeds from the debt issuances, together with cash on hand, were used to repay and early retire all of our $1 billion , 6.125% Notes which were due on October 3, 2016 and all of our $300 million , 5.85% Notes which were due on March 15, 2017. In connection with these early retirements, we incurred a loss on debt extinguishment of $40 million , which was recorded as interest expense.

On March 28, 2013, we entered into a credit agreement (the "Credit Agreement") with a bank group, with an aggregate commitment of $1.25 billion and a maturity date of March 28, 2018 . On May 29, 2015 and August 28, 2015, we amended the Credit Agreement with the bank group (the "Amended Credit Agreement"). The Amended Credit Agreement reduces the aggregate commitment to $750 million and extends the maturity date to May 29, 2020. Under the Amended Credit Agreement, at our request and subject to certain conditions, we can increase the aggregate commitment up to an additional $375 million with the current bank group or new lenders.

K. DEBT (Concluded)

The Amended Credit Agreement provides for an unsecured revolving credit facility available to us and one of our foreign subsidiaries, in U.S. dollars, European euros and certain other currencies. Borrowings under the revolver denominated in euros are limited to $500 million , equivalent. We can also borrow swingline loans up to $75 million and obtain letters of credit of up to $100 million ; any outstanding letters of credit under the Amended Credit Agreement reduce our borrowing capacity. At December 31, 2018 , we had no of outstanding standby letters of credit under the Amended Credit Agreement.

Revolving credit loans bear interest under the Amended Credit Agreement, at our option, at (A) a rate per annum equal to the greater of (i) the prime rate , (ii) the Federal Funds effective rate plus 0.50% and (iii) LIBOR plus 1.0% (the "Alternative Base Rate"); plus an applicable margin based upon our then-applicable corporate credit ratings; or (B) LIBOR plus an applicable margin based upon our then-applicable corporate credit ratings. The foreign currency revolving credit loans bear interest at a rate equal to LIBOR plus an applicable margin based upon our then-applicable corporate credit ratings.

The Amended Credit Agreement contains financial covenants requiring us to maintain (A) a maximum net leverage ratio, as adjusted for certain items, of 4.0 to 1.0, and (B) a minimum interest coverage ratio, as adjusted for certain items, equal to or greater than 2.5 to 1.0.

In order for us to borrow under the Amended Credit Agreement, there must not be any default in our covenants in the Amended Credit Agreement (i.e., in addition to the two financial covenants, principally limitations on subsidiary debt, negative pledge restrictions, legal compliance requirements and maintenance of properties and insurance) and our representations and warranties in the Amended Credit Agreement must be true in all material respects on the date of borrowing (i.e., principally no material adverse change or litigation likely to result in a material adverse change, since December 31, 2014, in each case, no material ERISA or environmental non-compliance, and no material tax deficiency). We were in compliance with all covenants and no borrowings have been made at December 31, 2018 .

At December 31, 2018 , the debt maturities during each of the next five years were as follows: 2019 – $8 million ; 2020 – $203 million ; 2021 – $402 million ; 2022 – $329 million and 2023 – $3 million .

Interest paid was $155 million , $175 million and $198 million in 2018 , 2017 and 2016 , respectively. These amounts exclude $104 million and $40 million of debt extinguishment costs related to the early retirement of debt, which were recorded as interest expense and paid in 2017 and 2016, respectively.

Fair Value of Debt. The fair value of our short-term and long-term fixed-rate debt instruments is based principally upon modeled market prices for the same or similar issues, which are Level 1 inputs. The aggregate estimated market value was approximately $3.0 billion , at December 31, 2018 , which equaled the aggregate carrying value of short-term and long-term debt at that date. The aggregate estimated market value of our short-term and long-term debt at December 31, 2017 was approximately $3.3 billion , compared with the aggregate carrying value of $3.1 billion .

L. STOCK-BASED COMPENSATION

Our 2014 Long Term Stock Incentive Plan (the "2014 Plan") provides for the issuance of stock-based incentives in various forms to our employees and non-employee Directors. At December 31, 2018 , outstanding stock-based incentives were in the form of long-term stock awards, stock options, restricted stock units, phantom stock awards and stock appreciation rights.

Pre-tax compensation expense (income) for these stock-based incentives was as follows, in millions:

	2018	2017	2016
Long-term stock awards	$ 23	$ 24	$ 23
Stock options	3	3	2
Restricted stock units	4	2	—
Phantom stock awards and stock appreciation rights	(3)	9	4
Total	$ 27	$ 38	$ 29

At December 31, 2018 , 14.7 million shares of our common stock were available under the 2014 Plan for the granting of long-term stock awards, stock options and restricted stock units.

L. STOCK-BASED COMPENSATION (Continued)

Long-Term Stock Awards. Long-term stock awards are granted to our key employees and non-employee Directors and do not cause net share dilution, as we repurchase and retire at least an equal number of shares in the open market. We granted 715,380 shares of long-term stock awards during 2018 .

Our long-term stock award activity was as follows, shares in millions:

	2018		2017		2016	
Unvested stock award shares at January 1		3		4		5
Weighted average grant date fair value	$	24	$	20	$	17
Stock award shares granted		1		1		1
Weighted average grant date fair value	$	41	$	34	$	26
Stock award shares vested		2		2		2
Weighted average grant date fair value	$	21	$	18	$	16
Stock award shares forfeited		—		—		—
Weighted average grant date fair value	$	31	$	24	$	20
Unvested stock award shares at December 31		2		3		4
Weighted average grant date fair value	$	30	$	24	$	20

At December 31, 2018 , 2017 and 2016 , there was $46 million , $46 million and $43 million , respectively, of total unrecognized compensation expense related to unvested stock awards; such awards had a weighted average remaining vesting period of three years at December 31, 2018 , 2017 and 2016 .

The total market value (at the vesting date) of stock award shares which vested during 2018 , 2017 and 2016 was $56 million , $45 million and $43 million , respectively.

Stock Options. Stock options are granted to certain key employees. The exercise price equals the market price of our common stock at the grant date. These options generally become exercisable (vest ratably) over five years beginning on the first anniversary from the date of grant and expire no later than 10 years after the grant date.

We granted 400,220 shares of stock options during 2018 with a grant date weighted-average exercise price of approximately $42 per share. During 2018 , 68,927 stock option shares were forfeited (including options that expired unexercised).

L. STOCK-BASED COMPENSATION (Continued)

Our stock option activity was as follows, shares in millions:

	2018	2017	2016
Option shares outstanding, January 1	5	7	12
Weighted average exercise price	$ 16	$ 15	$ 17
Option shares granted	—	—	—
Weighted average exercise price	$ 42	$ 34	$ 26
Option shares exercised	1	2	5
Aggregate intrinsic value on date of exercise **(A)**	$ 55 million	$ 47 million	$ 64 million
Weighted average exercise price	$ 11	$ 15	$ 21
Option shares forfeited	—	—	—
Weighted average exercise price	$ 31	$ —	$ —
Option shares outstanding, December 31	4	5	7
Weighted average exercise price	$ 21	$ 16	$ 15
Weighted average remaining option term (in years)	5	4	4
Option shares vested and expected to vest, December 31	4	5	7
Weighted average exercise price	$ 21	$ 16	$ 15
Aggregate intrinsic value **(A)**	$ 36 million	$ 147 million	$ 118 million
Weighted average remaining option term (in years)	5	4	4
Option shares exercisable (vested), December 31	3	4	6
Weighted average exercise price	$ 16	$ 13	$ 13
Aggregate intrinsic value **(A)**	$ 34 million	$ 123 million	$ 102 million
Weighted average remaining option term (in years)	4	3	3

(A) Aggregate intrinsic value is calculated using our stock price at each respective date, less the exercise price (grant date price) multiplied by the number of shares.

At December 31, 2018 , 2017 and 2016 , there was $8 million , $7 million and $6 million , respectively, of unrecognized compensation expense (using the Black-Scholes option pricing model at the grant date) related to unvested stock options; such options had a weighted average remaining vesting period of three years at December 31, 2018 , 2017 and 2016 .

The weighted average grant date fair value of option shares granted and the assumptions used to estimate those values using a Black-Scholes option pricing model were as follows:

	2018	2017	2016
Weighted average grant date fair value	$ 12.34	$ 9.68	$ 6.43
Risk-free interest rate	2.72%	2.16%	1.41%
Dividend yield	1.02%	1.19%	1.49%
Volatility factor	29.00%	30.00%	29.00%
Expected option life	6 years	6 years	6 years

L. STOCK-BASED COMPENSATION (Concluded)

The following table summarizes information for stock option shares outstanding and exercisable at December 31, 2018 , shares in millions:

	Option Shares Outstanding				Option Shares Exercisable	
	Range of Prices	Number of Shares	Weighted Average Remaining Option Term	Weighted Average Exercise Price	Number of Shares	Weighted Average Exercise Price
$	7 - 13	1	2 years	$11	1	$11
$	17 - 26	2	5 years	$21	2	$20
$	30 - 43	1	9 years	$38	—	$34
$	7 - 43	4	5 years	$21	3	$16

Restricted Stock Units. Under our Long Term Incentive Program ("LTIP Program"), we grant restricted stock units to certain senior executives. These restricted stock units will vest and share awards will be issued at no cost to the employees, subject to our achievement of specified return on invested capital performance goals over a three -year period that have been established by our Organization and Compensation Committee of the Board of Directors ("Compensation Committee") for the performance period and the recipient's continued employment through the share award date. Restricted stock units are granted at a target number; based on our performance, the number of restricted stock units that vest can be adjusted downward to zero and upward to a maximum of 200% . During 2018, we granted 113,260 restricted stock units with a grant date fair value of approximately $42 per share, and 11,600 restricted stock units were forfeited. During 2017, we granted 124,780 restricted stock units with a grant date fair value of approximately $34 per share.

Phantom Stock Awards and Stock Appreciation Rights. Certain non-U.S. employees are granted phantom stock awards and historically have been granted SARs.

We recognized income of $2 million in 2018 and expense of $6 million and $2 million in 2017 and 2016 , respectively, related to phantom stock awards. In 2018 , 2017 and 2016 , we granted 98,140 shares, 104,580 shares and 140,710 shares, respectively, of phantom stock awards with an aggregate fair value of $4 million each year, and paid cash of $6 million in 2018 and $5 million in both 2017 and 2016 to settle phantom stock awards.

We recognized income of $1 million in 2018 and expense of $3 million and $2 million in 2017 and 2016 , respectively, related to SARs. During 2018 , 2017 and 2016 , we did not grant any SARs. We paid cash of $5 million in 2018 and $4 million in both 2017 and 2016 to settle SARs.

Information related to phantom stock awards and SARs was as follows, in millions:

	Phantom Stock Awards				Stock Appreciation Rights			
	At December 31,				At December 31,			
	2018		2017		2018		2017	
Accrued compensation cost liability	$	4	$	12	$	2	$	7
Unrecognized compensation cost	$	2	$	4	$	—	$	—
Equivalent common shares		—		—		—		—

M. EMPLOYEE RETIREMENT PLANS

We sponsor qualified defined-benefit and defined-contribution retirement plans for most of our employees. In addition to our qualified defined-benefit pension plans, we have unfunded non-qualified defined-benefit pension plans covering certain employees, which provide for benefits in addition to those provided by the qualified pension plans. Substantially all salaried employees participate in non-contributory defined-contribution retirement plans, to which payments are determined annually by the Compensation Committee.

Pre-tax expense related to our retirement plans was as follows, in millions:

	2018	2017	2016
Defined-contribution plans	$ 49	$ 55	$ 58
Defined-benefit pension plans	17	29	34
	$ 66	$ 84	$ 92

In addition to the pre-tax expense related to our defined-benefit pension plans, in 2017 we recognized $58 million of actuarial losses, net of tax, that were previously included within accumulated other comprehensive loss due to the disposition of a pension plan in connection with the divestiture of Moores, which was recorded within other income (expense), net.

As of January 1, 2010, substantially all our domestic and foreign qualified and domestic non-qualified defined-benefit pension plans were frozen to future benefit accruals.

Changes in the projected benefit obligation and fair value of plan assets, and the funded status of our defined-benefit pension plans were as follows, in millions:

	2018		2017	
	Qualified	Non-Qualified	Qualified	Non-Qualified
Changes in projected benefit obligation:				
Projected benefit obligation at January 1	$ 961	$ 170	$ 1,055	$ 170
Service cost	3	—	3	—
Interest cost	30	6	36	6
Actuarial (gain) loss, net	(48)	(9)	34	7
Foreign currency exchange	(7)	—	20	—
Benefit payments	(43)	(12)	(43)	(13)
Divestitures	—	—	(144)	—
Projected benefit obligation at December 31	$ 896	$ 155	$ 961	$ 170
Changes in fair value of plan assets:				
Fair value of plan assets at January 1	$ 695	$ —	$ 717	$ —
Actual return on plan assets	(25)	—	77	—
Foreign currency exchange	(4)	—	8	—
Company contributions	52	12	52	13
Expenses, other	(5)	—	(7)	—
Benefit payments	(43)	(12)	(43)	(13)
Divestitures	—	—	(109)	—
Fair value of plan assets at December 31	$ 670	$ —	$ 695	$ —
Funded status at December 31	$ (226)	$ (155)	$ (266)	$ (170)

M. EMPLOYEE RETIREMENT PLANS (Continued)

Amounts in our consolidated balance sheets were as follows, in millions:

	At December 31, 2018		At December 31, 2017	
	Qualified	Non-Qualified	Qualified	Non-Qualified
Other assets	$ 1	$ —	$ 1	$ —
Accrued liabilities	(1)	(13)	(1)	(13)
Other liabilities	(226)	(142)	(266)	(157)
Total net liability	$ (226)	$ (155)	$ (266)	$ (170)

Unrealized loss included in accumulated other comprehensive loss before income taxes was as follows, in millions:

	At December 31, 2018		At December 31, 2017	
	Qualified	Non-Qualified	Qualified	Non-Qualified
Net loss	$ 448	$ 47	$ 442	$ 59
Net prior service cost	3	—	3	—
Total	$ 451	$ 47	$ 445	$ 59

Information for defined-benefit pension plans with an accumulated benefit obligation in excess of plan assets was as follows, in millions:

	At December 31			
	2018		2017	
	Qualified	Non-Qualified	Qualified	Non-Qualified
Projected benefit obligation	$ 882	$ 155	$ 945	$ 170
Accumulated benefit obligation	$ 882	$ 155	$ 945	$ 170
Fair value of plan assets	$ 655	$ —	$ 679	$ —

The projected benefit obligation was in excess of plan assets for all of our qualified defined-benefit pension plans at December 31, 2018 and 2017 which had an accumulated benefit obligation in excess of plan assets.

Net periodic pension cost for our defined-benefit pension plans, with the exception of service cost, is recorded in other income (expense), net, in our consolidated statement of operations. Net periodic pension cost for our defined-benefit pension plans was as follows, in millions:

	2018		2017		2016	
	Qualified	Non-Qualified	Qualified	Non-Qualified	Qualified	Non-Qualified
Service cost	$ 3	$ —	$ 3	$ —	$ 3	$ —
Interest cost	36	6	44	6	49	7
Expected return on plan assets	(48)	—	(46)	—	(44)	—
Recognized net loss	17	3	19	3	17	2
Net periodic pension cost	$ 8	$ 9	$ 20	$ 9	$ 25	$ 9

We expect to recognize $21 million of pre-tax net loss from accumulated other comprehensive loss into net periodic pension cost in 2019 related to our defined-benefit pension plans. For plans in which almost all of the plan's participants are inactive, pre-tax net loss within accumulated other comprehensive loss is amortized using the straight-line method over the remaining life expectancy of the inactive plan participants. For plans which do not have almost all inactive participants, pre-tax net loss within accumulated other comprehensive loss is amortized using the straight-line method over the average remaining service period of the active employees expected to receive benefits from the plan.

M. EMPLOYEE RETIREMENT PLANS (Continued)

Plan Assets. Our qualified defined-benefit pension plan weighted average asset allocation, which is based upon fair value, was as follows:

	2018	2017
Equity securities	34%	55%
Debt securities	49%	28%
Other	17%	17%
Total	100%	100%

For our qualified defined-benefit pension plans, we have adopted accounting guidance that defines fair value, establishes a framework for measuring fair value and prescribes disclosures about fair value measurements. Accounting guidance defines fair value as "the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date."

Following is a description of the valuation methodologies used for assets measured at fair value. There have been no changes in the methodologies used at December 31, 2018 compared to December 31, 2017 .

Common and Preferred Stocks and Short-Term and Other Investments: Valued at the closing price reported on the active market on which the individual securities are traded or based on the active market for similar securities. Certain investments are valued based on net asset value ("NAV"), which approximates fair value. Such basis is determined by referencing the respective fund's underlying assets. There are no unfunded commitments or other restrictions associated with these investments.

Private Equity and Hedge Funds: Valued based on an estimated fair value using either a market approach or an income approach, both of which require a significant degree of judgment. There is no active trading market for these investments and they are generally illiquid. Due to the significant unobservable inputs, the fair value measurements used to estimate fair value are a Level 3 input. Certain investments are valued based on NAV, which approximates fair value. Such basis is determined by referencing the respective fund's underlying assets. There are no unfunded commitments or other restrictions associated with the investments valued at NAV.

Corporate, Government and Other Debt Securities: Valued based on either the closing price reported on the active market on which the individual securities are traded or using pricing models maximizing the use of observable inputs for similar securities. This includes basing value on yields currently available on comparable securities of issuers with similar credit ratings. Certain investments are valued based on NAV, which approximates fair value. Such basis is determined by referencing the respective fund's underlying assets. There are unfunded commitments of $1 million and no other restrictions associated with these investments.

Common Collective Trust Fund: Valued based on an amortized cost basis, which approximates fair value. Such basis is determined by reference to the respective fund's underlying assets, which are primarily cash equivalents. There are no unfunded commitments or other restrictions associated with this fund.

Buy-in Annuity: Valued based on the associated benefit obligation for which the buy-in annuity covers the benefits, which approximates fair value. Such basis is determined based on various assumptions, including the discount rate, long-term rate of return on plan assets and mortality rate.

The methods described above may produce a fair value calculation that may not be indicative of net realizable value or reflective of future fair values. Furthermore, while we believe our valuation methods are appropriate and consistent with other market participants, the use of different methodologies or assumptions to determine the fair value of certain financial instruments could result in a different fair value measurement at the reporting date.

The following tables set forth, by level within the fair value hierarchy, the qualified defined-benefit pension plan assets at fair value as of December 31, 2018 and 2017 , as well as those valued at NAV using the practical expedient, which approximates fair value, in millions.

M. EMPLOYEE RETIREMENT PLANS (Continued)

	At December 31, 2018				
	Level 1	Level 2	Level 3	Valued at NAV	Total
Plan Assets					
Common and Preferred Stocks:					
United States	$ 81	$ —	$ —	$ 21	$ 102
International	37	—	—	89	126
Private Equity and Hedge Funds:					
United States	—	—	32	—	32
International	—	—	27	34	61
Corporate Debt Securities:					
United States	34	—	—	102	136
International	—	1	—	—	1
Government and Other Debt Securities:					
United States	—	2	—	130	132
International	29	33	—	—	62
Common Collective Trust Fund – *United States*	—	4	—	—	4
Buy-in Annuity - *International*	—	11	—	—	11
Short-Term and Other Investments:					
United States	1	—	—	—	1
International	2	—	—	—	2
Total Plan Assets	$ 184	$ 51	$ 59	$ 376	$ 670

	At December 31, 2017				
	Level 1	Level 2	Level 3	Valued at NAV	Total
Plan Assets					
Common and Preferred Stocks:					
United States	$ 144	$ —	$ —	$ 47	$ 191
International	66	—	—	125	191
Private Equity and Hedge Funds:					
United States	—	—	36	—	36
International	—	—	24	35	59
Corporate Debt Securities:					
United States	31	26	—	—	57
International	—	7	—	21	28
Government and Other Debt Securities:					
United States	15	7	—	31	53
International	31	28	—	—	59
Common Collective Trust Fund – United States	—	6	—	—	6
Buy-in Annuity - *International*	—	12	—	—	12
Short-Term and Other Investments:					
United States	2	—	—	—	2
International	—	1	—	—	1
Total Plan Assets	$ 289	$ 87	$ 60	$ 259	$ 695

M. EMPLOYEE RETIREMENT PLANS (Continued)

Changes in the fair value of the qualified defined-benefit pension plan Level 3 assets, were as follows, in millions:

	2018	2017
Fair Value, January 1	$ 60	$ 79
Purchases	6	6
Sales	(12)	(31)
Unrealized gains	5	6
Fair Value, December 31	$ 59	$ 60

Assumptions. Weighted average major assumptions used in accounting for our defined-benefit pension plans were as follows:

	2018	2017	2016
Discount rate for obligations	3.80%	3.30%	3.50%
Expected return on plan assets	7.00%	7.25%	7.25%
Rate of compensation increase	—%	—%	—%
Discount rate for net periodic pension cost	3.30%	3.50%	4.00%

The discount rate for obligations for 2018 , 2017 and 2016 is based upon the expected duration of each defined-benefit pension plan's liabilities matched to the December 31, 2018 , 2017 and 2016 Willis Towers Watson Rate Link Curve. At December 31, 2018 , such rates for our defined-benefit pension plans ranged from 1.5 percent to 4.2 percent , with the most significant portion of the liabilities having a discount rate for obligations of 4.1 percent or higher. At December 31, 2017 , such rates for our defined-benefit pension plans ranged from 1.5 percent to 3.6 percent , with the most significant portion of the liabilities having a discount rate for obligations of 3.4 percent or higher. At December 31, 2016 , such rates for our defined-benefit pension plans ranged from 1.5 percent to 4.0 percent , with the most significant portion of the liabilities having a discount rate for obligations of 3.8 percent or higher. The increase in the weighted average discount rate from 2017 to 2018 is principally the result of higher long-term interest rates in the bond markets. The decrease in the weighted average discount rates from 2016 to 2017 is principally the result of lower long-term interest rates in the bond markets.

For 2018 , we determined the expected long-term rate of return on plan assets of 7.00 percent based upon an analysis of expected and historical rates of return of various asset classes utilizing the current and long-term target asset allocation of the plan assets. For 2017 and 2016, our projected long-term rate of return on plan assets was 7.25 percent . The decrease in our expected long-term rate of return from 2017 to 2018 is due to a shift in our investment objectives as our defined-benefit pension plans became increasingly funded. The projected asset return at December 31, 2018 , 2017 and 2016 considered near term returns, including current market conditions as well as that pension assets are long-term in nature. The actual annual rate of return on our pension plan assets was negative 4.9 percent in 2018 and positive 13.9 percent and 8.3 percent in 2017 and 2016 , respectively. For the 10-year period ended December 31, 2018 , the actual annual rate of return on our pension plan assets was 7.9 percent .

The investment objectives seek to minimize the volatility of the value of our plan assets relative to pension liabilities and to ensure plan assets are sufficient to pay plan benefits. In 2018 , we substantially achieved targeted asset allocation: 35 percent equities, 45 percent fixed-income, and 20 percent alternative investments (such as private equity, commodities and hedge funds).

The asset allocation of the investment portfolio was developed with the objective of achieving our expected rate of return and reducing volatility of asset returns, and considered the freezing of future benefits. The equity portfolios are invested in individual securities or funds that are expected to mirror broad market returns for equity securities. The fixed-income portfolio is invested in corporate bonds, bond index funds and U.S. Treasury securities. It is expected that the alternative investments would have a higher rate of return than the targeted overall long-term return of 7.00 percent . However, these investments are subject to greater volatility, due to their nature, than a portfolio of equities and fixed-income investments, and would be less liquid than financial instruments that trade on public markets.

M. EMPLOYEE RETIREMENT PLANS (Concluded)

The fair value of our plan assets is subject to risk including significant concentrations of risk in our plan assets related to equity, interest rate and operating risk. In order to ensure plan assets are sufficient to pay benefits, a portion of plan assets is allocated to equity investments that are expected, over time, to earn higher returns with more volatility than fixed-income investments which more closely match pension liabilities. Within equity, risk is mitigated by targeting a portfolio that is broadly diversified by geography, market capitalization, manager mandate size, investment style and process.

In order to minimize asset volatility relative to the liabilities, a portion of plan assets are allocated to fixed-income investments that are exposed to interest rate risk. Rate increases generally will result in a decline in fixed-income assets, while reducing the present value of the liabilities. Conversely, rate decreases will increase fixed income assets, partially offsetting the related increase in the liabilities.

Potential events or circumstances that could have a negative effect on estimated fair value include the risks of inadequate diversification and other operating risks. To mitigate these risks, investments are diversified across and within asset classes in support of investment objectives. Policies and practices to address operating risks include ongoing manager oversight, plan and asset class investment guidelines and instructions that are communicated to managers, and periodic compliance and audit reviews to ensure adherence to these policies. In addition, we periodically seek the input of our independent advisor to ensure the investment policy is appropriate.

Other. We sponsor certain post-retirement benefit plans that provide medical, dental and life insurance coverage for eligible retirees and dependents based upon age and length of service. Substantially all of these plans were frozen as of January 1, 2010. The aggregate present value of the unfunded accumulated post-retirement benefit obligation was $9 million and $10 million at December 31, 2018 and 2017 , respectively.

Cash Flows. At December 31, 2018 , we expect to contribute approximately $50 million to our domestic qualified defined-benefit pension plans in 2019 , which will exceed ERISA requirements. We also expect to contribute approximately $3 million and $13 million in 2019 to our foreign and non-qualified (domestic) defined-benefit pension plans, respectively.

At December 31, 2018 , the benefits expected to be paid in each of the next five years, and in aggregate for the five years thereafter, relating to our defined-benefit pension plans, were as follows, in millions:

	Qualified Plans	Non-Qualified Plans
2019	$ 48	$ 13
2020	$ 49	$ 13
2021	$ 50	$ 12
2022	$ 51	$ 12
2023	$ 52	$ 12
2024 - 2028	$ 263	$ 55

N. SHAREHOLDERS' EQUITY

In May 2017, our Board of Directors authorized the repurchase, for retirement, of up to $1.5 billion of shares of our common stock in open-market transactions or otherwise. During 2018 , we repurchased and retired 18.6 million shares of our common stock (including 0.7 million shares to offset the dilutive impact of long-term stock awards granted in 2018), for cash aggregating $654 million . At December 31, 2018, we had $636 million remaining under the 2017 authorization. During 2017 , we repurchased and retired 9.2 million shares of our common stock (including 0.9 million shares to offset the dilutive impact of long-term stock awards granted in 2017) for cash aggregating $331 million . During 2016 , we repurchased and retired 14.9 million shares of our common stock (including 1.1 million shares to offset the dilutive impact of long-term stock awards granted in 2016) for cash aggregating $459 million .

On the basis of amounts paid (declared), cash dividends per common share were $0.435 ($0.450) in 2018 , $0.405 ($0.410) in 2017 and $0.385 ($0.390) in 2016 .

N. SHAREHOLDERS' EQUITY (Concluded)

Accumulated Other Comprehensive Loss. The components of accumulated other comprehensive loss attributable to Masco Corporation were as follows, in millions:

	At December 31	
	2018	2017
Cumulative translation adjustments, net	$ 266	$ 282
Unrealized loss on interest rate swaps, net	(10)	(12)
Unrecognized net loss and prior service cost, net	(383)	(335)
Accumulated other comprehensive loss	$ (127)	$ (65)

The cumulative translation adjustment, net, is reported net of income tax benefit of $2 million at December 31, 2018 . The unrealized loss on interest rate swaps, net, is reported net of income tax expense of $4 million at both December 31, 2018 and 2017 . The unrecognized net loss and prior service cost, net, is reported net of income tax benefit of $98 million and $154 million at December 31, 2018 and 2017 , respectively.

O. RECLASSIFICATIONS FROM OTHER COMPREHENSIVE INCOME (LOSS)

The reclassifications from accumulated other comprehensive income (loss) to the consolidated statements of operations were as follows, in millions:

Accumulated Other Comprehensive Income (Loss)	2018	2017	2016	Statement of Operations Line Item
Amortization of defined benefit pension and other postretirement benefits:				
Actuarial losses, net	$ 20	$ 86	$ 19	Other income (expense), net
Tax (benefit)	(5)	(13)	(7)	
Net of tax **(A)**	$ 15	$ 73	$ 12	
Interest rate swaps	$ 2	$ 4	$ 2	Interest expense
Tax (benefit)	—	(1)	(1)	
Net of tax	$ 2	$ 3	$ 1	
Available-for-sale securities	$ —	$ —	$ (3)	Other, net
Tax expense **(B)**	—	—	15	
Net of tax	$ —	$ —	$ 12	

(A) The 2017 amortization of defined benefit pension and other postretirement benefits includes $58 million , net of tax, due to the disposition of a pension plan in connection with the divestiture of Moores.

(B) The tax expense related to the available-for-sale securities in 2016 includes $14 million related to the disproportionate tax effect that we recognized as a result of the redemption of all of our auction rate securities. Refer to Note R to the consolidated financial statements for additional information.

In addition to the amounts reclassified above, upon adopting ASU 2018-02 in the first quarter of 2018, we reclassified $59 million of the disproportionate tax benefit relating to various defined-benefit plans from accumulated other comprehensive loss to retained deficit. Refer to Note A for additional information.

P. SEGMENT INFORMATION

Our reportable segments are as follows:

Plumbing Products – principally includes faucets, plumbing fittings and valves, showerheads and hand showers, bathtubs and shower enclosures, toilets, spas, exercise pools and water handling systems.

Decorative Architectural Products – principally includes paints and other coating products, lighting fixtures and LED lighting systems, and cabinet and other hardware.

Cabinetry Products – principally includes assembled kitchen and bath cabinets, home office workstations, entertainment centers and storage products.

Windows and Other Specialty Products – principally includes windows, window frame components, patio doors, and, until the divestiture of Arrow in 2017, staple gun tackers, staples and other fastening tools.

The above products are sold to the residential repair and remodel and new home construction markets through home center retailers, online retailers, mass merchandisers, hardware stores, homebuilders, distributors and other outlets for consumers and contractors and direct to the customer.

Our operations are principally located in North America and Europe. Our country of domicile is the United States of America.

Corporate assets consist primarily of real property, equipment, cash and cash investments and other investments.

Our segments are based upon similarities in products and represent the aggregation of operating units, for which financial information is regularly evaluated by our corporate operating executive in determining resource allocation and assessing performance, and is periodically reviewed by the Board of Directors. Accounting policies for the segments are the same as those for us. We primarily evaluate performance based upon operating profit (loss) and, other than general corporate expense, allocate specific corporate overhead to each segment.

Information by segment and geographic area was as follows, in millions:

	Net Sales (1)(2)(3)(4)			Operating Profit (Loss) (5)			Assets at December 31 (6)		
	2018	2017	2016	2018	2017	2016	2018	2017	2016
Our operations by segment were:									
Plumbing Products	$ 3,998	$ 3,732	$ 3,529	$ 715	$ 702	$ 654	$ 2,253	$ 2,298	$ 2,028
Decorative Architectural Products	2,656	2,206	2,092	456	438	433	1,534	965	900
Cabinetry Products	950	934	970	86	92	97	537	526	539
Windows and Other Specialty Products	755	770	770	34	54	(3)	660	677	746
Total	$ 8,359	$ 7,642	$ 7,361	$ 1,291	$ 1,286	$ 1,181	$ 4,984	$ 4,466	$ 4,213
Our operations by geographic area were:									
North America	$ 6,763	$ 6,067	$ 5,838	$ 1,094	$ 1,080	$ 973	$ 3,832	$ 3,236	$ 3,029
International, principally Europe	1,596	1,575	1,523	197	206	208	1,152	1,230	1,184
Total, as above	$ 8,359	$ 7,642	$ 7,361	1,291	1,286	1,181	4,984	4,466	4,213
General corporate expense, net **(6)**				(80)	(92)	(94)			
Operating profit, as reported				1,211	1,194	1,087			
Other income (expense), net				(169)	(310)	(255)			
Income before income taxes				$ 1,042	$ 884	$ 832			
Corporate assets							409	1,068	951
Total assets							$ 5,393	$ 5,534	$ 5,164

P. SEGMENT INFORMATION (Concluded)

	Property Additions (7)			Depreciation and Amortization		
	2018	2017	2016	2018	2017	2016
Our operations by segment were:						
Plumbing Products	$ 120	$ 115	$ 110	$ 77	$ 63	$ 57
Decorative Architectural Products	54	19	22	35	16	16
Cabinetry Products	18	14	8	13	14	21
Windows and Other Specialty Products	20	13	30	23	21	21
	212	161	170	148	114	115
Unallocated amounts, principally related to corporate assets	7	12	10	8	13	19
Total	$ 219	$ 173	$ 180	$ 156	$ 127	$ 134

(1) Included in net sales were export sales from the U.S. of $259 million , $232 million and $226 million in 2018 , 2017 and 2016 , respectively.

(2) Excluded from net sales were intra-company sales between segments of less than one percent in 2018 , 2017 and 2016 .

(3) Included in net sales were sales to one customer of $2,670 million , $2,535 million and $2,480 million in 2018 , 2017 and 2016 , respectively. Such net sales were included in each of our segments.

(4) Net sales from our operations in the U.S. were $6,587 million , $5,819 million and $5,609 million in 2018 , 2017 and 2016 , respectively.

(5) General corporate expense, net included those expenses not specifically attributable to our segments.

(6) Long-lived assets of our operations in the U.S. and Europe were $1,928 million and $492 million , $1,582 million and $482 million , and $1,508 million and $417 million at December 31, 2018 , 2017 and 2016 , respectively.

(7) Property additions exclude amounts paid for long-lived assets as part of acquisitions. Refer to Note C for further information.

Q. OTHER INCOME (EXPENSE), NET

Other, net, which is included in other income (expense), net, was as follows, in millions:

	2018	2017	2016
Loss on sales of businesses, net **(A)**	$ —	$ (13)	$ —
Income from cash and cash investments and short-term bank deposits	5	4	4
Equity investment income, net	3	1	2
Realized gains from auction rate securities	—	—	3
Realized gains from private equity funds	1	3	5
Impairment of private equity funds	—	(2)	—
Foreign currency transaction losses	(8)	—	(3)
Net periodic pension and post-retirement benefit cost	(14)	(26)	(32)
Other items, net	—	1	(5)
Total other, net	$ (13)	$ (32)	$ (26)

(A) Included in loss on sales of businesses, net for 2017 is a loss of $64 million related to the divestiture of Moores and a gain of $51 million related to the divestiture of Arrow.

R. INCOME TAXES

(In Millions)	2018	2017	2016
Income from before income taxes:			
U.S.	$ 821	$ 730	$ 616
Foreign	221	154	216
	$ 1,042	$ 884	$ 832
Income tax expense:			
Currently payable:			
U.S. Federal	$ 144	$ 193	$ 73
State and local	36	30	24
Foreign	74	68	69
Deferred:			
U.S. Federal	12	12	140
State and local	—	—	2
Foreign	(8)	1	(12)
	$ 258	$ 304	$ 296
Deferred tax assets at December 31:			
Receivables	$ 3	$ 4	
Inventories	16	13	
Other assets, including stock-based compensation	23	34	
Accrued liabilities	58	49	
Long-term liabilities	149	169	
Net operating loss carryforward	51	53	
Capital loss carryforward	—	1	
Tax credit carryforward	9	8	
	309	331	
Valuation allowance	(43)	(47)	
	266	284	
Deferred tax liabilities at December 31:			
Property and equipment	87	98	
Intangibles	139	139	
Investment in foreign subsidiaries	9	7	
Other	14	21	
	249	265	
Net deferred tax asset at December 31	$ 17	$ 19	

The net deferred tax asset consisted of net deferred tax assets (included in other assets) of $42 million and $45 million , and net deferred tax liabilities (included in other liabilities) of $25 million and $26 million , at December 31, 2018 and 2017 , respectively.

We continue to maintain a valuation allowance on certain state and foreign deferred tax assets as of December 31, 2018 . Should we determine that we would not be able to realize our remaining deferred tax assets, or the deferred tax assets that currently have a valuation allowance become realizable in these jurisdictions in the future, an adjustment to the valuation allowance would be recorded in the period such determination is made.

R. INCOME TAXES (Continued)

The current portion of the state and local income tax includes an $8 million , $5 million and $8 million tax benefit from the reversal of an accrual for uncertain tax positions resulting primarily from the expiration of applicable statutes of limitations in 2018 , 2017 and 2016 , respectively. The deferred portion of the state and local taxes includes a $1 million tax benefit in both 2018 and 2017 and a $5 million tax expense in 2016 , resulting from changes in valuation allowances against state and local deferred tax assets. The deferred portion of the foreign taxes includes a $2 million tax benefit in 2018 and $6 million tax expense in 2016 , from a change in the valuation allowance against foreign deferred tax assets.

Due to the enactment of the 2017 Tax Act on December 22, 2017, we recorded a $20 million tax benefit from the elimination of a deferred tax liability previously recorded on undistributed foreign earnings as a result of the change from a worldwide to a territorial system of taxation. This tax benefit was offset by a $3 million tax charge resulting from the re-measurement of our remaining net deferred tax assets due to a reduction in the U.S. Federal corporate tax rate from 35 percent to 21 percent .

In addition, the 2017 Tax Act requires a mandatory deemed repatriation of undistributed foreign earnings resulting in a toll charge of 15.5 percent on earnings related to cash and liquid assets and 8 percent on earnings for non-liquid assets. Due to the ability to offset positive foreign earnings with existing foreign deficits, we do not anticipate paying any toll charge related to our undistributed foreign earnings .

The $64 million loss from the divestiture of Moores that was recorded in the fourth quarter of 2017 provided no tax benefit.

We created a $14 million disproportionate tax effect in prior years as the result of allocating a deferred tax charge to other comprehensive income (loss) on the unrealized gain of certain available-for-sale securities that was later reversed through income tax expense in the consolidated results of operations by a valuation allowance adjustment, followed by the disposition of the securities while in a full valuation allowance position. Such disproportionate tax effect has remained in accumulated other comprehensive loss until such time as we cease to have an available-for-sale securities portfolio. In the fourth quarter of 2016 as a result of our final auction rate securities being called by our counterparty and redeemed , the disproportionate tax effect was eliminated by recording a $14 million charge to income tax expense included in the consolidated results of operations that was offset by a corresponding tax benefit included in other comprehensive income (loss).

In the fourth quarter of 2016, we recorded a $13 million tax benefit from the recognition of a deferred tax asset on certain German net operating losses primarily resulting from a return to sustainable profitability.

Our capital allocation strategy includes reinvesting in our business, balancing share repurchases with potential acquisitions and maintaining an appropriate dividend. In order to provide greater flexibility in the execution of our capital allocation strategy, we may repatriate earnings from certain foreign subsidiaries. Our deferred tax balance on investment in foreign subsidiaries reflects the impact of all taxable temporary differences, including those related to substantially all undistributed foreign earnings, except those that are legally restricted. As a result of the enactment of the 2017 Tax Act, our deferred tax balance on investment in foreign subsidiaries consists primarily of foreign withholding taxes.

Of the $60 million and $61 million deferred tax asset related to the net operating loss and tax credit carryforwards at December 31, 2018 and 2017 , respectively, $32 million and $33 million , respectively, will expire between 2021 and 2036 and $28 million has no expiration.

R. INCOME TAXES (Continued)

A reconciliation of the U.S. Federal statutory tax rate to the income tax expense on income before income taxes was as follows:

	2018	2017	2016
U.S. Federal statutory tax rate	21 %	35 %	35 %
State and local taxes, net of U.S. Federal tax benefit	3	2	2
Higher (lower) taxes on foreign earnings	2	(1)	(2)
U.S. and foreign taxes on distributed and undistributed foreign earnings	1	1	1
Domestic production deduction	—	(2)	(1)
Stock-based compensation	(2)	(2)	—
Business divestitures with no tax impact	—	4	—
Change in U.S. Federal tax law	—	(2)	—
Other, net	—	(1)	1
Effective tax rate	25 %	34 %	36 %

Income taxes paid were $231 million , $258 million and $190 million in 2018 , 2017 and 2016 , respectively.

A reconciliation of the beginning and ending liability for uncertain tax positions, including related interest and penalties, is as follows, in millions:

	Uncertain Tax Positions	Interest and Penalties	Total
Balance at January 1, 2017	$ 46	$ 9	$ 55
Current year tax positions:			
Additions	13	—	13
Prior year tax positions:			
Additions	3	—	3
Reductions	(1)	—	(1)
Lapse of applicable statute of limitations	(7)	—	(7)
Interest and penalties recognized in income tax expense	—	(1)	(1)
Balance at December 31, 2017	$ 54	$ 8	$ 62
Current year tax positions:			
Additions	13	—	13
Reductions	(1)	—	(1)
Prior year tax positions:			
Additions	1	—	1
Reductions	(1)	—	(1)
Lapse of applicable statute of limitations	(8)	—	(8)
Interest and penalties recognized in income tax expense	—	1	1
Balance at December 31, 2018	$ 58	$ 9	$ 67

If recognized, $46 million and $43 million of the liability for uncertain tax positions at December 31, 2018 and 2017 , respectively, net of any U.S. Federal tax benefit, would impact our effective tax rate.

Of the $67 million and $62 million total liability for uncertain tax positions (including related interest and penalties) at December 31, 2018 and 2017 , respectively, $64 million and $59 million are recorded in other liabilities, respectively, and $3 million is recorded as a net offset to other assets at both December 31, 2018 and 2017 .

R. INCOME TAXES (Concluded)

We file income tax returns in the U.S. Federal jurisdiction, and various local, state and foreign jurisdictions. We continue to participate in the Compliance Assurance Process ("CAP"). CAP is a real-time audit of the U.S. Federal income tax return that allows the Internal Revenue Service ("IRS"), working in conjunction with us, to determine tax return compliance with the U.S. Federal tax law prior to filing the return. This program provides us with greater certainty about our tax liability for a given year within months, rather than years, of filing our annual tax return and greatly reduces the need for recording a liability for U.S. Federal uncertain tax positions. The IRS has completed their examination of our consolidated U.S. Federal tax returns through 2017. With few exceptions, we are no longer subject to state or foreign income tax examinations on filed returns for years before 2006.

As a result of tax audit closings, settlements and the expiration of applicable statutes of limitations in various jurisdictions within the next 12 months, we anticipate that it is reasonably possible the liability for uncertain tax positions could be reduced by approximately $9 million .

S. INCOME PER COMMON SHARE

Reconciliations of the numerators and denominators used in the computations of basic and diluted earnings per common share were as follows, in millions:

	2018	2017	2016
Numerator (basic and diluted):			
Net income	$ 734	$ 533	$ 493
Less: Allocation to unvested restricted stock awards	7	5	6
Net income available to common shareholders	$ 727	$ 528	$ 487
Denominator:			
Basic common shares (based upon weighted average)	305	314	326
Add: Stock option dilution	2	4	4
Diluted common shares	307	318	330

We follow accounting guidance regarding determining whether instruments granted in share-based payment transactions are participating securities. This accounting guidance clarifies that share-based payment awards that entitle their holders to receive non-forfeitable dividends prior to vesting should be considered participating securities. We have granted restricted stock awards that contain non-forfeitable rights to dividends on unvested shares; such unvested restricted stock awards are considered participating securities. As participating securities, the unvested shares are required to be included in the calculation of our basic income per common share, using the "two-class method." The two-class method of computing income per common share is an allocation method that calculates income per share for each class of common stock and participating security according to dividends declared and participation rights in undistributed earnings. For the years ended December 31, 2018 , 2017 and 2016 , we allocated dividends and undistributed earnings to the participating securities.

Additionally, 710,000 , 354,000 and 338,000 common shares for 2018 , 2017 and 2016 , respectively, related to stock options and 20,000 common shares for 2018 related to restricted stock units were excluded from the computation of diluted income per common share due to their antidilutive effect.

Common shares outstanding included on our balance sheet and for the calculation of income per common share do not include unvested stock awards (2 million common shares and 3 million common shares at December 31, 2018 and 2017 , respectively); shares outstanding for legal requirements included all common shares that have voting rights (including unvested stock awards).

T. OTHER COMMITMENTS AND CONTINGENCIES

Litigation. We are involved in claims and litigation, including class actions and regulatory proceedings, which arise in the ordinary course of our business. The types of matters may include, among others: competition, product liability, employment, warranty, advertising, contract, personal injury, environmental, intellectual property, and insurance coverage. We believe we have adequate defenses in these matters and that the likelihood that the outcome of these matters would have a material adverse effect on us is remote. However, there is no assurance that we will prevail in these matters, and we could, in the future, incur judgments, enter into settlements of claims or revise our expectations regarding the outcome of these matters, which could materially impact our results of operations.

Warranty. Changes in our warranty liability were as follows, in millions:

	2018	2017
Balance at January 1	$ 205	$ 192
Accruals for warranties issued during the year	78	63
Accruals related to pre-existing warranties	(1)	9
Settlements made (in cash or kind) during the year	(65)	(59)
Balance at December 31	$ 217	$ 205

Other Matters. We enter into contracts, which include reasonable and customary indemnifications that are standard for the industries in which we operate. Such indemnifications include claims made against builders by homeowners for issues relating to our products and workmanship. In conjunction with divestitures and other transactions, we occasionally provide reasonable and customary indemnifications. We have never had to pay a material amount related to these indemnifications, and we evaluate the probability that amounts may be incurred and record an estimated liability when it is probable and reasonably estimable.

U. INTERIM FINANCIAL INFORMATION (UNAUDITED)

Our quarterly results attributable to Masco Corporation were as follows:

		Quarters Ended (In Millions, Except Per Common Share Data)			
	Total Year	December 31	September 30	June 30	March 31
2018					
Net sales	$ 8,359	$ 2,041	$ 2,101	$ 2,297	$ 1,920
Gross profit	$ 2,689	$ 653	$ 667	$ 750	$ 619
Net income	$ 734	$ 194	$ 180	$ 211	$ 149
Income per common share:					
Basic:					
Net income	$ 2.38	$ 0.65	$ 0.59	$ 0.69	$ 0.48
Diluted:					
Net income	$ 2.37	$ 0.64	$ 0.58	$ 0.68	$ 0.47
2017					
Net sales	$ 7,642	$ 1,853	$ 1,945	$ 2,066	$ 1,778
Gross profit	$ 2,612	$ 604	$ 657	$ 746	$ 605
Net income	$ 533	$ 80	$ 152	$ 163	$ 138
Income per common share:					
Basic:					
Net income	$ 1.68	$ 0.25	$ 0.48	$ 0.51	$ 0.43
Diluted:					
Net income	$ 1.66	$ 0.25	$ 0.48	$ 0.51	$ 0.43

Income per common share amounts for the four quarters of December 31, 2018 and 2017 may not total to the income per common share amounts for the years ended December 31, 2018 and 2017 due to the allocation of income to participating securities.

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

Not applicable.

Item 9A. Controls and Procedures.

a. Evaluation of Disclosure Controls and Procedures.

The Company's Principal Executive Officer and Principal Financial Officer have concluded, based on an evaluation of the Company's disclosure controls and procedures (as defined in the Securities Exchange Act of 1934 Rules 13a-15(e) or 15d-15(e)) as required by paragraph (b) of Exchange Act Rules 13a-15 or 15d-15 that, as of December 31, 2018 , the Company's disclosure controls and procedures were effective.

b. Management's Report on Internal Control over Financial Reporting.

Management's report on the Company's internal control over financial reporting (as such term is defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act) is included in this Report under Item 8. Financial Statements and Supplementary Data, under the heading, "Management's Report on Internal Control over Financial Reporting" and is incorporated herein by reference. The report of our independent registered public accounting firm is also included under Item 8, under the heading, "Report of Independent Registered Public Accounting Firm" and is incorporated herein by reference.

c. Changes in Internal Control over Financial Reporting.

In connection with the evaluation of the Company's internal control over financial reporting that occurred during the quarter ended December 31, 2018 , which is required under the Securities Exchange Act of 1934 by paragraph (d) of Exchange Rules 13a-15 or 15d-15 (as defined in paragraph (f) of Rule 13a-15), management determined that there was no change that materially affected or is reasonably likely to materially affect internal control over financial reporting.

Item 9B. Other Information.

Not applicable.

PART III

Item 10. Directors, Executive Officers and Corporate Governance.

Our Code of Business Ethics applies to all employees, officers and directors including our Principal Executive Officer, Principal Financial Officer and Principal Accounting Officer, and is posted on our website at www.masco.com. Amendments to or waivers of our Code of Business Ethics for directors and executive officers, if any, will be posted on our website.

Other information required by this Item will be contained in our definitive Proxy Statement for the 2019 Annual Meeting of Stockholders, to be filed before May 1, 2019 , and such information is incorporated herein by reference.

Item 11. Executive Compensation.

Information required by this Item will be contained in our definitive Proxy Statement for the 2019 Annual Meeting of Stockholders, to be filed before May 1, 2019 and such information is incorporated herein by reference.

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

Equity Compensation Plan Information

We grant equity under our 2014 Long Term Stock Incentive Plan (the "2014 Plan"). The following table sets forth information as of December 31, 2018 concerning the 2014 Plan, which was approved by our stockholders. We do not have any equity compensation plans that have not been approved by our stockholders.

Plan Category	Number of Securities to be Issued Upon Exercise of Outstanding Options, Warrants and Rights	Weighted-Average Exercise Price of Outstanding Options, Warrants and Rights	Number of Securities Remaining Available for Future Issuance Under Equity Compensation Plans (Excluding Securities Reflected in the First Column)
Equity compensation plans approved by stockholders	3,740,874	$ 21.25	14,733,746

The remaining information required by this Item will be contained in our definitive Proxy Statement for our 2019 Annual Meeting of Stockholders, to be filed before May 1, 2019 , and such information is incorporated herein by reference.

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

Information required by this Item will be contained in our definitive Proxy Statement for the 2019 Annual Meeting of Stockholders, to be filed before May 1, 2019 , and such information is incorporated herein by reference.

Item 14. Principal Accountant Fees and Services.

Information required by this Item will be contained in our definitive Proxy Statement for the 2019 Annual Meeting of Stockholders, to be filed before May 1, 2019 , and such information is incorporated herein by reference.

PART IV

Item 15. Exhibits and Financial Statement Schedules.

a. Listing of Documents.

(1) *Financial Statements.* Our consolidated financial statements included in Item 8 hereof, as required at December 31, 2018 and 2017 , and for the years ended December 31, 2018 , 2017 and 2016 , consist of the following:

(2) *Financial Statement Schedule.*

a. Our Financial Statement Schedule appended hereto, as required for the years ended December 31, 2018 , 2017 and 2016 , consists of the following:

(3) *Exhibits.*

Exhibit No.	Exhibit Description	Incorporated By Reference			Filed Herewith
		Form	Exhibit	Filing Date	
3.a	Restated Certificate of Incorporation of Masco Corporation.	2015 10-K	3.i	02/12/2016	
3.b	Bylaws of Masco Corporation, as Amended and Restated May 8, 2012.	2016 10-K	3.b	02/09/2017	
4.a	Indenture dated as of December 1, 1982 between Masco Corporation and The Bank of New York Mellon Trust Company, N.A., as successor trustee under agreement originally with Morgan Guaranty Trust Company of New York, as Trustee, and Supplemental Indenture thereto dated as of July 26, 1994; and Directors' resolutions establishing Masco Corporation's:	2016 10-K	4.a	02/09/2017	
4.a.i	7-3/4% Debentures Due August 1, 2029.	2014 10-K	4.a.i(ii)	02/13/2015	

Exhibit No.	Exhibit Description	Incorporated By Reference Form	Exhibit	Filing Date	Filed Herewith
4.b	Indenture dated as of February 12, 2001 between Masco Corporation and The Bank of New York Mellon Trust Company, N.A., as successor trustee under agreement originally with Bank One Trust Company, National Association, as Trustee, and Supplemental Indenture thereto dated as of November 30, 2006; and Directors' Resolutions establishing Masco Corporation's:	2016 10-K	4.b	02/09/2017	
4.b.i	6-1/2% Notes Due August 15, 2032;	2017 10-K	4.b.i	02/08/2018	
4.b.ii	7.125% Notes Due March 15, 2020;	2015 10-K	4.b.i(iv)	02/12/2016	
4.b.iii	5.950% Notes Due March 15, 2022;	2016 10-K	4.b(iii)	02/09/2017	
4.b.iv	4.450% Notes Due April 1, 2025;	8-K	4.1	03/23/2015	
4.b.v	3.500% Notes Due April 1, 2021;	8-K	4.1	03/16/2016	
4.b.vi	4.375% Notes Due April 1, 2026;	8-K	4.2	03/16/2016	
4.b.vii	3.500% Notes Due November 15, 2027; and	8-K	4.1	06/15/2017	
4.b.viii	4.500% Notes Due May 15, 2047.	8-K	4.2	06/15/2017	
Note 1:	Other instruments, notes or extracts from agreements defining the rights of holders of long-term debt of Masco Corporation or its subsidiaries have not been filed since (i) in each case the total amount of long-term debt permitted thereunder does not exceed 10 percent of Masco Corporation's consolidated assets, and (ii) such instruments, notes and extracts will be furnished by Masco Corporation to the Securities and Exchange Commission upon request.				
10.a	Credit Agreement dated as of March 28, 2013 by and among Masco Corporation and Masco Europe S. à r.l. as borrowers, the lenders party thereto, JPMorgan Chase Bank, N.A., as Administrative Agent, Citibank, N.A., as Syndication Agent, and Royal Bank of Canada, Deutsche Bank Securities, Inc., PNC Bank, National Association, and SunTrust Bank as Co-Documentation Agents, as amended by Amendment No. 1 dated as of May 29, 2015, and Amendment No. 2 dated as of August 28, 2015.	2017 10-K	10.a	02/08/2018	
Note 2:	Exhibits 10.b through 10.m constitute the management contracts and executive compensatory plans or arrangements in which certain of the Directors and executive officers of the Company participate.				
10.b	Masco Corporation 2005 Long Term Stock Incentive Plan (Amended and Restated May 11, 2010):	2015 10-K	10.b.i	02/12/2016	
	Form of Restricted Stock Award Agreements:				
10.b.i	for awards on or after January 1, 2013; and	2017 10-K	10.b.i	02/08/2018	
10.b.ii	for awards prior to 2012.	2015 10-K	10.b.i(i)(C)	02/12/2016	
	Form of Stock Option Grant Agreements:				
10.b.iii	for grants on or after January 1, 2013;	2017 10-K	10.b.iii	02/08/2018	
10.b.iv	for grants during 2012; and	2017 10-K	10.b.iv	02/08/2018	
10.b.v	for grants prior to 2012.	2015 10-K	10.b.i(ii)(C)	02/12/2016	
10.b.vi	Non-Employee Directors Equity Program under Masco Corporation's 2005 Long Term Stock Incentive Plan (for awards prior to 2010):	2017 10-K	10.b.viii	02/08/2018	

Exhibit No.	Exhibit Description	Incorporated By Reference			Filed Herewith
		Form	Exhibit	Filing Date	
10.b.vii	Form of Stock Option Grant Agreement for Non-Employee Directors.	2017 10-K	10.b.ix	02/08/2018	
10.c	Masco Corporation 2014 Long Term Stock Incentive Plan (Amended and Restated May 9, 2016):	10-Q	10.a	07/26/2016	
	Form of Restricted Stock Award Agreements:				
10.c.i	for awards prior to July 1, 2018; and	8-K	10.b	05/06/2014	
10.c.ii	for awards on or after July 1, 2018.				X
	Form of Stock Option Grant Agreements				
10.c.iii	for grants prior to July 1, 2018; and	8-K	10.d	05/06/2014	
10.c.iv	for grants on or after July 1, 2018.				X
10.c.v	Form of Long Term Incentive Program Award				X
10.c.vi	Non-Employee Directors Equity Program under Masco Corporation's 2014 Long Term Stock Incentive Plan (Amended and Restated May 9, 2016):	10-Q	10.b	07/26/2016	
10.c.vii	Form of Restricted Stock Award Agreement for Non-Employee Directors for awards prior to July 1, 2018; and	8-K	10.c	05/06/2014	
10.c.viii	Form of Restricted Stock Award Agreement for Non-Employee Directors for awards after July 1, 2018.				X
10.d	Form of award letter for the Masco Corporation Long-Term Cash Incentive Program.	2017 10-K	10.d	02/08/2018	
10.e	Form of Masco Corporation Supplemental Executive Retirement and Disability Plan and amendments thereto for Richard A. Manoogian.	2015 10-K	10.d.i(i)	02/12/2016	
10.f	Form of Masco Corporation Supplemental Executive Retirement and Disability Plan and amendments thereto (includes amendment freezing benefit accruals) for John G. Sznewajs.	2015 10-K	10.d.i(ii)	02/12/2016	
10.g	Other compensatory arrangements for executive officers.	2016 10-K	10.f	02/09/2017	
10.h	Compensation of Non-Employee Directors.				X
10.i	Masco Corporation Retirement Benefit Restoration Plan effective January 1, 1995 (as amended and restated December 22, 2010), and amendments thereto effective February 6, 2012 and January 1, 2014.	2016 10-K	10.i	02/09/2017	
10.j.i	Letter Agreement dated June 29, 2009 between Richard A. Manoogian and Masco Corporation.	2014 10-K	10.k.i	02/13/2015	
10.j.ii	Aircraft Time Sharing Agreement dated October 1, 2012 between Richard A. Manoogian and Masco Corporation.	2017 10-K	10.j.ii	02/08/2018	
10.k	Employment Offer Letter dated October 23, 2014 between Christopher Kastner and Masco Corporation.	2014 10-K	10.m	02/13/2015	
10.l	Employment Offer Letter dated November 1, 2014 between Amit Bhargava and Masco Corporation.	2014 10-K	10.n	02/13/2015	

Exhibit No.	Exhibit Description	Incorporated By Reference			Filed Herewith
		Form	Exhibit	Filing Date	
10.m	Employment Offer Letter dated July 27, 2018 between Scott McDowell and Masco Corporation.	10-Q	10	10/30/2018	
21	List of Subsidiaries.				X
23	Consent of Independent Registered Public Accounting Firm relating to Masco Corporation's Consolidated Financial Statements and Financial Statement Schedule.				X
31.a	Certification by Chief Executive Officer required by Rule 13a-14(a)/15d-14(a).				X
31.b	Certification by Chief Financial Officer required by Rule 13a-14(a)/15d-14(a).				X
32	Certifications required by Rule 13a-14(b) or Rule 15d-14(b) and Section 1350 of Chapter 63 of Title 18 of the United States Code.				X
101	Interactive Date File.				X

The Company will furnish to its stockholders a copy of any of the above exhibits not included herein upon the written request of such stockholder and the payment to the Company of the reasonable expenses incurred by the Company in furnishing such copy or copies.

Item 16. Form 10-K Summary

The optional summary in Item 16 has not been included in this Form 10-K.

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.

MASCO CORPORATION

By: /s/ John G. Sznewajs

John G. Sznewajs
Vice President, Chief Financial Officer

February 7, 2019

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

Principal Executive Officer:		
/s/ Keith J. Allman		
Keith J. Allman	*President and Chief Executive Officer and Director*	
Principal Financial Officer:		
/s/ John G. Sznewajs		
John G. Sznewajs	*Vice President, Chief Financial Officer*	
Principal Accounting Officer:		
/s/ John P. Lindow		
John P. Lindow	*Vice President, Controller and Chief Accounting Officer*	
/s/ J. Michael Losh		
J. Michael Losh	*Chairman of the Board*	
/s/ Richard A. Manoogian		
Richard A. Manoogian	*Chairman Emeritus*	
/s/ Mark R. Alexander		
Mark R. Alexander	*Director*	*February 7, 2019*
/s/ Marie A. Ffolkes		
Marie A. Ffolkes	*Director*	
/s/ Christopher A. O'Herlihy		
Christopher A. O'Herlihy	*Director*	
/s/ Donald R. Parfet		
Donald R. Parfet	*Director*	
/s/ Lisa A. Payne		
Lisa A. Payne	*Director*	
/s/ John C. Plant		
John C. Plant	*Director*	
/s/ Charles K. Stevens, III		
Charles K. Stevens, III	*Director*	
/s/ Reginald M. Turner, Jr.		
Reginald M. Turner, Jr.	*Director*	

MASCO CORPORATION

SCHEDULE II. VALUATION AND QUALIFYING ACCOUNTS
For the Years Ended December 31, 2018 , 2017 and 2016

(In Millions)

Column A	Column B	Column C		Column D		Column E
		Additions				
Description	Balance at Beginning of Period	Charged to Costs and Expenses	Charged to Other Accounts	Deductions		Balance at End of Period
Allowances for doubtful accounts, deducted from accounts receivable in the balance sheet:						
2018	$ 13	$ 6	$ —	$ (5)	**(a)**	$ 14
2017	$ 11	$ 5	$ —	$ (3)	**(a)**	$ 13
2016	$ 11	$ 4	$ —	$ (4)	**(a)**	$ 11
Valuation allowance on deferred tax assets:						
2018	$ 47	$ —	$ —	$ (4)	**(b)**	$ 43
2017	$ 45	$ —	$ 2 **(c)**	$ —		$ 47
2016	$ 49	$ 11	$ —	$ (15)	**(d)**	$ 45

(a) Deductions, representing uncollectible accounts written off, less recoveries of accounts written off in prior years.

(b) $3 million net reduction to valuation allowance recorded as an income tax benefit and $1 million reduction recorded primarily in other comprehensive income (loss).

(c) $2 million adjustment to the valuation allowance was recorded primarily in other comprehensive income (loss).

(d) Write off $13 million of deferred tax assets on certain state and local net operating loss carryforwards against the valuation allowance, as it was determined that there was only a remote likelihood that such carryforwards could be utilized; and, $2 million adjustment to the valuation allowance was recorded primarily in other comprehensive income (loss).

Exhibit 10.h

MASCO CORPORATION
COMPENSATION OF NON-EMPLOYEE DIRECTORS

Our non-employee directors receive an annual retainer of $270,000, of which $130,000 is paid in cash and the remainder is paid in the form of restricted stock granted under our Non-Employee Directors Equity Program.

The Company pays additional retainers of $200,000 to the Chairman of the Board, $22,000 to the chair of the Audit Committee, and $20,000 to the chair of the Organization and Compensation Committee. The additional retainer for the chair of the Corporate Governance and Nominating Committee is $15,000; however, this retainer is not presently paid so long as our current Chairman of the Board continues to serve in both capacities. No meeting attendance fees are paid, with the exception that the Board may in its discretion approve the payment of meeting fees to directors in the following circumstances: (i) if a director is serving on three or more standing committees, he or she may receive meeting fees for attendance at meetings held by one of the three committees on which the director serves; and (ii) if a director is serving as a member of a special committee constituted by the Board, he or she may receive meeting fees for attendance at meetings held by such special committee.

Non-employee directors are eligible to participate in the Company’s matching gifts program until December 31 of the year in which their service as a director ends. Under this program, the Company will match up to $5,000 of a director’s contributions to eligible 501(c)(3) tax-exempt organizations each year. Directors are also eligible to participate in the Company’s employee purchase program, which enables them to obtain rebates on the Company’s products that they purchase for their personal use. Each of these programs is available to all of our employees. In addition, if space is available, a director’s spouse is permitted to accompany a director who travels on Company aircraft to attend Board or committee meetings.

[Form of Long Term Incentive Program Award]

[MASCO CORPORATION LETTERHEAD]

[Date]

[Executive Name]
[Executive Address]
____
____

RE: <u>RSU Grant Under the [Insert Performance Period] LTIP Program</u>

Dear [Executive Name]:

You have been designated to be a participant (a "Participant") in Masco Corporation's [insert Performance Period] Long-Term Incentive Program (the "LTIP Program") by the Organization and Compensation Committee (the "Committee") of the Board of Directors of Masco Corporation (the "Company"). This grant letter ("Grant Letter") contains terms and conditions that apply to your grant (the "Grant") of Restricted Stock Units ("RSUs").

The Grant may entitle you to receive Shares of the Company's common stock ("Shares") as a share award ("Share Award"), if certain conditions are satisfied, including approval of the Share Award by the Committee following the Performance Period. All of your rights to the Grant are described in this Grant Letter and the 2014 Long Term Stock Incentive Plan (the "Plan"), which, together, constitute your performance award agreement (the "Agreement").

YOUR GRANT

You have been granted ______ RSUs for the three-year period that begins on January 1, ____, and ends on December 31, ____ (the "Performance Period"). Subject to the terms contained in this Grant Letter, if the Committee determines (following the end of the Performance Period), that an average Return on Invested Capital ("ROIC"), as defined below, was achieved by the Company at the Threshold Performance Score Percentage (as defined below) or greater, then a Share Award will be made to you on the Share Award Date (as defined below).

THE LTIP PROGRAM

Purpose of the Program

The purpose of the LTIP Program is to provide an additional incentive for you to contribute to the achievement of the Company's long-term growth and profitability goals established by the Committee at the beginning of the Performance Period, and to align your efforts with stockholder interests. The Committee has set performance goals at levels that are consistent with the Company's long-range business plan, and the achievement of these goals will require a high level of performance over the Performance Period.

Summary of the Program

Participants in the LTIP Program are typically members of Masco's executive officer group. An individual's eligibility to be a Participant in the LTIP Program is determined by the Committee at the beginning of the Performance Period. The Committee has also specified the minimum (the "Threshold"), the target (the "Target"), and the Maximum (the "Maximum") Performance Score Percentages, which are increasing levels of performance goals, as defined in this Grant Letter. The Company's performance during the Performance Period will be evaluated against these Performance Score Percentages.

Following the completion of each year during the Performance Period, the Company will certify that year's financial results to the Committee. At the end of the Performance Period, the Committee will then calculate the Company's three-year average ROIC, as defined below, and if at least the Threshold Performance Score Percentage goal is attained, the RSUs will be redeemed in favor of a Share Award after the end of the Performance Period, as provided in this Grant Letter. Any Share Award is subject to the Committee's right to exercise negative discretion (to reduce or eliminate an award at any time) and to the provisions of the LTIP Program. The definitions, procedures, and timing of the LTIP Program are described in more detail below.

Definitions

Words capitalized in this Grant Letter will have the meanings given to them in this letter, or, if not defined in this Grant Letter, then as defined in the Plan. The following definitions relate specifically to the Grant and the performance criteria:

> ***"Adjusted After-Tax Operating Income"*** – this is equal to reported operating income of the Company for the year, adjusted to exclude the effect of special charges and certain other non-recurring income and expenses, multiplied by the positive difference between the following: [one minus the decimal equivalent of the then-applicable nominal corporate tax rate].
>
> ***"Adjusted Invested Capital"*** – this is the average reported shareholders' equity, adjusted to include the cumulative after-tax impact of goodwill and intangible asset impairment charges and to exclude the effect of special charges and certain other non-recurring income and expenses, plus average short-term and long-term debt minus average cash and cash investments, where each such component's average is determined by combining the current year's and prior year's respective amounts and dividing each resulting sum by two.
>
> ***"ROIC"*** – this is an acronym for "Return on Invested Capital" and, for each year within a Performance Period, will be determined by dividing the year's Adjusted After-Tax Operating Income by Adjusted Invested Capital. The annual ROIC percentages will be aggregated and divided by three to determine the average annual ROIC for use in the LTIP Program calculations.
>
> ***"RSU"*** - this is an acronym for "Restricted Stock Unit" and refers to a bookkeeping entry unit that may convert to a Share under certain circumstances. While in the form of a bookkeeping entry, RSUs are recorded on a one-for-one RSU-to-Share basis. However, an RSU can result in more or less Shares depending on the achievement level of the goals. If an RSU does not convert to a Share at the conclusion of the Performance Period as provided in the LTIP Program, it will lapse and be forfeited without further consideration.

It is important to note that the terms above will be construed consistent with generally accepted accounting principles, where applicable. In addition to the adjustments noted above, the Committee will also adjust the components of ROIC to exclude, as applicable, the following unusual items: rationalization charges, gains and losses from discontinued operations and other unusual, non-recurring gains and losses that are separately identified and reported.

Goals for the Performance Period

The following Performance Score Percentages and three-year average ROIC goals have been established by the Committee for the Performance Period:

Performance Score Percentages	*Threshold* 40 %	*Target* 100%	*Maximum* 200%
Three-Year Average ROIC Goals	___%	___%	___%

Determination of Achieved Performance Score Percentage and Amount of Share Award

Following the completion of each year during the Performance Period, the Company will certify that year's financial results to the Committee and, at the end of the Performance Period, the Committee will then calculate the Company's three-year average ROIC. Based on the three-year average ROIC, the Committee will determine the achieved Performance Score Percentage for the Performance Period.

If the achieved Performance Score Percentage for the three-year average ROIC is less than the Threshold Performance Score Percentage, no Share Award will be made and your Grant will lapse and be forfeited. If the Threshold Performance Score Percentage is achieved, subject to the Committee's right to exercise negative discretion, your Share Award will be determined by multiplying the achieved Performance Score Percentage by the number of RSUs in your Grant, and rounded to the nearest whole Share.

Continued Employment for Share Award and Timing of Shares

Except as described below, to qualify for a Share Award, you must be employed by the Company or an Affiliate on the Share Award Date (as defined below). If your employment is transferred within the Company or to an Affiliate, even if to a position in which you are no longer eligible to participate in the LTIP Program, you will continue to be eligible for a Share Award (prorated or not, as the case may be) following the Committee's approval of that Share Award, as if the employment transfer had not occurred (unless the Committee determines that there was another reason for the transfer that violates, or is subject to, another provision of the Agreement).

Once a Share Award is approved by the Committee in [insert year after Performance Period], the Shares will be issued to you no earlier than February 15, ____, and no later than March 15, ____ (the distribution date being the "Share Award Date"). You may be required to accept certain terms and conditions after the end of the Performance Period with respect to any Shares that may be issued to you.

Special Circumstances

Notwithstanding the foregoing, there are certain other employment situations in which the terms of your Grant may be modified, including the following:

- If you voluntarily terminate your employment at age sixty-five (65) or later, prior to the Share Award Date, then, in the discretion of the Committee, a cash payment equal to the value of a prorated Share Award (where the prorated amount is determined by the Committee and may be based, in part, on the length of your service) that would otherwise have been made to you, may be made to you at the same time as Share Awards are made; and
- If, prior to the Share Award Date, (1) there is a Change in Control of the Company (as defined in the Plan) and you are terminated from employment at the time of the Change in Control or within a specified period of time after the Change in Control (as determined by the Committee) or you resign from employment for Good Reason (as determined by the Committee) within that specified period, or (2) you die, or (3) you become permanently and totally disabled (as determined by the Committee), then, in the discretion of the Committee, a cash payment equal to the value of a prorated Share Award (where the prorated amount is determined by the Committee and may be based, in part, on the length of your service) that would otherwise have been made to you, may be made to you at the same time as Share Awards are made.

Administration, Amendment, and Termination of the Program

The Committee has the sole authority and discretion to interpret the LTIP Program and its related documents and to administer the LTIP Program. The Committee may amend or terminate the LTIP Program at any time. Neither the Company nor the Committee is obligated to make the LTIP Program (in whole or in part), or any other program, available to you or to any other employee at any time. The Committee may suspend, eliminate, or reduce a Grant, Share Award, or Shares for any Participant who fails to achieve an acceptable level of personal performance and professionalism.

General Information Regarding Your Acceptance

By signing and returning this Grant Letter, you agree to accept the Grant, and you voluntarily agree to the terms and conditions of the Agreement and acknowledge that:

- You have read and you understand this Grant Letter (including Exhibit A, which is incorporated as part of this Grant Letter) and the Agreement;
- You have received or have access to all of the documents referred to in this Grant Letter;
- There are no other commitments or understandings currently outstanding with respect to any other grants of options, restricted stock, restricted stock units, phantom stock, stock appreciation rights, or performance awards, except as may be evidenced by other agreements entered into by you and the Company or Committee;
- You may be required to accept certain terms and conditions at the end of the Performance Period with respect to any Shares that may be issued to you resulting from any portion of the Award that may be achieved;
- This Agreement will be governed by and interpreted in accordance with Michigan law, unless preempted by applicable Federal law. The headings in this Grant Letter are for information purposes only and are not a substantive part of the operative Agreement; and
- The LTIP Program is, in all respects, subject to the documents referenced in this Grant Letter and the Committee's application of its negative discretion, and is intended to comply with, or be exempt from, as the case may be, the provisions of Internal Revenue Code Sections 162(m) and 409A.

Please indicate your agreement to this Grant and the Agreement, effective as of the date of this Grant Letter, by signing the attached duplicate original and returning it to the Company.

Very truly yours,

Masco Corporation

By: ___________________

Keith J. Allman
Its: Chief Executive Officer

[SIGNATURE BLOCK FOR THE CEO'S GRANT LETTER:

Very truly yours,

The Organization and Compensation Committee of Masco Corporation

By: ___________________
Donald R. Parfet
Its: Chairman]

AGREED TO THE FOREGOING:

____
[Executive]

285840

EXHIBIT A
to
Grant Letter
Dated _____________

Participant's Further Acknowledgements

The terms and conditions contained in this Exhibit A have been incorporated into the Grant Letter and are binding on the Participant.

You agree not to engage in certain activities

Notwithstanding anything contained in the Grant Letter, if at any time you engage in an activity following your termination of employment, which in the sole judgment of the Committee is detrimental to the interests of the Company, including a subsidiary or affiliated company, all rights to any portion of the Grant will be forfeited. You acknowledge that such activity includes, but is not limited to, "Business Activities" (as defined below).

In addition, you agree, in consideration for the Grant, and regardless of whether any Shares have been issued, while you are employed or retained as a consultant by the Company or any of its subsidiaries or affiliates and for a period of one year following any termination of your employment and, if applicable, any consulting relationship with the Company or any of its subsidiaries or affiliates other than a termination in connection with a Change in Control (as defined in the Plan), not to engage in, and not to become associated in a "Prohibited Capacity" (as hereinafter defined) with any other entity engaged in, any Business Activities and not to encourage or assist others in encouraging any employee of the Company or any of its subsidiaries to terminate employment or to become engaged in any such Prohibited Capacity with an entity engaged in any Business Activities. "Business Activities" shall mean the design, development, manufacture, sale, marketing or servicing of any product or providing of services competitive with the products or services of (x) the Company or any subsidiary if you are employed by or consulting with the Company at any time while the Grant is outstanding, or (y) the subsidiary employing or retaining you at any time while the Grant is outstanding, to the extent such competitive products or services are distributed or provided either (1) in the same geographic area as are such products or services of the Company or any of its subsidiaries, or (2) to any of the same customers as such products or services of the Company or any of its subsidiaries are distributed or provided. "Prohibited Capacity" shall mean being associated with an entity as an employee, consultant, investor or another capacity where (1) confidential business information of the Company or any of its subsidiaries could be used in fulfilling any of your duties or responsibilities with such other entity, (2) any of your duties or responsibilities are similar to or include any of those you had while employed or retained as a consultant by the Company or any of its subsidiaries, or (3) an investment by you in such other entity represents more than 1% of such other entity's capital stock, partnership or other ownership interests.

By accepting the Grant, you agree that, should you breach the restrictions contained in the preceding paragraph, independent of any equitable or legal remedies that the Company may have and without limiting the Company's right to any other equitable or legal remedies, to pay to the Company in cash immediately upon the demand of the Company (1) the amount of income realized for income tax purposes from the Grant, net of all federal, state and other taxes payable on the amount of such income, but only to the extent such income is realized from any Award under the LTIP Program received on or after your termination of employment or, if applicable, any consulting relationship with the Company or its subsidiary or within the two-year period prior to the date of such termination, plus (2) all costs and expenses of the Company in any effort to enforce its rights under this or the preceding paragraph. The Company shall have the right to set off or withhold any amount owed to you by the Company or any of its subsidiaries or affiliates for any amount owed to the Company by you hereunder. The Plan also has specific provisions regarding the consequences that must follow certain types of restatements of the

Company's financial statements – those provisions can apply even if you have not breached any part of the LTIP Program.

You agree to the application of the Company's Dispute Resolution Policy

Section 3 of the Plan provides, in part, that the Committee shall have the authority to interpret the Plan, Award Agreement, Awards and any related agreements, and decide all questions and settle all controversies and disputes relating thereto. It further provides that the determinations, interpretations and decisions of the Committee are within its sole discretion and are final, conclusive and binding on all persons. In addition, you and the Company agree that if, for any reason, a claim is asserted against the Company or any of its subsidiaries or affiliated companies or any officer, employee or agent of the foregoing (other than a claim involving non-competition restrictions or the Company's, a subsidiary's or an affiliated company's trade secrets, confidential information or intellectual property rights) which (1) are within the scope of the Company's Dispute Resolution Policy (the terms of which are incorporated herein, as it shall be amended from time to time); (2) subverts the provisions of Section 3 of the Plan; or (3) involves any of the provisions of the LTIP Program, the Plan or the provisions of any Grant, Award or other agreements, including those related to the restricted stock units and related Shares or the claims of yourself or any persons to the benefits thereof, in order to provide a more speedy and economical resolution, the Dispute Resolution Policy shall be the sole and exclusive remedy to resolve all disputes, claims or controversies which are set forth above, except as otherwise agreed in writing by you and the Company or a subsidiary or affiliate of the Company.

It is our mutual intention that any arbitration award entered into under the Dispute Resolution Policy will be final and binding and that a judgment on the award may be entered in any court of competent jurisdiction. Notwithstanding the provisions of the Dispute Resolution Policy, however, the parties specifically agree that any mediation or arbitration required by this paragraph shall take place at the offices of the American Arbitration Association located in the metropolitan Detroit area or such other location in the metropolitan Detroit area as the parties might agree. The provisions of this paragraph: (a) shall survive the termination or expiration of the Agreement, (b) shall be binding upon the Company's and your respective successors, heirs, personal representatives, designated beneficiaries and any other person asserting a claim based upon the Agreement, (c) shall supersede the provisions of any prior agreement between you and the Company or its subsidiaries or affiliated companies with respect to any portion of the LTIP Program or other stock-based incentive plans to the extent the provisions of such other agreement requires arbitration between you and your employer, and (d) may not be modified without the consent of the Company. Subject to the exception set forth above, you and the Company acknowledge that neither of us nor any other person asserting a claim described above has the right to resort to any federal, state or local court or administrative agency concerning any such claim and the decision of the arbitrator shall be a complete defense to any action or proceeding instituted in any tribunal or agency with respect to any dispute.

Nothing in the Agreement or otherwise limits your ability to communicate directly with and provide information, including documents, not otherwise protected from disclosure by any applicable law or privilege to any federal, state or local governmental agency or commission ("Government Agency") regarding possible legal violations, without disclosure to the Company. The Company may not retaliate against you for any of these activities, and nothing in the Agreement requires you to waive any monetary award or other payment that you might become entitled to from any Government Agency. Further, nothing in the Agreement precludes you from filing a charge of discrimination with the Equal Employment Opportunity Commission or a like charge or complaint with a state or local fair employment practice agency. You agree to waive the right to receive future monetary recovery directly from the Company, including payments by the Company that result from any complaint or charges that you file with any Governmental Agency or that are filed on your behalf.

The Grant does not imply any employment or consulting commitment by the Company

You agree that the Grant and acceptance of the Grant does not imply any commitment by the Company, a subsidiary or affiliated company to your continued employment or any consulting relationship, and that your employment status is that of an “employee-at-will” and, in particular, that the Company, its subsidiary or affiliated company has a continuing right with or without cause (unless otherwise specifically agreed to in writing executed by you and the Company) to terminate your employment or other relationship at any time. You agree that your acceptance represents your agreement not to terminate voluntarily your current employment (or consulting arrangement, if applicable) for at least one year from the date of Grant unless you have already agreed in writing to a longer period.

You agree to comply with applicable tax requirements

You agree to comply with the requirements of applicable federal, state, and other applicable laws with respect to withholding or providing for the payment of required taxes, and that you will provide related information as reasonably requested.

[Masco Corporation letterhead]

Restricted Stock Award Agreement
For Nonemployee Directors

Dear __(Participant Name)__:

This letter is to inform you that the Board of Directors of Masco Corporation (the "Company") has granted you the following Restricted Stock Award (the "Grant") under the Masco Corporation 2014 Long Term Stock Incentive Plan (the "Plan"):

Grant Date	Shares Awarded	Vesting Schedule
(Grant Date)	(# of Awards Granted)	(Vesting Schedule Dates & Quantities)

You must accept this grant within 30 days of this Award Notification. By accepting this Grant, you voluntarily agree to the Terms and Conditions attached to this letter as Annex A (the "Terms and Conditions") and to the provisions of the Plan, and acknowledge that:

- You have read and understand the Terms and Conditions, and are familiar with the provisions of the Plan.
- You have received or have access to all of the documents referred to in the Terms and Conditions.
- All of your rights to the Grant are embodied in the Terms and Conditions and in the Plan, and there are no other commitments or understandings currently outstanding with respect to any other grants of options, restricted stock, phantom stock or stock appreciation rights, except as may be evidenced by a written agreement between you and the Company.

You and the Company agree that all of the terms and conditions of the Grant (including the Grant information above) are set forth in the Terms and Conditions and the Plan. This letter and the Terms and Conditions constitute your Restricted Stock Award Agreement (the "Agreement"). Please read these documents and the related Plan and prospectus carefully. Copies of the Company's latest annual report to stockholders and proxy statement are available in the "Plan & Grant Document" section of NetBenefits.com.

Please contact Stock Plan Services at (313) 792-6667 or at StockPlanServices@mascohq.com if you have any questions or concerns regarding this information.

Sincerely,

MASCO CORPORATION

MASCO CORPORATION

TERMS AND CONDITIONS OF RESTRICTED STOCK AWARDS FOR NON-EMPLOYEE DIRECTORS UNDER THE MASCO CORPORATION 2014 LONG TERM STOCK INCENTIVE PLAN

Certificates for the shares of stock evidencing the Restricted Shares (as defined in the Plan) will not be issued but the shares will be registered in your name in book entry form promptly after your acceptance of this award. You will be entitled to vote and receive any cash dividends (net of required tax withholding) on the Restricted Shares, but you will not be able to obtain a stock certificate or sell, encumber or otherwise transfer the shares except in accordance with the Plan.

Provided since the date of the Grant you have continuously served as an Eligible Director (as defined below), the restrictions on the shares will lapse in installments until all shares are free of restrictions in each case based on the initial number of shares. An “Eligible Director” is any Director of the Company who is not an employee of the Company and who receives a fee for services as a Director. If your term as an Eligible Director should be terminated by reason of your death or permanent and total disability, or if following retirement from your term as an Eligible Director you thereafter die, the restrictions on all Restricted Stock will lapse and your rights to the shares will become vested on the date of such termination or death. If your term as an Eligible Director terminates by reason of retirement on or after normal retirement age as specified in the Company’s Corporate Governance Guidelines, the restrictions contained in the Grant shall continue to lapse in the same manner as though your term had not terminated. If your term as an Eligible Director is terminated for any reason other than death or permanent and total disability or retirement on or after normal retirement age as specified in the Company’s Corporate Governance Guidelines, while restrictions remain in effect, the Restricted Stock that has not vested shall be automatically forfeited and transferred back to the Company; provided, however, that a pro rata portion of the Restricted Stock which would have vested on May 15 of the year following the year of such termination shall vest on the date of termination, based upon the portion of the year between annual vesting dates during which you served as an Eligible Director of the Company.

You agree not to engage in certain activities.

Notwithstanding the foregoing, if at any time you engage in an activity following your termination of service which in the sole judgment of the Board is detrimental to the interests of the Company, a subsidiary or affiliated company, all Restricted Shares for which restrictions have not lapsed will be forfeited to the Company. You acknowledge that such activity includes, but is not limited to, “Business Activities” (as defined below).

In addition you agree, in consideration for the Grant, and regardless of whether restrictions on shares subject to the Grant have lapsed, while you are a Director of the Company and for a period of one year following any termination of your term as a Director of the Company, other than a termination following a Change in Control (as defined in the Plan), not to engage in, and not to become associated in a “Prohibited Capacity” (as defined below) with any other entity engaged in, any Business Activities and not to encourage or assist others in encouraging any employee of the Company or any of its subsidiaries to terminate employment or to become engaged in any such Prohibited Capacity with an entity engaged in any Business Activities. “Business Activities” shall mean the design, development, manufacture, sale, marketing or servicing of any product or providing of services competitive with the products or services of the Company or any subsidiary at any time while the Grant is outstanding, to the extent such competitive products or services are distributed or provided either (1) in the same geographic area as are such products or services of the Company or any of its subsidiaries, or (2) to any of the same customers as such products or services of the Company or any of its subsidiaries are distributed or provided. “Prohibited Capacity” shall mean being associated with an entity as a director, employee, consultant, investor or another capacity where (1) confidential business information of the Company or any of its subsidiaries could be used in fulfilling any of your duties or responsibilities with such other entity, or (2) an investment by you in such other entity represents more than 1% of such other entity’s capital stock, partnership or other ownership interests.

Should you breach any of the restrictions contained in the preceding paragraph, by accepting this Grant you agree, independent of any equitable or legal remedies that the Company may have and without limiting the Company’s right to any other equitable or legal remedies, to pay to the Company in cash immediately upon the demand of the Company (1) the amount of income realized for income tax purposes from this Grant, net of all federal, state and other taxes payable on the amount of such income, but only to the extent such income is realized from restrictions lapsing on shares on or after your termination of your term as a Director of the Company or within the two year period prior to the date of such termination, plus (2) all costs and expenses of the Company in any effort to enforce its rights under this or the preceding paragraph. The Company shall have the right to set off or withhold any amount owed to you by the Company or any of its subsidiaries or affiliates for any amount owed to the Company by you hereunder.

You agree to the application of the Company’s Dispute Resolution Policy.

Section 3 of the Plan provides, in part, that the Committee appointed by the Board to administer the Plan shall have the authority to interpret the Plan and Grant agreements, and decide all questions and settle all controversies and disputes relating thereto. It further provides that the determinations, interpretations and decisions of the Committee are within its sole discretion and are final, conclusive and binding on all persons. In addition, you and the Company agree that if for any reason a claim is asserted against the Company or any of its subsidiaries or affiliated companies or any officer, employee or agent of the foregoing (other than a claim involving non-competition restrictions or the Company’s, a subsidiary’s or an affiliated company’s trade secrets, confidential information or intellectual property rights) which (1) is within the scope of the Company’s Dispute Resolution Policy (the terms of which are incorporated herein, as it shall be amended from time to time); (2) subverts the provisions of Section 3 of the Plan; or (3) involves any of the provisions of the Agreement or the Plan or the provisions of any other restricted stock awards or option or other agreements relating to Company Common Stock or the claims of yourself or any persons to the benefits thereof, in order to provide a more speedy and economical resolution, the Dispute Resolution Policy shall be the sole and exclusive remedy to resolve all disputes, claims or controversies which are set forth above, except as otherwise agreed in writing by you and the Company. It is our mutual intention that any arbitration award entered under the Dispute Resolution Policy will be final and binding and that a judgment on the award may be entered in any court of competent jurisdiction. Notwithstanding the provisions of the Dispute Resolution Policy, however, the parties specifically agree that any mediation or arbitration required by this paragraph shall take place at the offices of the American Arbitration Association located in the metropolitan Detroit area or such other location in the metropolitan Detroit area as the parties might agree. The provisions of this paragraph: (a) shall survive the termination or expiration of the Agreement, (b) shall be binding upon the Company’s and your respective successors, heirs, personal representatives, designated beneficiaries and any other person asserting a claim based upon the Agreement, (c) shall supersede the provisions of any prior agreement between you and the Company with respect to any of the Company’s option, restricted stock or other stock-based incentive plans to the extent the provisions of such other agreement requires arbitration between you and the Company, and (d) may not be modified without the consent of the Company. Subject to the exception set forth above, you and the Company acknowledge that neither of us nor any other person asserting a claim described above has the right to resort to any federal, state or local court or administrative agency concerning any such claim and the decision of the arbitrator shall be a complete defense to any action or proceeding instituted in any tribunal or agency with respect to any dispute.

You agree to comply with applicable tax requirements and to provide information as requested.

You agree to comply with the requirements of applicable federal and other laws with respect to withholding or providing for the payment of required taxes. You also agree to promptly provide such information with respect to shares acquired pursuant to the Grant, as may be requested by the Company or any of its subsidiaries or affiliated companies.

The Agreement shall be governed by and interpreted in accordance with Michigan law.

The headings set forth herein are for informational purposes only and are not a substantive part of these Terms and Conditions.

These Terms and Conditions are effective for grants made on or after July 1, 2018.

Exhibit 10.c.iv

[Masco Corporation letterhead]

Stock Option Award Agreement

Dear __(Participant Name)__:

This letter is to inform you that the Organization and Compensation Committee (the "Committee") of the Board of Directors of Masco Corporation (the "Company") has granted you the following Stock Option Award (the "Option") under the Masco Corporation 2014 Long Term Stock Incentive Plan (the "Plan"):

Grant Date	Option Shares Awarded	Grant Price Per Share	Vesting Schedule	Expiration Date
(Grant Date)	(# of Awards Granted)		(Vesting Schedule Dates & Quantities)	(10 Years from Grant Date)

You must accept this grant within 30 days of this Award Notification. By accepting the Option, you voluntarily agree to the Terms and Conditions attached to this letter as Annex A (the "Terms and Conditions") and to the provisions of the Plan, and acknowledge that:

- You have read and understand the Terms and Conditions, and are familiar with the provisions of the Plan.
- You have received or have access to all of the documents referred to in the Terms and Conditions.
- All of your rights to the Option are embodied in the Terms and Conditions and in the Plan, and there are no other commitments or understandings currently outstanding with respect to any other grants of options, restricted stock, phantom stock or stock appreciation rights, except as may be evidenced by a written agreement between you and the Company.

You and the Company agree that all of the terms and conditions of the Option (including the Option information above) are set forth in the Terms and Conditions and the Plan. This letter and the Terms and Conditions constitute your Stock Option Award Agreement (the "Agreement"). Please read these documents and the related Plan and prospectus carefully. Copies of the Company's latest annual report to stockholders and proxy statement are available in the "Plan & Grant Document" section of NetBenefits.com.

Please contact Stock Plan Services at (313) 792-6667 or at StockPlanServices@mascohq.com if you have any questions or concerns regarding this information.

Sincerely,

MASCO CORPORATION

ANNEX A

MASCO CORPORATION

TERMS AND CONDITIONS OF
NON-QUALIFIED STOCK OPTIONS GRANTED
UNDER THE MASCO CORPORATION
2014 LONG TERM STOCK INCENTIVE PLAN

The use of the words "employment" or "employed" shall be deemed to refer to employment by the Company and its subsidiaries and shall not include employment by an "Affiliate" (as defined in the Plan) which is not a subsidiary of the Company unless the Committee so determines at the time such employment commences.

The Option, if accepted by you, grants you the right to purchase shares of Company Common Stock, $1.00 par value, at a price per share which shall not be less than 100% of the fair market value of a share of Company Common Stock on the date of grant.

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When the Option is Exercisable and Termination

The Option is exercisable cumulatively in installments, provided that, subject to the last sentence of this paragraph, on each date of exercise you qualify under the provisions of the Plan, including Section 6(a), subparagraph (ii)(E), to exercise such Option. All installments of the Option must be exercised no later than ten years after the date of grant; all unexercised installments or portions thereof shall lapse and the right to purchase shares pursuant to the Option shall be of no further effect after such date. If during the option exercise periods your employment is terminated for any reason, the Option shall terminate in accordance with Section 6 of the Plan.

You agree not to engage in certain activities.

Notwithstanding the foregoing, if at any time you engage in an activity following your termination of employment which in the sole judgment of the Committee is detrimental to the interests of the Company, a subsidiary or affiliated company, all unexercised installments of the Option or portions thereof will be forfeited to the Company. You acknowledge that such activity includes, but is not limited to, Business Activities (as defined below).

In addition you agree, in consideration for the grant of the Option and regardless of whether the Option becomes exercisable or is exercised, while you are employed or retained as a consultant by the Company or any of its subsidiaries and for a period of one year following any termination of your employment and, if applicable, any consulting relationship with the Company or any of its subsidiaries other than a termination in connection with a Change in Control (as defined in the Plan), not to engage in, and not to become associated in a “Prohibited Capacity” (as defined below) with any other entity engaged in, any Business Activities and not to encourage or assist others in encouraging any employee of the Company or any of its subsidiaries to terminate employment or to become engaged in any such Prohibited Capacity with an entity engaged in any Business Activities. “Business Activities” shall mean the design, development, manufacture, sale, marketing or servicing of any product or providing of services competitive with the products or services of (x) the Company or any subsidiary if you are employed by or consulting with the Company at any time while the Option is outstanding, or (y) the subsidiary employing or retaining you at any time while the Option is outstanding, to the extent such competitive products or services are distributed or provided either (1) in the same geographic area as are such products or services of the Company or any of its subsidiaries, or (2) to any of the same customers as such products or services of the Company or any of its subsidiaries are distributed or provided. “Prohibited Capacity” shall mean being associated with an entity as an employee, consultant, investor or another capacity where (1) confidential business information of the

Company or any of its subsidiaries could be used in fulfilling any of your duties or responsibilities with such other entity, (2) any of your duties or responsibilities are similar to or include any of those you had while employed or retained as a consultant by the Company or any of its subsidiaries, or (3) an investment by you in such other entity represents more than 1% of such other entity's capital stock, partnership or other ownership interests.

Should you breach any of the restrictions contained in the preceding paragraph, by accepting the Option you agree, independent of any equitable or legal remedies that the Company may have and without limiting the Company's right to any other equitable or legal remedies, to pay to the Company in cash immediately upon the demand of the Company (1) the amount of income realized for income tax purposes from the exercise of any portion of the Option, net of all federal, state and other taxes payable on the amount of such income (and reduced by any amount already paid to the Company under the second succeeding paragraph), but only to the extent such exercises occurred on or after your termination of employment or, if applicable, any consulting relationship with the Company or its subsidiary or within the two year period prior to the date of such termination, plus (2) all costs and expenses of the Company in any effort to enforce its rights under this or the preceding paragraph. The Company shall have the right to set off or withhold any amount owed to you by the Company or any of its subsidiaries or affiliates for any amount owed to the Company by you hereunder.

You agree to the application of the Company's Dispute Resolution Policy.

Section 3 of the Plan provides, in part, that the Committee shall have the authority to interpret the Plan and Option agreements and decide all questions and settle all controversies and disputes relating thereto. It further provides that the determinations, interpretations and decisions of the Committee are within its sole discretion and are final, conclusive and binding on all persons. In addition, you and the Company agree that if for any reason a claim is asserted against the Company or any of its subsidiaries or affiliated companies or any officer, employee or agent of the foregoing which (1) is within the scope of the Company's Dispute Resolution Policy (the terms of which are incorporated herein, as it shall be amended from time to time); (2) subverts the provisions of Section 3 of the Plan; or (3) involves any of the provisions of the Agreement or the Plan or the provisions of any other option agreements or restricted stock awards or other agreements relating to Company Common Stock or the claims of yourself or any persons to the benefits thereof, in order to provide a more speedy and economical resolution, the Dispute Resolution Policy shall be the sole and exclusive remedy to resolve all disputes, claims or controversies which are set forth above, except as otherwise agreed in writing by you and the Company or a subsidiary of the Company. It is our mutual intention that any arbitration award entered under the Dispute Resolution Policy will be final and binding and that a judgment on the award may be entered in any court of competent jurisdiction. Notwithstanding the provisions of the Dispute Resolution Policy, however, the parties specifically agree that any mediation or arbitration required by this paragraph shall take place at the offices of the American Arbitration Association located in the metropolitan Detroit area or such other location in the metropolitan Detroit area as the parties might agree. The provisions of this paragraph: (a) shall survive the termination or expiration of the Agreement, (b) shall be binding upon the Company's and your respective successors, heirs, personal representatives, designated beneficiaries and any other person asserting a claim based upon the Agreement, (c) shall supersede the provisions of any prior agreement between you and the Company or its subsidiaries or affiliated companies with respect to any of the Company's option, restricted stock or other stock-based incentive plans to the extent the provisions of such other agreement requires arbitration between you and your employer, and (d) may not be modified without the consent of the Company. Subject to the exception set forth above, you and the Company acknowledge that neither of us nor any other person asserting a claim described above has the right to resort to any federal, state or local court or administrative agency concerning any such claim and the decision of the arbitrator shall be a complete defense to any action or proceeding instituted in any tribunal or agency with respect to any dispute.

The following provision applies if your employment is terminated.

If your employment with the Company or any of its subsidiaries is terminated for any reason, other than death, permanent and total disability, retirement on or after normal retirement date or the sale or other disposition of the business or subsidiary employing you, and other than termination of employment in connection with a Change in Control, and if any installments of the Option became exercisable within the two year period prior to the date of such termination (such installments being referred to as the "Subject Options"), by accepting the Option you agree that the following provisions will apply:

(1) Upon the demand of the Company you will pay to the Company in cash within 30 days after the date of such termination the amount of income realized for income tax purposes from the exercise of any Subject Options, net of all federal, state and other taxes payable on the amount of such income, plus all costs and expenses of the Company in any effort to enforce its rights hereunder; and

(2) Any right you would otherwise have, pursuant to the terms of the Plan and these Terms and Conditions, to exercise any Subject Options on or after the date of such termination, shall be extinguished as of the date of such termination.

The Company shall have the right to set off or withhold any amount owed to you by the Company or any of its subsidiaries or affiliates for any amount owed to the Company by you hereunder.

The Option grant does not imply any employment or consulting commitment by the Company.

You agree that the grant of the Option and acceptance of the Option does not imply any commitment by the Company, a subsidiary or affiliated company to your continued employment or consulting relationship, and that your employment status is that of an employee-at-will and in particular that the Company, its subsidiary or affiliated company has a continuing right with or without cause (unless otherwise specifically agreed to in writing executed by you and the Company) to terminate your employment or other relationship at any time. You agree that your acceptance represents your agreement not to terminate voluntarily your current employment (or consulting arrangement, if applicable) for at least one year from the date of grant unless you have already agreed in writing to a longer period.

You agree to comply with applicable tax requirements and to provide information as requested.

You agree to comply with the requirements of applicable federal and other laws with respect to withholding or providing for the payment of required taxes. You also agree to promptly provide such information with respect to shares acquired pursuant to the Option, as may be requested by the Company or any of its subsidiaries or affiliated companies.

The Agreement shall be governed by and interpreted in accordance with Michigan law.

The headings set forth herein are for informational purposes only and are not a substantive part of these Terms and Conditions.

These Terms and Conditions are effective for grants made on or after July 1, 2018.

Exhibit 10.c.ii

[Masco Corporation letterhead]

Restricted Stock Award Agreement

Dear __(Participant Name)__:

This letter is to inform you that the Organization and Compensation Committee (the "Committee") of the Board of Directors of Masco Corporation (the "Company") has granted you the following Restricted Stock Award (the "Grant") under the Masco Corporation 2014 Long Term Stock Incentive Plan (the "Plan"):

Grant Date	Shares Awarded	Vesting Schedule
(Grant Date)	(# of Awards Granted)	(Vesting Schedule Dates & Quantities)

You must accept this grant within 30 days of this Award Notification. By accepting this Grant, you voluntarily agree to the Terms and Conditions attached to this letter as Annex A (the "Terms and Conditions") and to the provisions of the Plan, and acknowledge that:

- You have read and understand the Terms and Conditions, and are familiar with the provisions of the Plan.
- You have received or have access to all of the documents referred to in the Terms and Conditions.
- All of your rights to the Grant are embodied in the Terms and Conditions and in the Plan, and there are no other commitments or understandings currently outstanding with respect to any other grants of options, restricted stock, phantom stock or stock appreciation rights, except as may be evidenced by a written agreement between you and the Company.

You and the Company agree that all of the terms and conditions of the Grant (including the Grant information above) are set forth in the Terms and Conditions and the Plan. This letter and the Terms and Conditions constitute your Restricted Stock Award Agreement (the "Agreement"). Please read these documents and the related Plan and prospectus carefully. Copies of the Company's latest annual report to stockholders and proxy statement are available in the "Plan & Grant Document" section of NetBenefits.com.

Please contact Stock Plan Services at (313) 792-6667 or at StockPlanServices@mascohq.com if you have any questions or concerns regarding this information.

Sincerely,

MASCO CORPORATION

<u>ANNEX A</u>

MASCO CORPORATION

TERMS AND CONDITIONS OF
RESTRICTED STOCK AWARDS GRANTED UNDER THE
MASCO CORPORATION 2014 LONG TERM STOCK INCENTIVE PLAN

The use of the words "employment" or "employed" shall be deemed to refer to employment by the Company and its subsidiaries and shall not include employment by an "Affiliate" (as defined in the Plan) which is not a subsidiary of the Company unless the Committee so determines at the time such employment commences.

Certificates for the shares of stock evidencing the Restricted Shares (as defined in the Plan) will not be issued but the shares will be registered in your name in book entry form promptly after your acceptance of this award. You will be entitled to vote and receive any cash dividends (net of required tax withholding) on the Restricted Shares, but you will not be able to obtain a stock certificate or sell, encumber or otherwise transfer the shares except in accordance with the Plan.

Provided since the date of the Grant you have been continuously employed by the Company, the restrictions on the shares will lapse in installments until all shares are free of restrictions in each case based on the initial number of shares.

In accordance with Section 6(d)(iv) of the Plan, if your employment should be terminated by reason of your permanent and total disability or if you should die while Restricted Shares remain unvested, the restrictions on all Restricted Shares will lapse and your rights to the shares will become vested on the date of such termination or death. If you are then an employee and your employment should be terminated by reason of retirement on or after your attaining age 65, such restrictions will continue to lapse in the same manner as though your employment had not been terminated, subject to the other provisions of this Agreement and the Plan.

If your employment is terminated for any reason, with or without cause, while restrictions remain in effect, other than for a reason referred to above, all Restricted Shares for which restrictions have not lapsed will be automatically forfeited to the Company.

You agree not to engage in certain activities.

Notwithstanding the foregoing, if at any time you engage in an activity following your termination of employment which in the sole judgment of the Committee is detrimental to the interests of the Company, a subsidiary or affiliated company, all Restricted Shares for which restrictions have not lapsed will be forfeited to the Company. You acknowledge that such activity includes, but is not limited to, “Business Activities” (as defined below).

In addition you agree, in consideration for the Grant, and regardless of whether restrictions on shares subject to the Grant have lapsed, while you are employed or retained as a consultant by the Company or any of its subsidiaries and for a period of one year following any termination of your employment and, if applicable, any consulting relationship with the Company or any of its subsidiaries other than a termination in connection with a Change in Control (as defined in the Plan), not to engage in, and not to become associated in a “Prohibited Capacity” (as defined below) with any other entity engaged in, any Business Activities and not to encourage or assist others in encouraging any employee of the Company or any of its subsidiaries to terminate employment or to become engaged in any such Prohibited Capacity with an entity engaged in any Business Activities. “Business Activities” shall mean the design, development, manufacture, sale, marketing or servicing of any product or providing of services competitive with the products or services of (x) the Company or any subsidiary if you are employed by or consulting with the Company at any time while the

Grant is outstanding, or (y) the subsidiary employing or retaining you at any time while the Grant is outstanding, to the extent such competitive products or services are distributed or provided either (1) in the same geographic area as are such products or services of the Company or any of its subsidiaries, or (2) to any of the same customers as such products or services of the Company or any of its subsidiaries are distributed or provided. “Prohibited Capacity” shall mean being associated with an entity as an employee, consultant, investor or another capacity where (1) confidential business information of the Company or any of its subsidiaries could be used in fulfilling any of your duties or responsibilities with such other entity, (2) any of your duties or responsibilities are similar to or include any of those you had while employed or retained as a consultant by the Company or any of its subsidiaries, or (3) an investment by you in such other entity represents more than 1% of such other entity’s capital stock, partnership or other ownership interests.

Should you breach any of the restrictions contained in the preceding paragraph, by accepting this Grant you agree, independent of any equitable or legal remedies that the Company may have and without limiting the Company’s right to any other equitable or legal remedies, to pay to the Company in cash immediately upon the demand of the Company (1) the amount of income realized for income tax purposes from this Grant, net of all federal, state and other taxes payable on the amount of such income, but only to the extent such income is realized from restrictions lapsing on shares on or after your termination of employment or, if applicable, any consulting relationship with the Company or its subsidiary or within the two year period prior to the date of such termination, plus (2) all costs and expenses of the Company in any effort to enforce its rights under this or the preceding paragraph. The Company shall have the right to set off or withhold any amount owed to you by the Company or any of its subsidiaries or affiliates for any amount owed to the Company by you hereunder.

You agree to the application of the Company’s Dispute Resolution Policy.

Section 3 of the Plan provides, in part, that the Committee shall have the authority to interpret the Plan and Grant agreements, and decide all questions and settle all controversies and disputes relating thereto. It further provides that the determinations, interpretations and decisions of the Committee are within its sole discretion and are final, conclusive and binding on all persons. In addition, you and the Company agree that if for any reason a claim is asserted against the Company or any of its subsidiaries or affiliated companies or any officer, employee or agent of the foregoing (other than a claim involving non-competition restrictions or the Company’s, a subsidiary’s or an affiliated company’s trade secrets, confidential information or intellectual property rights) which (1) is within the scope of the Company’s Dispute Resolution Policy (the terms of which are incorporated herein, as it shall be amended from time to time); (2) subverts the provisions of Section 3 of the Plan; or (3) involves any of the provisions of the Agreement or the Plan or the provisions of any other restricted stock awards or option or other agreements relating to Company Common Stock or the claims of yourself or any persons to the benefits thereof, in order to provide a more speedy and economical resolution, the Dispute Resolution Policy shall be the sole and exclusive remedy to resolve all disputes, claims or controversies which are set forth above, except as otherwise agreed in writing by you and the Company or a subsidiary of the Company. It is our mutual intention that any arbitration award entered under the Dispute Resolution Policy will be final and binding and that a judgment on the award may be entered in any court of competent jurisdiction. Notwithstanding the provisions of the Dispute Resolution Policy, however, the parties specifically agree that any mediation or arbitration required by this paragraph shall take place at the offices of the American Arbitration Association located in the metropolitan Detroit area or such other location in the metropolitan Detroit area as the parties might agree. The provisions of this paragraph: (a) shall survive the termination or expiration of the Agreement (b) shall be binding upon the Company’s and your respective successors, heirs, personal representatives, designated beneficiaries and any other person asserting a claim based upon the Agreement, (c) shall supersede the provisions of any prior agreement between you and the Company or its subsidiaries or affiliated companies with respect to any of the Company’s option, restricted stock or other stock-based incentive plans to the extent the provisions of such other agreement requires arbitration between you and your employer, and (d) may not be modified without the consent of the Company. Subject to the exception set forth above, you and the Company acknowledge that neither of us nor any other person asserting a claim described above has the right to resort to any federal, state or local court or administrative agency concerning any such claim and the decision of the arbitrator shall be a complete defense to any action or proceeding instituted in any tribunal or agency with respect to any dispute.

The Grant does not imply any employment or consulting commitment by the Company.

You agree that the Grant and acceptance of the Grant does not imply any commitment by the Company, a subsidiary or affiliated company to your continued employment or consulting relationship, and that your employment status is that of an employee-at-will and in particular that the Company, its subsidiary or affiliated company has a continuing right with or without cause (unless otherwise specifically agreed to in writing executed by you and the Company) to terminate your employment or other relationship at any time. You agree that your acceptance represents your agreement not to terminate voluntarily your current employment (or consulting arrangement, if applicable) for at least one year from the date of this Grant unless you have already agreed in writing to a longer period.

You agree to comply with applicable tax requirements and to provide information as requested.

You agree to comply with the requirements of applicable federal and other laws with respect to withholding or providing for the payment of required taxes. You also agree to promptly provide such information with respect to shares acquired pursuant to the Grant, as may be requested by the Company or any of its subsidiaries or affiliated companies.

The Agreement shall be governed by and interpreted in accordance with Michigan law.

The headings set forth herein are for informational purposes only and are not a substantive part of these Terms and Conditions.

These Terms and Conditions are effective for grants made on or after July 1, 2018.

MASCO CORPORATION
(a Delaware corporation)

Subsidiaries as of December 31, 2018

Directly owned subsidiaries are located at the left margin; each subsidiary tier thereunder is indented. Subsidiaries are listed under the names of their respective parent entities. Unless otherwise noted, the subsidiaries are wholly-owned. Certain of these entities may also use trade names or other assumed names in the conduct of their business.

NAME	**JURISDICTION OF FORMATION**
Airex 3, LLC	Michigan
Behr Holdings Corporation	Delaware
Behr Process Corporation **(1)**	California
BEHR PAINTS IT!, INC.	California
Behr Process Canada Ltd.	Canada
Behr Sales Inc.	California
Masterchem Industries LLC	Missouri
ColorAxis, Inc.	California
Behr Process Paints (India) Private Limited	India
BrassCraft Manufacturing Company **(2)**	Michigan
Brasstech, Inc. **(3)**	California
Delta Faucet (China) Co. Ltd.	China
Delta Faucet Company Mexico, S. de R.L. de C.V.	Mexico
Kichler Lighting LLC	Delaware
L.D. Kichler Lighting Services (Shanghai) Co., Ltd.	China
Landex of Wisconsin, Inc.	Wisconsin
Liberty Hardware Mfg. Corp.	Florida
Masco Asia (Shenzhen) Co. Ltd.	China
Masco Building Products Corp.	Delaware
Masco Cabinetry LLC **(4)**	Delaware
Masco Cabinetry Hong Kong Limited	Hong Kong
Masco Cabinetry Middlefield LLC	Ohio
Masco Capital Corporation	Delaware
Masco Chile Limitada **(5)**	Chile
Masco Corporation of Indiana	Indiana
Delta Faucet Company **(6)**	Indiana
Delta Faucet Company of Tennessee	Delaware
Masco Europe, Inc.	Delaware
Masco Europe SCS	Luxembourg
Masco Europe S. á r.l.	Luxembourg
Behr (Beijing) Paint Company Limited	China
Behr Paint (Beijing) Commercial Co., Ltd.	China

(1) Also conducts business under the assumed names Behr Paint Company, Behr Pro and Masco Coatings Group.
(2) Also conducts business under the assumed name Cobra Products, Inc. and Plumbers Quality Tool Mfg. Co., Inc.
(3) Also conducts business under the assumed names Ginger, Motiv, Newport Brass and Newport Metal Finishing, Inc.
(4) Also conducts business under the assumed names KraftMaid Cabinetry, Merillat and Quality Cabinets.
(5) Masco Corporation’s ownership is 99.99%.
(6) Also conducts business under the assumed names Brizo Kitchen & Bath, Masco Bathing Company and Peerless Faucet Company

NAME	JURISDICTION OF FORMATION
Jardel Distributors, Inc.	Canada
Masco Canada Limited **(7)**	Canada
Masco Corporation Limited	United Kingdom
Arrow Fastener (U.K.) Limited	United Kingdom
Bristan Group Limited	United Kingdom
Cambrian Windows Limited	United Kingdom
Duraflex Limited	United Kingdom
Masco UK Window Group Limited	United Kingdom
Phoenix Door Panels Limited	United Kingdom
Moore Group Limited	United Kingdom
Premier Trade Frames Ltd.	United Kingdom
Watkins Distribution UK Limited	United Kingdom
Masco Germany Holding GmbH	Germany
Hüppe GmbH	Germany
Hüppe Belgium S.A.	Belgium
Hüppe s.r.o.	Czech Republic
Hüppe S. á r.l.	France
Hüppe B.V.	Netherlands
Hüppe Spólka z.o.o.	Poland
Hüppe S.L.	Spain
Hüppe Insaat Sanayi ve Ticaret A.S.	Turkey
Masco Beteiligungsgesellschaft mbH	Germany
Hansgrohe SE **(8)**	Germany
Hansgrohe Deutschland Vertriebs GmbH	Germany
Hansgrohe International GmbH	Germany
Hansgrohe S.A.	Argentina
Hansgrohe Pty Ltd	Australia
Hansgrohe Handelsges.mbH	Austria
Hansgrohe N.V.	Belgium
Hansgrohe Brasil Metals Santitários Ltda.	Brazil
Hansgrohe Sanitary Products (Shanghai) Co. Ltd.	China
Hansgrohe d.o.o.	Croatia
Hansgrohe CS, s.r.o.	Czech Republic
Hansgrohe A/S	Denmark
Hansgrohe Wasselonne, S.A.	France
Hansgrohe S. á r.l.	France
Hansgrohe, Inc.	Georgia
Hansgrohe Kft.	Hungary
Hansgrohe India Private Ltd.	India
Hansgrohe s.r.l.	Italy
Hansgrohe Japan K.K	Japan
Hansgrohe S. de R. L. de C. V.	Mexico
Hansgrohe B.V.	Netherlands

(7) Also conducts business under the assumed name Delta Faucet Canada.
(8) Masco Beteiligungsgesellschaft mbH owns 68.35%

NAME	JURISDICTION OF FORMATION
Hansgrohe Sp. z.o.o.	Poland
Hansgrohe Sanitary Products W.L.L. **(9)**	Qatar
Hansgrohe SA (Pty) Ltd.	Republic of South Africa
Hansgrohe ooo	Russia
Hans Grohe Pte. Ltd.	Singapore
Hansgrohe S.A.U.	Spain
Hansgrohe A.B.	Sweden
Hansgrohe AG	Switzerland
Hansgrohe Armature Sanayi ve Ticaret Limited Sirketi	Turkey
Hansgrohe Ltd.	United Kingdom
Hansgrohe SUCC	Morocco
Mirolin Industries Corp.	Ontario
Tempered Products Inc.	Taiwan
Watkins Europe BVBA	Belgium
Peerless Sales Corporation	Delaware
Masco Framing Corp.	Delaware
Masco Home Products S. á r.l.	Luxembourg
Masco Home Products Private Limited	India
Masco Singapore Pte. Ltd.	Singapore
Delta Faucet Company India Private Limited	India
Masco Retail Sales Support, Inc.	Delaware
Liberty Hardware Retail & Design Services LLC	Delaware
Masco HD Support Services, LLC	Delaware
Masco WM Support Services, LLC	Delaware
Mascomex S.A. de C.V.	Mexico
Mercury Plastics, LLC	Delaware
Milgard Manufacturing Incorporated **(10)**	Washington
My Service Center, Inc.	Delaware
NCFII Holdings Inc.	Delaware
Vapor Technologies, Inc.	Delaware
Vapor Technologies Shenzhen Co. Ltd.	China
Watkins Manufacturing Corporation **(11)**	California
Hot Spring Spa Australasia Pty Ltd **(12)**	Australia
Hot Spring Spas New Zealand Limited **(13)**	New Zealand
Tapicerias Pacifico, SA de CV	Mexico
Wellness Marketing Corporation **(14)**	Delaware

(9) Hansgrohe International Gmbh owns 49%
(10) Also conducts business under the assumed names Milgard Windows and Doors.
(11) Also conducts business under the assumed names Caldera Spas, Custom Fiber Engineering, Inc., Hot Spring Spas and Watkins Wellness.
(12) Masco Corporation effective ownership is 51.00% of which Watkins Manufacturing Corporation owns 50.00%.
(13) Masco Corporation effective ownership is 51.00% of which Watkins Manufacturing Corporation owns 50.00%.
(14) Also conducts business under the assumed name Endless Pools.

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We hereby consent to the incorporation by reference in the Registration Statements on Form S-3 (No. 333-209514) and Form S-8 (Nos. 33-42229, 333-64573, 333-74815, 333-37338, 333-110102, 333-126888, 333-162766, 333-168827, 333-168829, 333-195713 and 333-211493) of Masco Corporation of our report dated February 7, 2019 relating to the financial statements, financial statement schedule and the effectiveness of internal control over financial reporting, which appears in this Form 10-K.

/s/ PricewaterhouseCoopers LLP
Detroit, Michigan
February 7, 2019

Exhibit 31.a

MASCO CORPORATION
Certification Required by Rule 13a-14(a) or 15d-14(a)
of the Securities Exchange Act of 1934

I, Keith J. Allman, certify that:

1. I have reviewed this annual report on Form 10-K of Masco Corporation (“the registrant”);

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant’s other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

a) designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared; and

b) designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles; and

c) evaluated the effectiveness of the registrant’s disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

d) disclosed in this report any change in the registrant’s internal control over financial reporting that occurred during the registrant’s most recent fiscal quarter (the registrant’s fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant’s internal control over financial reporting;

5. The registrant’s other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant’s auditors and the audit committee of the registrant’s board of directors (or persons performing the equivalent functions):

a) all significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant’s ability to record, process, summarize and report financial information; and

b) any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant’s internal control over financial reporting.

Date: February 7, 2019	By:	/s/ Keith J. Allman
		Keith J. Allman
		President and Chief Executive Officer

Exhibit 31.b

MASCO CORPORATION
Certification Required by Rule 13a-14(a) or 15d-14(a)
of the Securities Exchange Act of 1934

I, John G. Sznewajs, certify that:

1. I have reviewed this annual report on Form 10-K of Masco Corporation (“the registrant”);

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant’s other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

a) designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared; and

b) designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles; and

c) evaluated the effectiveness of the registrant’s disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

d) disclosed in this report any change in the registrant’s internal control over financial reporting that occurred during the registrant’s most recent fiscal quarter (the registrant’s fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant’s internal control over financial reporting;

5. The registrant’s other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant’s auditors and the audit committee of the registrant’s board of directors (or persons performing the equivalent functions):

a) all significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant’s ability to record, process, summarize and report financial information; and

b) any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant’s internal control over financial reporting.

Date: February 7, 2019

By: /s/ John G. Sznewajs
John G. Sznewajs
Vice President, Chief Financial Officer

Exhibit 32

MASCO CORPORATION
Certification Required by Rule 13a-14(b) or 15d-14(b)
of the Securities Exchange Act of 1934 and
Section 1350 of Chapter 63 of Title 18 of the
United States Code

The certification set forth below is being submitted in connection with the Masco Corporation Annual Report on Form 10-K for the period ended December 31, 2018 (the “Report”) for the purpose of complying with Rule 13a-14(b) or Rule 15d-14(b) of the Securities Exchange Act of 1934 (the “Exchange Act”) and Section 1350 of Chapter 63 of Title 18 of the United States Code.

Keith J. Allman, the President and Chief Executive Officer, and John G. Sznewajs, the Vice President, Chief Financial Officer, of Masco Corporation, each certifies that, to the best of his knowledge:

1. The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

2. The information contained in the Report fairly presents, in all material respects, the consolidated financial condition and results of operations of Masco Corporation.

Date:	February 7, 2019	/s/ Keith J. Allman	
		Name:	Keith J. Allman
		Title:	President and Chief Executive Officer
Date:	February 7, 2019	/s/ John G. Sznewajs	
		Name:	John G. Sznewajs
		Title:	Vice President, Chief Financial Officer