**UNITED STATES**
**SECURITIES AND EXCHANGE COMMISSION**
**Washington, D.C. 20549**

# FORM 10-K

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

**For the fiscal year ended December 31, 2019**
**or**

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

**For the transition period from _____ to _____**
**Commission file number 1-4347**

# ROGERS CORPORATION

(Exact name of registrant as specified in its charter)

| **Massachusetts** | **06-0513860** |
|---|---|
| (State or other jurisdiction of incorporation or organization) | (I. R. S. Employer Identification No.) |

**2225 W. Chandler Blvd., Chandler, Arizona 85224-6155**
(Address of Principal Executive Offices) (Zip Code)
Registrant's telephone number, including area code: **(480) 917-6000**

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

| Title of each class | Trading Symbol(s) | Name of each exchange on which registered |
|---|---|---|
| **Common Stock, par value $1.00 per share** | **ROG** | **New York Stock Exchange** |

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

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

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

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (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 whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer", "accelerated filer", "smaller reporting company", and "emerging growth company" in Rule 12b-2 of the Exchange Act.

| | |
|---|---|
| Large accelerated filer ☒ | Accelerated filer ☐ |
| Non-accelerated filer ☐ | Smaller reporting company ☐ |
| | Emerging growth company ☐ |

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

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

The aggregate market value of the voting common equity held by non-affiliates as of June 28, 2019, the last business day of the registrant's most recently completed second fiscal quarter, was approximately $3,172,358,484. Rogers has no non-voting common equity. The number of shares outstanding of common stock as of February 14, 2020 was 18,613,717.

**Documents Incorporated by Reference:**

Portions of Rogers' Definitive Proxy Statement for its 2020 Annual Meeting of Shareholders, currently scheduled for May 7, 2020, are incorporated by reference into Part III of this Form 10-K.

**ROGERS CORPORATION**
**FORM 10-K**

**December 31, 2019**

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**Part I**

## Item 1. Business

As used herein, the "Company," "Rogers," "we," "us," "our" and similar terms include Rogers Corporation and its subsidiaries, unless the context indicates otherwise.

### *Forward-Looking Statements*

This Annual Report on Form 10-K includes "forward-looking statements" within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended (the Exchange Act). Such statements are generally accompanied by words such as "anticipate," "assume," "believe," "could," "estimate," "expect," "foresee," "goal," "intend," "may," "might," "plan," "potential," "predict," "project," "should," "seek," "target" or similar expressions that convey uncertainty as to future events or outcomes. Forward-looking statements are based on assumptions and beliefs that we believe to be reasonable; however, assumed facts almost always vary from actual results, and the differences between assumed facts and actual results could be material depending upon the circumstances. Where we express an expectation or belief as to future results, that expectation or belief is expressed in good faith and based on assumptions believed to have a reasonable basis. We cannot assure you, however, that the stated expectation or belief will occur or be achieved or accomplished. Among the factors that could cause our results to differ materially from those indicated by forward-looking statements are risks and uncertainties inherent in our business including, without limitation:

- failure to capitalize on, volatility within, or other adverse changes with respect to the Company's growth drivers, including advanced mobility and advanced connectivity, such as delays in adoption or implementation of new technologies;
- uncertain business, economic and political conditions in the United States (U.S.) and abroad, particularly in China, South Korea, Germany, Hungary and Belgium, where we maintain significant manufacturing, sales or administrative operations;
- the trade policy dynamics between the U.S. and China reflected in trade agreement negotiations and the imposition of tariffs and other trade restrictions, including trade restrictions on Huawei Technologies Co., Ltd. (Huawei);
- fluctuations in foreign currency exchange rates;
- our ability to develop innovative products and the extent to which they are incorporated into end-user products and systems;
- the extent to which end-user products and systems incorporating our products achieve commercial success;
- the ability of our sole or limited source suppliers to deliver certain key raw materials, including commodities, to us in a timely and cost-effective manner;
- intense global competition affecting both our existing products and products currently under development;
- business interruptions due to catastrophes or other similar events, such as natural disasters, war, terrorism or public health crises;
- failure to realize, or delays in the realization of, anticipated benefits of acquisitions and divestitures due to, among other things, the existence of unknown liabilities or difficulty integrating acquired businesses;
- our ability to attract and retain management and skilled technical personnel;
- our ability to protect our proprietary technology from infringement by third parties and/or allegations that our technology infringes third party rights;
- changes in effective tax rates or tax laws and regulations in the jurisdictions in which we operate;
- failure to comply with financial and restrictive covenants in our credit agreement or restrictions on our operational and financial flexibility due to such covenants;
- the outcome of ongoing and future litigation, including our asbestos-related product liability litigation;
- changes in environmental laws and regulations applicable to our business; and
- disruptions in, or breaches of, our information technology systems.

Our forward-looking statements are expressly qualified by these cautionary statements, which you should consider carefully, along with the risks discussed under the headings "Item 1A. Risk Factors" and "Item 7. Management's Discussion and Analysis of Results of Operations and Financial Position" and elsewhere in this report, any of which could cause actual results to differ materially from historical results or anticipated results. We undertake no obligation to update or revise any forward-looking statements, whether as a result of new information, future events or otherwise, unless required by law.

### *Overview*

Rogers Corporation designs, develops, manufactures and sells high-performance and high-reliability engineered materials and components to meet our customers' demanding challenges. We operate three strategic operating segments: Advanced Connectivity Solutions (ACS), Elastomeric Material Solutions (EMS) and Power Electronics Solutions (PES). The remaining operations, which represent our non-core businesses, are reported in the Other operating segment. We have a history of innovation and have established

Innovation Centers for our research and development activities in Chandler, Arizona; Burlington, Massachusetts; Eschenbach, Germany; and Suzhou, China. We are headquartered in Chandler, Arizona.

***Growth Strategy and Recent Acquisitions***

Our growth strategy is based upon the following principles: (1) market-driven organization, (2) innovation leadership, (3) synergistic mergers and acquisitions, and (4) operational excellence. As a market-driven organization, we are focused on growth drivers, including advanced mobility and advanced connectivity. More specifically, the key trends currently affecting our business include the increasing use of advanced driver assistance systems (ADAS) and increasing electrification of vehicles, including electric and hybrid electric vehicles (EV/HEV), in the automotive industry and new technology adoption in the telecommunications industry, including next generation wireless infrastructure. In addition to our focus on advanced mobility and advanced connectivity in the automotive and telecommunications industries, we sell into a variety of other markets including general industrial, portable electronics, connected devices, aerospace and defense, mass transit and renewable energy.

Our sales and marketing approach is based on addressing these trends, while our strategy focuses on factors for success as a manufacturer of engineered materials and components: performance, quality, service, cost, efficiency, innovation and technology. We have expanded our capabilities through organic investment and acquisitions and strive to ensure high quality solutions for our customers. We continue to review and re-align our manufacturing and engineering footprint in an effort to attain a leading competitive position globally. We have established or expanded our capabilities in various locations in support of our customers' growth initiatives.

We seek to enhance our operational and financial performance by investing in research and development, manufacturing and materials efficiencies, and new product initiatives that respond to the needs of our customers. We strive to evaluate operational and strategic alternatives to improve our business structure and align our business with the changing needs of our customers and major industry trends affecting our business.

In executing on our growth strategy, we have completed the following strategic acquisitions in the last two fiscal years: (1) in July 2018, we acquired Griswold LLC (Griswold), a manufacturer of a wide range of high-performance engineered cellular elastomer and microcellular polyurethane products and solutions and (2) in August 2018, we acquired a production facility and related machinery and equipment located in Chandler, Arizona from Isola USA Corp (Isola).

***Operating Segments***

*Advanced Connectivity Solutions*

Our ACS operating segment designs, develops, manufactures and sells circuit materials and solutions enabling high-performance and high-reliability connectivity for applications in wireless infrastructure (e.g., power amplifiers, antennas and small cells), automotive (e.g., ADAS, telematics and thermal solutions), aerospace and defense (e.g. antenna systems, communication systems and phased array radar systems), connected devices (e.g., mobile internet devices and thermal solutions) and wired infrastructure (e.g., computing and IP infrastructure) markets. We believe these products have characteristics that offer performance and other functional advantages in many market applications that serve to differentiate our products from other commonly available materials. ACS products are sold principally to independent and captive printed circuit board fabricators that convert our laminates to custom printed circuits. Trade names for our ACS products include: RO4000® Series, RO3000® Series, RT/duroid®, CLTE Series®, AD Series®, CuClad® Series, TMM®, Kappa®, XTremeSpeed RO1200™ Laminates, DiClad® Series, IsoClad® Series, COOLSPAN®, MAGTREX™, TC Series®, IM Series™, 92ML™, 2929 Bondply and 3001 Bondply Film. As of December 31, 2019, our ACS operating segment had manufacturing and administrative facilities in Chandler, Arizona; Rogers, Connecticut; Bear, Delaware; Evergem, Belgium; and Suzhou, China.

*Elastomeric Material Solutions*

Our EMS operating segment designs, develops, manufactures and sells engineered material solutions for a wide variety of applications and markets. These include polyurethane and silicone materials used in cushioning, gasketing and sealing, and vibration management applications for general industrial, portable electronics, automotive, mass transit, aerospace and defense, footwear and impact mitigation and printing markets; customized silicones used in flex heater and semiconductor thermal applications for general industrial, portable electronics, automotive, mass transit, aerospace and defense and medical markets; polytetrafluoroethylene and ultra-high molecular weight polyethylene materials used in wire and cable protection, electrical insulation, conduction and shielding, hose and belt protection, vibration management, cushioning, gasketing and sealing, and venting applications for general industrial, automotive and aerospace and defense markets. We believe these materials have characteristics that offer functional advantages in many market applications which serve to differentiate Rogers' products from other commonly available materials. EMS products are sold globally to converters, fabricators, distributors and original equipment manufacturers (OEMs). Trade names for our EMS products include: PORON®, BISCO®, DeWAL®, ARLON®, eSorba®, Griswold®, Diversified Silicone Products®, XRD®, R/bak® and HeatSORB™.

As of December 31, 2019, our EMS operating segment had administrative and manufacturing facilities in Moosup, Connecticut; Rogers, Connecticut; Woodstock, Connecticut; Bear, Delaware; Carol Stream, Illinois; Narragansett, Rhode Island; Ansan, South

Korea; and Suzhou, China. We also own 50% of two unconsolidated joint ventures: (1) Rogers Inoac Corporation (RIC), a joint venture established in Japan to design, develop, manufacture and sell PORON products predominantly for the Japanese market and (2) Rogers INOAC Suzhou Corporation (RIS), a joint venture established in China to design, develop, manufacture and sell PORON products primarily for RIC customers in various Asian countries. INOAC Corporation owns the remaining 50% of both RIC and RIS. RIC has manufacturing facilities at the INOAC facilities in Nagoya and Mie, Japan, and RIS has manufacturing facilities at Rogers' facilities in Suzhou, China.

*Power Electronics Solutions*

Our PES operating segment designs, develops, manufactures and sells ceramic substrate materials, busbars and cooling solutions for a variety of applications in EV/HEV, general industrial, mass transit, renewable energy, aerospace and defense and wired infrastructure markets. We sell our ceramic substrate materials and cooling solutions under the curamik® trade name and our busbars under the ROLINX® trade name. As of December 31, 2019, our PES operating segment had manufacturing and administrative facilities in Evergem, Belgium; Eschenbach, Germany; Budapest, Hungary; and Suzhou, China.

*Other*

Our Other operating segment consists of elastomer components for applications in general industrial market, as well as elastomer floats for level sensing in fuel tanks, motors, and storage tanks applications in the general industrial and automotive markets. We sell our elastomer components under our ENDUR® trade name and our floats under our NITROPHYL® trade name.

***Sales and Competition***

We sell our materials and components primarily through direct sales channels positioned near major concentrations of our customers in North America, Europe and Asia. We sold to approximately 4,400 customers worldwide in 2019, primarily OEMs and component suppliers. No individual customer represented more than 10% of our total net sales for 2019; however, there are concentrations of OEM customers in our ACS (Chinese telecommunications equipment manufacturers) and PES (semiconductor and automotive manufacturers) operating segments. Although the loss of any one of our larger customers would require a period of adjustment, during which the results of operations could be materially adversely impacted, we believe that such events could be successfully mitigated over a period of time due to the diversity of our customer base.

We employ a technical sales and marketing approach pursuant to which we work collaboratively to provide design engineering, testing, product development and other technical support services to OEMs that incorporate our engineered materials and components in their products. Component suppliers convert, modify or otherwise incorporate our engineered materials and components into their components for these OEMs in accordance with their specifications. Accordingly, we provide similar technical support services to component suppliers.

We compete primarily with manufacturers of high-end materials, some of which are large, multi-national companies, principally on the basis of innovation, historical customer relationships, product quality, reliability, performance and price, technical and engineering service and support, breadth of product line, and manufacturing capabilities. We also compete with manufacturers of commodity materials, including smaller regional producers with lower overhead costs and profit requirements located in Asia that attempt to upsell their products based principally upon price, particularly for products that have matured in their life cycle. We believe that we have a competitive advantage because of our reputation for innovation, the performance, quality and reliability of our materials and components, and our commitment to technical support and customer service.

***Research and Development***

We have a history of innovation, and innovation leadership is a key component of our overall business strategy. The markets we serve are typically characterized by rapid technological changes and advances. Accordingly, the success of our strategy is in part dependent on our ability to develop market-leading products, which is primarily driven by efforts in research and development. We are focused on identifying technologies and innovations related to both our current product portfolio as well as initiatives targeted at further diversifying and growing our business. As part of this technology commitment, we have a Rogers Innovation Center co-located at Northeastern University in Burlington, Massachusetts, as well as Rogers Innovation Centers at our facilities in Chandler, Arizona, Eschenbach, Germany and Suzhou, China. Our Innovation Centers focus on early stages of technical and commercial development of new high-tech materials solutions in an effort to align with market direction and needs.

***Patents and Other Intellectual Property***

We have many domestic and foreign patents, licenses and additional patent applications pending related to technology in each of our operating segments. These patents and licenses vary in duration and provide some protection from competition. We also own a number of registered and unregistered trademarks and have acquired and developed certain confidential and proprietary technologies, including trade secrets that we believe to be of some importance to our business.

While we believe our patents and other intellectual property provide a competitive advantage to our operating segments, we believe that a significant part of our competitive position and future success will be determined by factors such as the innovative skills,

systems and process knowledge, and technological expertise of our personnel; the range of new products we develop; and our customer service and support.

***Manufacturing and Raw Materials***

The key raw materials used in our business are as follows: for our ACS operating segment, copper, polymer, polytetraflouroethylene and fiberglass materials; for our EMS operating segment, polyurethane, polytetraflouroethylene, polyethylene, silicone and natural rubber materials; and for our PES operating segment, copper, ceramic and brazing paste materials.

Some of the raw materials used in our business are available through sole or limited-source suppliers. While we have undertaken strategies to mitigate the risks associated with sole or limited source suppliers, these strategies may not be effective in all cases, and price increases or disruptions in our supply of raw materials could have a material adverse impact on our business. For additional information, refer to "Item 1A. Risk Factors."

***Seasonality***

Except for some minor seasonality for consumer products, which often aligns with year-end holidays and product launch cycles, the operations of our segments have not been seasonal.

***Our Employees***

As of December 31, 2019, we employed approximately 3,600 people.

***Backlog***

Our backlog of firm orders was $130.6 million as of December 31, 2019, compared to $152.8 million as of December 31, 2018. The $22.1 million year-over-year decrease in backlog was mainly comprised of decreases in the backlog for our EMS and PES operating segments of $9.1 million and $8.7 million, respectively. The decrease in the backlog for our EMS operating segment was primarily due to lower outstanding orders year-over-year attributable to the general industrial market. The decrease in the backlog for our PES operating segment was primarily due to lower outstanding orders year-over-year attributable to the general industrial and mass transit markets. The backlog of firm orders is expected to be filled within the next 12 months.

***Information About Our Executive Officers***

Our executive officers as of February 20, 2020 were as follows:

| Name | Age | Present Position | Year Appointed to Present Position | Other Relevant Positions Held |
|---|---|---|---|---|
| Bruce D. Hoechner | 60 | President and Chief Executive Officer, Director, Principal Executive Officer | 2011 | |
| Michael M. Ludwig | 58 | Senior Vice President, Chief Financial Officer and Treasurer, Principal Financial Officer | 2018 | Senior Vice President and Chief Financial Officer, FormFactor, Inc., from May 2011 to March 2018. |
| Jonathan J. Rowntree | 48 | Senior Vice President and General Manager, Advanced Connectivity Solutions | 2019 | Senior Vice President and Global Head of Industrial Electronics, Henkel Electronic Materials, from January 2017 to May 2019; Senior Vice President and General Manager, Henkel Electronic Materials, from July 2015 to December 2016; Global Product Management, Henkel Electronic Materials, from 2010 to June 2015. |
| R. Colin Gouveia | 56 | Senior Vice President and General Manager, Elastomeric Material Solutions | 2019 | Vice President and General Manager, Eastman Chemical Co., from December 2014 to June 2019; Executive Vice President & President of North America, Taminco, from August 2012 to December 2014. |
| Jeff Tsao | 41 | Vice President and General Manager, Power Electronics Solutions | 2019 | Vice President, Rogers Corporation, from December 2018 to September 2019; Global Sales Director, Rogers Corporation, from August 2017 to November 2018; General Manager, Dow Chemical, from March 2015 to May 2017; Global Marketing Director, Dow Chemical, from March 2012 to March 2015. |
| Peter B. Williams | 57 | Senior Vice President, Global Operations and Supply Chain | 2019 | Vice President of Global Operations, MKS Instruments, 2011 to July 2019. |
| Robert C. Daigle | 56 | Senior Vice President and Chief Technology Officer | 2009 | |
| Jay B. Knoll | 56 | Senior Vice President, Corporate Development, General Counsel and Secretary | 2017 | Vice President and General Counsel, Rogers Corporation, from November 2014 to February 2017; Senior Vice President, General Counsel PKC Group Oyj - North America, from June 2012 to November 2014. |
| Benjamin M. Buckley | 47 | Vice President and Chief Human Resources Officer | 2019 | Associate General Counsel and Director of Global Compliance and Integrity, Rogers Corporation, from October 2014 to January 2019. President and Chief Executive Officer, Verge America Ltd., from May 2013 to October 2014. |

***Available Information***

We make available on our website (http://www.rogerscorp.com), or through a link posted on our website, free of charge, our annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, reports filed by our executive officers and directors pursuant to Section 16 of the Exchange Act, and amendments to those reports filed pursuant to Section 13(a) or 15(d) of the Exchange Act as soon as reasonably practicable after we electronically file such material with, or furnish it to, the Securities and Exchange Commission (SEC). In addition, the SEC maintains an internet site that contains these reports, proxy and information statements, and other information regarding issuers that file electronically with the SEC (http://www.sec.gov).

We also make available on our website the charters for our Audit Committee, Compensation and Organization Committee, and Nominating and Governance Committee, in addition to our Corporate Governance Guidelines, Bylaws, Code of Business Ethics, and Compensation Recovery Policy. Our website is not incorporated into or a part of this Form 10-K.

**Item 1A. Risk Factors**

Our business, results of operations and financial position are subject to various risks, including those discussed below, which may affect the value of our capital stock. The following risk factors, which we believe represent the most significant factors that may make an investment in our capital stock risky, may cause our actual results to differ materially from those projected in any forward-looking statement. You should carefully consider these factors, as well as the other information contained in this Annual Report on Form 10-K, including the information set forth in "Item 1. Business - Forward-Looking Statements" and "Item 7. Management's Discussion and Analysis of Results of Operations and Financial Position," when evaluating an investment in our capital stock.

***Failure to capitalize on, volatility within, or other adverse changes with respect to the Company's growth drivers, including advanced mobility and advanced connectivity, may adversely affect our business.***

We derived approximately 24% and 27% of our net sales for the year ended December 31, 2019 from sales relating to the key market growth drivers of advanced mobility and advanced connectivity, respectively. These growth drivers are served by our direct and indirect customers in a variety of markets, including automotive (i.e. ADAS) and EV/HEV, wireless infrastructure and portable electronics. These growth drivers, as well as specific market and industry trends within them, may be volatile, cyclical and sensitive to a variety of factors, including general economic conditions, technology disruptions, consumer preferences and political priorities. Adverse or cyclical changes to and within these growth drivers, such as delays in adoption or implementation of new technologies, has resulted in, and may continue to result in, reduced demand for certain of our products, production overcapacity, increased inventory levels and related risks of obsolescence, as well as price erosion, ultimately leading to a decline in our operating results. Acceleration within these growth drivers and corresponding rapid increases in demand for certain products may also require us to make significant capital investments or acquisitions in order to increase production levels and to maintain customer relationships and market positions. However, we may not be able to increase our production levels with sufficient speed or efficiency to capitalize on such increases in demand.

***We have extensive international operations, and events and circumstances that have general international consequence or specific impact in the countries in which we operate may materially adversely affect our business.***

For the year ended December 31, 2019, approximately 71% of our net sales resulted from sales in foreign markets, with approximately 49% and 21% of such net sales occurring in Asia and Europe, respectively. We expect our net sales in foreign markets to continue to represent a substantial majority of our consolidated net sales. We maintain significant manufacturing and administrative operations in China, Belgium, Germany, South Korea and Hungary, and approximately 61% of our employees were located outside the U.S. as of December 31, 2019. Risks related to our extensive international operations include the following:

- foreign currency fluctuations, particularly in the value of the euro, the Chinese renminbi, the South Korean won, the Japanese yen and the Hungarian forint against the U.S. dollar;
- economic and political instability due to regional or country-specific events or changes in relations between the U.S. and the countries in which we operate;
- accounts receivable practices across countries, including longer payment cycles;
- export control or customs matters, including tariffs and trade restrictions;
- changes in multilateral and bilateral trade relations
- complications in complying, and failure to comply, with a variety of laws and regulations applicable to our foreign operations, including due to unexpected changes in the laws or regulations of the countries in which we operate;
- failure to comply with the Foreign Corrupt Practices Act or other applicable anti-corruption laws;
- greater difficulty protecting our intellectual property;
- compliance with foreign employment regulations, as well as work stoppages and labor and union disputes.

The foregoing risks may be particularly acute in emerging markets such as China and India, where our operations are subject to greater uncertainty due to increased volatility associated with the developing nature of the economic, legal and governmental systems of these countries, changes in bilateral and multilateral arrangements with the U.S. and other governments, and challenges that some multinational customers that are headquartered in emerging markets may have complying fully with U.S. and other developed market extraterritorial regulations. In addition, our business has been, and may continue to be, adversely affected by the lack of development, or disruptions, of transportation or other critical infrastructure, including wireless infrastructure, in emerging markets. If we are unable to successfully manage the risks associated with expanding our global business, or to adequately manage operational fluctuations, it may materially adversely affect our business, results of operations and financial position.

***Deteriorating trade relations between the U.S. and China, other trade conflicts and barriers, economic sanctions, and Chinese policies to decrease dependence on foreign suppliers could limit or prevent certain existing or potential customers from doing business with us and materially adversely affect our business.***

The increased trade conflicts between the U.S. and its major trading partners, evidenced by trade restrictions such as tariffs, taxes, export controls, economic sanctions, and enhanced policies designed to protect national security, could adversely impact our business. In particular, we have experienced and expect that we may in the future experience impacts on our business due to the increase in trade conflicts between the U.S. and China. In May 2019, the U.S. Department of Commerce designated Huawei to its

"entity list," which limits the ability of U.S. companies to export products and license technologies to Huawei. We generally sell our products to fabricators that are not subject to such limitations, which incorporate them into products they sell to Huawei. Although the impact of the Huawei export controls on 5G demand and the demand for our products is currently uncertain, such export controls, as well as retaliatory controls and tariffs that China has imposed and which remain in place to a certain extent under the Phase 1 agreement reached between the U.S. and China on January 15, 2020, could restrict our ability to do business with Huawei and other Chinese customers. Further U.S. government actions to protect domestic economic and security interests could lead to further restrictions. China continues to be a fast-developing market, and an area of potential growth for us. Sales to customers located in China and the Asia Pacific region have typically accounted for nearly half of our total sales and a substantial majority of our overall sales to customers located outside the U.S. In addition, certain of the end products created in China that incorporate our products are ultimately sold outside of the Asia Pacific region. We expect that revenue from these sales generally, and sales to China and the Asia Pacific region specifically, will continue to be a material component of our total revenue. Therefore, any financial crisis, trade war or dispute or other major event causing business disruption in international jurisdictions generally, and China and the Asia Pacific region in particular, could negatively affect our business, results of operations and financial position.

China's stated policy of reducing its dependence on foreign manufacturers and technology companies has resulted and may continue to result in reduced demand for our products in China. These trends could have a material adverse impact on our business, results of operations and financial position. In addition, there are risks that the Chinese government may, among other things, require the use of local suppliers, compel companies that do business in China to partner with local companies to conduct business, or provide incentives to government-backed local customers to buy from local suppliers rather than companies like ours, all of which could adversely impact our business, results of operations and financial position.

***Our business is dependent upon our development of innovative products and our customers' incorporation of those products into end user products and systems that achieve commercial success.***

As a manufacturer and supplier of engineered materials and components, our business depends upon our ability to innovate and sell our materials and components for inclusion in other products that are developed, manufactured and sold by our customers. We strive to differentiate our products and secure long-term demand through our engagement with our customers to design in our materials and components as part of their product development processes. The value of any design-in largely depends upon the decision of our customers to manufacture their products or systems in sufficient production quantities, the commercial success of the end product and the extent to which the design of our customers' products or systems could accommodate substitution of competitor products. A consistent failure to introduce new products in a timely manner, achieve design-ins or achieve market acceptance on commercially reasonable terms could materially adversely affect our business, results of operations and financial position. The introduction of new products presents particularly significant business challenges in our business because product development commitments and expenditures must be made well in advance of product sales.

***Our dependence on sole or limited source suppliers for certain of our raw materials could materially adversely affect our ability to manufacture products and materially increase our costs.***

We rely on sole and limited source suppliers for certain of the raw materials that are critical to the manufacturing of our products. This reliance subjects us to risks related to our potential inability to obtain an adequate supply of required raw materials, particularly given our use of lean manufacturing and just-in-time inventory techniques, and our reduced control over pricing and timing of delivery of raw materials. Our operating results could be materially adversely affected if we were unable to obtain adequate supplies of these materials in a timely manner or if their cost increased significantly.

While we believe we could obtain and qualify alternative sources for most sole and limited source supplier materials if necessary, the transition time could be long, particularly if the change requires us to redesign our systems. Ultimately, we may be unable to redesign our systems, which could further increase delays or prevent us from manufacturing our products at all. Even if a system redesign is feasible, increased costs associated with such a redesign would decrease our profit margins, perhaps materially, if we could not effectively pass such costs along to our customers. Further, it would likely result in production and delivery delays, which could lead to lost sales and damage to our relationships with current and potential customers.

***We face intense global competition, which could reduce demand for our products or create additional pricing pressure on our products.***

We operate in a highly competitive global environment and compete with domestic and international companies principally on the basis of the following:

- innovation;
- historical customer relationships;
- product quality, reliability, performance and price;
- technical and engineering service and support;
- breadth of product line; and
- manufacturing capabilities.

Our competitors include commodity materials suppliers, which offer product substitutions based mostly on price, and suppliers of alternate solutions, which offer product substitutions or eliminations based mostly on disruptive technology. Certain of these competitors have greater financial and other resources than we have and, in some cases, these competitors are well established in specific product niches. We expect that our competitors will continue to improve the design and performance of their products, which could result in the development of products that offer price or performance features superior to our products. Furthermore, our customers may engage in internal manufacturing of products that may result in reduced demand for our products. If we are unable to maintain our competitive advantage for any reason, demand for our products may be materially reduced, which may adversely affect our business, results of operations and financial position.

***We have engaged in transactions in the past and may in the future acquire or dispose of businesses, or engage in other transactions, which expose us to a variety of risks that could materially adversely affect our business operating results and financial position.***

From time to time, we have explored and pursued transaction opportunities that we believe complement our core businesses, and we expect to do so again in the future. We have also divested and may again consider divesting businesses or assets that we do not regard as part of our core businesses. These transaction opportunities may come in the form of acquisitions, joint ventures, investments, divestitures or other structures. There are risks associated with such transactions, including, without limitation, general business risk, technology risk, market acceptance risk, litigation risk, environmental risk, regulatory approval risk and risks associated with the failure to complete announced transactions. In the case of acquisitions, we may not be able to discover, during the due diligence process or otherwise, all known and unknown risks associated with the business we are acquiring, including the existence of liabilities. We may spend a significant portion of available cash, incur substantial debt or issue equity securities, which would dilute current shareholders' equity ownership, to pay for the acquisitions. In addition, if we are unsuccessful in integrating any acquired company or business into our operations or if integration is more difficult than anticipated, we may experience disruptions that could harm our business and result in our failure to realize the anticipated benefits of the acquisitions. In the case of divestitures, we may agree to indemnify acquiring parties for known or unknown liabilities arising from the businesses we are divesting. We have incurred, and may in the future incur, significant costs in the pursuit and evaluation of transactions that we do not consummate for a variety of reasons.

As a result, these transactions may not ultimately create value for us or our shareholders and may harm our reputation and materially adversely affect our business, results of operations and financial position.

***Our business may be materially adversely affected if we cannot protect our proprietary technology or if we infringe the proprietary rights of others.***

Our proprietary technology supports our ability to compete effectively with other companies, and we seek to protect our intellectual property rights by obtaining domestic and foreign patents, trademarks and copyrights, and maintaining trade secrets for our manufacturing processes. It is possible, however, that our efforts to obtain such protection in the U.S. and abroad will be unsuccessful or that the protection afforded will not be sufficiently broad to protect our technology.

Even if domestic and foreign laws do grant initial protection to our technology, our competitors or other third parties may subsequently obtain and unlawfully copy, use or disclose our technologies, products, and processes. We believe that the risk of piracy of our technology is particularly acute in the foreign countries in which we operate. In circumstances in which we conclude that our proprietary technology has been infringed, we have pursued, and may again pursue, litigation to enforce our rights. The defense and prosecution of intellectual property infringement suits are both costly and time consuming, even if the outcome is favorable to us. If we are not successful in protecting our proprietary technology or if the protection afforded to us is not sufficiently broad, our competitors may be able to manufacture and offer products substantially similar to our own, thereby reducing demand for our products and adversely affecting our results of operations and financial position. We may also be adversely affected by, and subject to increased competition as a result of, the normal expiration of our issued patents.

Our competitors or other third parties may also assert infringement or invalidity claims against us in the future. In addition to the significant costs associated with such suits, as noted above, an adverse outcome could subject us to significant liabilities to third parties and require us to license rights from third parties or cease selling our products. Any of these events may have a material adverse effect on our business, results of operations and financial position.

***The failure to attract and retain specialized technical and management personnel could impair our expected growth and future success.***

We depend upon the continued services and performance of key executives, senior management and skilled technical personnel, particularly our sales engineers and other professionals with significant experience in the key industries we serve. Competition for these personnel from other companies, academic institutions and government entities is intense, and our expected growth and future success will depend, in large part, upon our ability to attract and retain these individuals.

***As a multinational corporation doing business in the U.S. and various foreign jurisdictions, changes in tax laws or exposures to additional tax liability could negatively impact our operating results.***

As a result of the variability and uncertainty in global taxation, we are subject to a wide variety of tax-related risks, any of which could provoke changes in our global structure, international operations or intercompany agreements, which could materially reduce our net income in future periods or result in restructuring costs, increased effective tax rates and other expenses. Given the global nature of our business, a number of factors may increase our effective tax rates or otherwise subject us to additional tax liability, including:

- decisions to redeploy foreign earnings outside of their country of origin for which we have not previously provided for income taxes;
- increased scrutiny of our transactions by taxing authorities;
- changes in the geographic mix of our profits among jurisdictions with differing statutory income tax rates;
- ability to utilize, or changes in the valuation of, deferred tax assets; and
- changes in tax laws, regulations and interpretations thereof or issuance of new interpretations of laws or regulations applicable to us.

For instance, many foreign jurisdictions are actively considering changes to existing tax laws as a result of the base erosion and profit shifting project undertaken by the Organization for Economic Co-operation and Development (OECD). If these changes are enacted, our tax obligations could increase in countries where we do business or sell our products.

***The terms of our credit agreement subject us to risks, including potential acceleration of our outstanding indebtedness if we fail to satisfy financial ratios and comply with numerous covenants.***

Our credit agreement contains, and any future debt agreements into which we enter may contain, certain financial ratios and certain restrictive covenants that, among other things, limit our ability to incur indebtedness or liens, acquire other businesses, dispose of assets, or make investments. Our ability to make scheduled payments on these borrowings and to satisfy financial ratios may be adversely affected by changes in economic or business conditions beyond our control, while the restrictive covenants to which we are subject may limit our ability to take advantage of potential business opportunities as they arise. Failure to satisfy these financial ratios or to comply with the covenants in our credit agreement would constitute a default. An uncured default with respect to one or more of our covenants could result in outstanding borrowings thereunder being declared immediately due and payable, which may also trigger an obligation to repay other outstanding indebtedness. Any such acceleration of our indebtedness would have a material adverse effect on our cash flows, financial position and results of operations.

Our credit agreement currently permits us to borrow euro-currency loans that bear interest based on the London interbank offered rate (LIBOR), plus a specified spread. In July 2017, the United Kingdom's Financial Conduct Authority, which regulates LIBOR, announced that it intends to phase out LIBOR by the end of 2021. LIBOR borrowings may become unavailable before that date, and it remains unclear what reference rate or rates might replace it. If LIBOR becomes unavailable, the credit agreement presently provides for the interest rate on our loans to convert to a higher base reference rate plus a spread. Even if we agree with our lenders to amend the credit agreement to identify a new reference rate for borrowings thereunder, this rate may be higher than our present interest rate, thereby causing the cost of our borrowings to increase.

***We may be adversely affected by litigation stemming from product liability and other claims.***

Our products may contain defects that we do not detect before sale, which may lead to warranty or damage claims against us or product recalls. We are involved in various unresolved legal matters that arise in the ordinary course of our operations or otherwise, including asbestos-related product liability claims related to our operations before the 1990s. For additional information, refer to "Item 3. Legal Proceedings" and "Note 12 – Commitments and Contingencies" to "Item 8. Financial Statements and Supplementary Data." We maintain insurance coverage with respect to certain claims, but the policy coverage limits may not be adequate or cover a particular loss. Costs associated with, among other things, the defense of, or settlements or judgments relating to, claims against us that are not covered by insurance or that result in recoveries in excess of insurance coverage may adversely affect our business, results of operations and financial position. Irrespective of insurance coverage, claims against us could divert the attention of our senior management and/or result in reputational damage, thereby adversely affecting our business.

Our projections on the potential exposure and expected insurance coverage relating to our asbestos-related product liability claims are based on a number of assumptions, including the number of new claims to be filed each year, the average cost of disposing of such claims, the length of time it takes to dispose of such claims, coverage issues among insurers and the continuing solvency of various insurance companies, as well as the numerous uncertainties surrounding asbestos litigation in the U.S. To the extent such assumptions are inaccurate, the net liabilities that we have recorded in our financial statements may fail to approximate the losses we could suffer in connection with such claims.

***We are subject to many environmental laws and regulations as well as potential environmental liabilities that could adversely affect our business.***

We are subject to a variety of federal, state, local and foreign laws, rules and regulations related to the use, storage, handling, discharge or disposal of certain toxic, volatile or otherwise hazardous chemicals, gases and other substances used in manufacturing our products. Some of these laws in the U.S. include the Federal Clean Water Act, Clean Air Act, Resource Conservation and Recovery Act, Comprehensive Environmental Response, Compensation, and Liability Act, Toxic Substances Control Act, and similar state statutes and regulations. In the European Union (EU), we are subject to the EU regulations (and their related national implementing legislation) including the Registration, Evaluation, Authorization and Restriction of Chemicals, the Regulation on the Classification, Labelling and Packaging of Substances and Mixtures and the Industrial Emissions Directive. Compliance with these laws and regulations could require us to incur substantial expenses, including in connection with the acquisition of new equipment. Any failure to comply with present or future environmental laws, rules and regulations could result in criminal and civil liabilities, fines, suspension of production or cessation of certain operations, any of which could have a material adverse effect on our business, results of operations and financial position.

In addition, some environmental laws impose liability, sometimes without fault, for investigating and/or cleaning up contamination on, or emanating from, properties currently or formerly owned, leased or operated by us, as well as for damages to property or natural resources and for personal injury arising out of such contamination. Such liability may be joint and several, meaning that we could be held responsible for more than our share of the liability involved, or even the entire liability. For additional information regarding our material legal proceedings, refer to "Note 12 – Commitments and Contingencies" to "Item 8. Financial Statements and Supplementary Data."

***If we suffer loss or disruption to our facilities, supply chains, distribution systems or information technology systems due to catastrophe or other events, our business could be seriously harmed.***

Our facilities, supply chains, distribution systems and information technology systems are subject to catastrophic loss or disruption due to fire, flood, earthquake, hurricane, public health crisis, war, terrorism or other natural or man-made disasters or events. If any of these facilities, supply chains or systems were to experience a catastrophic loss or disruption, it could disrupt our operations, delay production and shipments, result in defective products or services, damage customer relationships and our reputation and result in legal exposure and large repair or replacement expenses. For instance, the recent spread of the novel coronavirus and related quarantines and work and travel restrictions in China has disrupted, and may continue to disrupt, production of and demand for certain of our products, and the extent to which these events will affect our results of operations and financial position remains uncertain. The third-party insurance coverage that we maintain will vary from time to time in both type and amount depending on cost, availability and our decisions regarding risk retention, and may be unavailable or insufficient to protect us against losses or disruptions.

***A significant disruption in, or breach in security of, our information technology systems or violations of data protection laws could materially adversely affect our business and reputation.***

In the ordinary course of business, we collect and store confidential information, including proprietary business information belonging to us, our customers, suppliers, business partners and other third parties and personally identifiable information of our employees. We rely on information technology systems to protect this information and to keep financial records, process orders, manage inventory, coordinate shipments to customers, and operate other critical functions. Our information technology systems are susceptible to damage, disruptions or shutdowns due to power outages, hardware failures, telecommunication failures, systems upgrades and user errors. If we experience a disruption in our information technology systems, it could result in the loss of sales and customers and significant incremental costs, which could materially adversely affect our business.

We are also subject to security breaches caused by computer viruses, illegal break-ins or hacking, sabotage, or acts of vandalism by disgruntled employees or third parties. The risk of a security breach or disruption, particularly through cyberattack or cyber intrusion, including by computer hackers, foreign governments and cyber terrorists, has increased as the number, intensity and sophistication of attempted attacks and intrusions from around the world have increased, in part because of evolving technologies, the ubiquitous use of the Internet and telecommunications technologies (including mobile devices) to conduct business transactions. Our information technology network and systems have been and, we believe, continue to be under constant attack. Accordingly, despite our security measures or those of our third party service providers, we have experienced and may in the future experience security breaches, including breaches that we may not be able to detect. Security breaches of our information technology systems, including through mobile devices, could result in the misappropriation or unauthorized disclosure of confidential information belonging to us or to our customers, suppliers, business partners, employees or other third parties, which could result in our suffering significant financial and reputational damage. If we are unable to protect sensitive information, our customers or governmental authorities could question the adequacy of our security processes and procedures and our compliance with applicable laws and regulations, including evolving government cyber security requirements for government contractors.

In addition, the processing and storage of certain information is increasingly subject to privacy and data security regulations, and many such regulations are country-specific. The interpretation and application of data protection laws in the U.S., Europe, and elsewhere, including the EU General Data Protection Regulation and the California Consumer Privacy Act, are uncertain, evolving

and may be inconsistent among jurisdictions. Compliance with these various laws may be onerous and require us to incur substantial costs or to change our business practices in a manner that adversely affects our business, while failure to comply with such laws may subject us to substantial penalties.

***Employee benefit cost increases could reduce our profitability.***

Our profitability is affected by employee benefit costs, particularly medical, pension and other employee benefits. In recent years, employee medical costs have increased due to factors such as the increase in health care costs in the U.S. These factors will continue to put pressure on our business and financial performance, as employee benefit costs continue to escalate. We may not succeed in limiting future cost increases. Continued employee benefit cost increases could have an adverse effect on our results of operations, cash flows and financial position.

We also sponsor various defined benefit pension plans that cover certain employees. Our costs of providing defined benefit pension plans have risen dramatically in recent years, and are dependent upon a number of factors and assumptions that drive our projected liabilities and annual expenses, such as discount rates, the actual and projected rates of return on the plans' assets, governmental regulation, global equity prices, portfolio composition, mortality rates and required or voluntary contributions to the plans. Changes in assumptions, the inability to grow our pension investments over time to increase the value of the plans' assets, and other factors relating to worldwide and domestic economic trends and financial market conditions, could all have a negative impact on our pension plans, which could result in an increase in our pension liabilities, a reduction in the funded status of our plan, increases in annual expense recognized related to the plans, and requirements to increase funding for some or all of our defined benefit pension plans, among other factors, all of which could negatively impact our results of operations and financial position.

**Item 1B. Unresolved Staff Comments**

None.

## Item 2. Properties

We operate various general offices and manufacturing facilities throughout the U.S., Europe and Asia. The following table provides certain information about the material general offices and manufacturing facilities used by our operating segments:

| Location | Floor Space (Square Feet) | Type of Facility | Leased / Owned | Operating Segment |
|---|---|---|---|---|
| *United States* | | | | |
| Chandler, Arizona | 147,000 | Manufacturing | Owned | ACS |
| Chandler, Arizona | 105,100 | Manufacturing | Owned | ACS |
| Chandler, Arizona | 100,000 | Manufacturing | Owned | ACS |
| Chandler, Arizona | 75,000 | Administrative Offices | Owned | All |
| Rogers, Connecticut | 388,100 | Manufacturing / Administrative Offices | Owned | All |
| Moosup, Connecticut | 185,500 | Manufacturing | Owned | EMS |
| Woodstock, Connecticut | 150,600 | Manufacturing | Owned | EMS |
| Carol Stream, Illinois | 216,600 | Manufacturing | Owned | EMS |
| Bear, Delaware | 125,000 | Manufacturing / Administrative Offices | Owned | ACS & EMS |
| Burlington, Massachusetts | 6,000 | R&D Lab / Administrative Offices | Leased through 2/2021 | All |
| Narragansett, Rhode Island | 84,600 | Manufacturing | Owned | EMS |
| *Europe* | | | | |
| Eschenbach, Germany | 149,000 | Manufacturing / Administrative Offices | Leased through 6/2021 | PES |
| Eschenbach, Germany | 24,100 | Warehouse / Administrative Offices | Leased through 12/2020 | PES |
| Evergem, Belgium | 122,000 | Manufacturing / Administrative Offices | Owned | ACS & PES |
| Evergem, Belgium | 55,700 | Warehouse / Administrative Offices | Leased through 5/2021 | ACS & PES |
| Ghent, Belgium | 45,000 | Warehouse | Leased through 3/2021 | ACS & EMS |
| Budapest, Hungary | 64,000 | Manufacturing | Leased through 2/2023 | PES |
| *Asia* | | | | |
| Suzhou, China | 821,000 | Manufacturing / Administrative Offices | Owned | All |
| Ansan, South Korea | 40,000 | Manufacturing | Leased through 10/2021 | EMS |

## Item 3. Legal Proceedings

### *Asbestos Products Litigation*

We, like many other industrial companies, have been named as a defendant in a number of lawsuits filed in courts across the country by persons alleging personal injury from exposure to products containing asbestos. We were a defendant in 592 asbestos-related product liability cases as of December 31, 2019, compared to 745 cases as of December 31, 2018, with the change reflecting new cases, dismissals, settlements and other dispositions. We have never mined, milled, manufactured or marketed asbestos; rather, we made and provided to industrial users a limited number of products that contained encapsulated asbestos, but we stopped manufacturing these products in the late 1980s. In virtually all of the cases against us, the plaintiffs are seeking unspecified damages above a jurisdictional minimum against multiple defendants who may have manufactured, sold or used asbestos-containing products to which the plaintiffs were allegedly exposed and from which they purportedly suffered injury. Most of these cases are being litigated in Maryland, Illinois, Missouri and New York; however, we are also defending cases in other states. We intend to vigorously defend these cases, primarily on the basis of the plaintiffs' inability to establish compensable loss as a result of exposure to our products. As of December 31, 2019, the estimated liability and estimated insurance recovery for all current and future indemnity and defense costs projected through 2064 was $85.9 million and $78.3 million, respectively.

The indemnity and defense costs of our asbestos-related product liability litigation to date have been substantially covered by insurance. As of December 31, 2019, our consolidated statements of financial position include $7.6 million of estimated asbestos-related expenses that exceed asbestos-related insurance coverage for all current and future indemnity and defense costs projected through 2064. For additional information regarding our asbestos-related product liability litigation, refer to "Note 12 – Commitments and Contingencies" to "Item 8. Financial Statements and Supplementary Data."

### *Other Matters*

We are currently involved in a variety of other legal proceedings that we view as ordinary, routine litigation incidental to our business, including commercial disputes, intellectual property matters, personal injury claims, tax claims and employment matters. Although the outcome of no legal matter can be predicted with certainty, we do not believe that the outcome of any of these legal

proceedings, either individually or in the aggregate, will have a material adverse effect on our business, results of operations, cash flows or financial position. In addition, we are involved in certain environmental matters, which we do not view as material legal proceedings, either pending or known to be contemplated. For additional information regarding certain of these matters, refer to "Note 12 – Commitments and Contingencies" to "Item 8. Financial Statements and Supplementary Data."

**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**

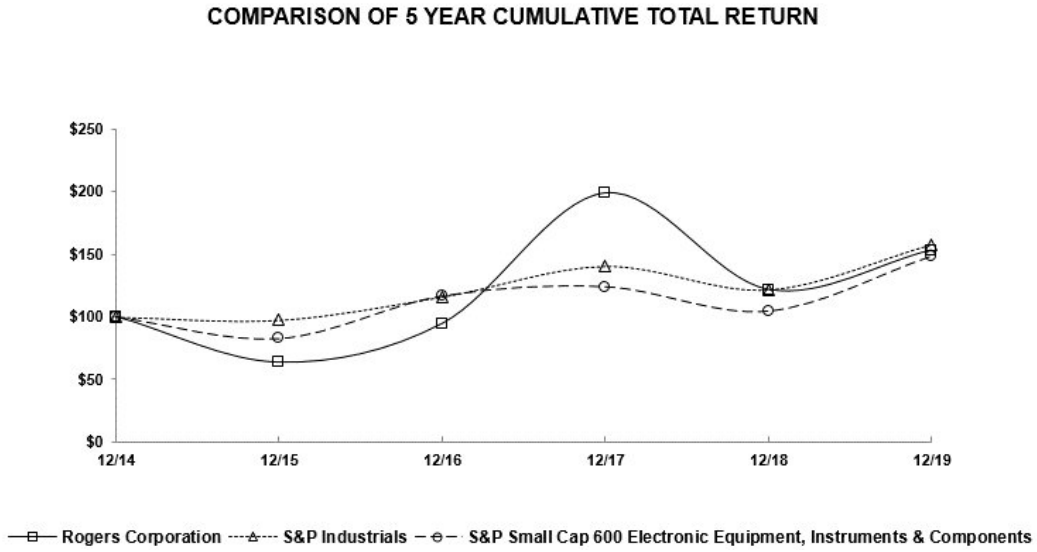
***Capital Stock Market Prices and Dividend Policy***

Our capital stock is traded on the New York Stock Exchange under the symbol "ROG". As of the end of business on February 14, 2020, we had 310 shareholders of record.

We expect to maintain a policy of emphasizing longer-term growth of capital rather than dividend income and do not anticipate paying cash dividends in the foreseeable future.

***Performance Graph***

The following graph compares the cumulative total return on Rogers' capital stock over the past five fiscal years with the cumulative total return on the Standard & Poor's Industrials Index (S&P Industrials) and the S&P Small Cap 600 Electronic Equipment, Instruments & Components Index. The graph tracks the performance of a $100 investment in the Company's common stock and in each of the indexes (with the reinvestment of all dividends) on the date specified.




***Issuer Purchases of Equity Securities***

In 2015, we initiated a share repurchase program (the Program) of up to $100.0 million of the Company's capital stock. We initiated the Program to mitigate the dilutive effects of stock option exercises and vesting of restricted stock units granted by the Company, in addition to enhancing shareholder value. The Program has no expiration date, and may be suspended or discontinued at any time without notice. There were no share repurchases in 2019. As of December 31, 2019, $49.0 million remained available to purchase under the Program. For additional information regarding share repurchases, refer to "Note 18 – Share Repurchases" to "Item 8. Financial Statements and Supplementary Data."

**Item 6. Selected Financial Data**

| *(Dollars in thousands, except per share amounts)* | **2019** | 2018 | 2017 | 2016 | 2015 |
|---|---|---|---|---|---|
| ***Financial Results*** | | | | | |
| Net sales | **$ 898,260** | $ 879,091 | $ 821,043 | $ 656,314 | $ 641,443 |
| Income before income tax expense | **$ 55,126** | $ 110,589 | $ 132,925 | $ 82,280 | $ 66,173 |
| Net income | **$ 47,319** | $ 87,651 | $ 80,459 | $ 48,283 | $ 46,320 |
| ***Per Share Data*** | | | | | |
| Basic earnings per share | **$ 2.55** | $ 4.77 | $ 4.43 | $ 2.68 | $ 2.52 |
| Diluted earnings per share | **$ 2.53** | $ 4.70 | $ 4.34 | $ 2.65 | $ 2.48 |
| Book value | **$ 50.27** | $ 46.12 | $ 41.99 | $ 35.28 | $ 32.55 |
| ***Financial Position*** | | | | | |
| Current assets | **$ 464,102** | $ 485,786 | $ 454,523 | $ 458,401 | $ 428,665 |
| Current liabilities | **$ 100,225** | $ 107,180 | $ 113,808 | $ 101,185 | $ 78,648 |
| Ratio of current assets to current liabilities | **4.6 to 1** | 4.5 to 1 | 4.0 to 1 | 4.5 to 1 | 5.5 to 1 |
| Cash and cash equivalents | **$ 166,849** | $ 167,738 | $ 181,159 | $ 227,767 | $ 204,586 |
| Net working capital | **$ 363,877** | $ 378,606 | $ 340,715 | $ 357,216 | $ 350,017 |
| Property, plant and equipment, net | **$ 260,246** | $ 242,759 | $ 179,611 | $ 176,916 | $ 178,661 |
| Total assets | **$ 1,273,181** | $ 1,279,344 | $ 1,125,134 | $ 1,056,500 | $ 930,355 |
| Borrowings under revolving credit facility | **$ 123,000** | $ 228,482 | $ 130,982 | $ 235,877 | $ 173,557 |
| Shareholders' equity | **$ 933,900** | $ 848,324 | $ 766,573 | $ 635,786 | $ 584,582 |
| Borrowings under revolving credit facility as a percentage of shareholders' equity | **13.2%** | 26.9% | 17.1% | 37.1% | 29.7% |
| ***Other Data*** | | | | | |
| Depreciation and amortization | **$ 49,162** | $ 50,073 | $ 44,099 | $ 37,847 | $ 34,054 |
| Research and development expenses | **$ 31,685** | $ 33,075 | $ 29,547 | $ 28,582 | $ 27,644 |
| Capital expenditures | **$ 51,597** | $ 90,549 | $ 27,215 | $ 18,136 | $ 24,837 |
| Number of employees (approximate) | **3,600** | 3,700 | 3,400 | 3,100 | 2,800 |
| Net sales per employee | **$ 250** | $ 238 | $ 241 | $ 212 | $ 229 |
| Number of shares outstanding as of December 31 | **18,577** | 18,395 | 18,255 | 18,021 | 17,957 |

The financial data included within the preceding table should be read in conjunction with our Management's Discussion and Analysis of Results of Operations and Financial Position as well as the Financial Statements and Supplementary Data included in Items 7 and 8, respectively, of this Form 10-K, and with our previously filed Forms 10-K.

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

*The following discussion and analysis of our results of operations and financial position should be read together with our consolidated financial statements and accompanying notes, which are contained in "Item 8. Financial Statements and Supplementary Data," as well as "Item 6. Selected Financial Data."*

*The discussion of the comparison of our 2018 and 2017 results was previously presented in the Management's Discussion & Analysis in Part II, Item 7 of the Company's Annual Report on Form 10-K filed with the SEC on February 21, 2019, and has been omitted from this section pursuant to Instruction 1 to Item 303(a) of Regulation S-K.*

### Business Overview

Rogers Corporation designs, develops, manufactures and sells high-performance and high-reliability engineered materials and components to meet our customers' demanding challenges. We operate three strategic operating segments: Advanced Connectivity Solutions (ACS), Elastomeric Material Solutions (EMS) and Power Electronics Solutions (PES). The remaining operations, which represent our non-core businesses, are reported in the Other operating segment. We have a history of innovation and have established Innovation Centers for our research and development activities in Chandler, Arizona; Burlington, Massachusetts; Eschenbach, Germany; and Suzhou, China. We are headquartered in Chandler, Arizona.

### Growth Strategy and Recent Acquisitions

Our growth strategy is based upon the following principles: (1) market-driven organization, (2) innovation leadership, (3) synergistic mergers and acquisitions, and (4) operational excellence. As a market-driven organization, we are focused on growth drivers, including advanced mobility and advanced connectivity. More specifically, the key trends currently affecting our business include the increasing use of advanced driver assistance systems (ADAS) and increasing electrification of vehicles, including electric and hybrid electric vehicles (EV/HEV), in the automotive industry and new technology adoption in the telecommunications industry, including next generation wireless infrastructure. In addition to our focus on advanced mobility and advanced connectivity in the automotive and telecommunications industries, we sell into a variety of other markets including general industrial, portable electronics, connected devices, aerospace and defense, mass transit and renewable energy.

Our sales and marketing approach is based on addressing these trends, while our strategy focuses on factors for success as a manufacturer of engineered materials and components: performance, quality, service, cost, efficiency, innovation and technology. We have expanded our capabilities through organic investment and acquisitions and strive to ensure high quality solutions for our customers. We continue to review and re-align our manufacturing and engineering footprint in an effort to attain a leading competitive position globally. We have established or expanded our capabilities in various locations in support of our customers' growth initiatives.

We seek to enhance our operational and financial performance by investing in research and development, manufacturing and materials efficiencies, and new product initiatives that respond to the needs of our customers. We strive to evaluate operational and strategic alternatives to improve our business structure and align our business with the changing needs of our customers and major industry trends affecting our business.

In executing on our growth strategy, we have completed the following strategic acquisitions in the last two fiscal years: (1) in July 2018, we acquired Griswold LLC (Griswold), a manufacturer of a wide range of high-performance engineered cellular elastomer and microcellular polyurethane products and solutions and (2) in August 2018, we acquired a production facility and related machinery and equipment located in Chandler, Arizona from Isola USA Corp (Isola).

**Results of Operations**

The following table sets forth, for the periods indicated, selected operations data expressed as a percentage of net sales.

| | **2019** | 2018 |
|---|---|---|
| Net sales | **100.0 %** | 100.0 % |
| Gross margin | **35.0 %** | 35.4 % |
| | | |
| Selling, general and administrative expenses | **18.8 %** | 18.7 % |
| Research and development expenses | **3.5 %** | 3.8 % |
| Restructuring and impairment charges | **0.3 %** | 0.5 % |
| Other operating (income) expense, net | **0.1 %** | (0.4)% |
| Operating income | **12.3 %** | 12.8 % |
| | | |
| Equity income in unconsolidated joint ventures | **0.6 %** | 0.6 % |
| Pension settlement charges | **(5.9)%** | — % |
| Other income (expense), net | **(0.1)%** | (0.1)% |
| Interest expense, net | **(0.8)%** | (0.7)% |
| Income before income tax expense | **6.1 %** | 12.6 % |
| Income tax expense | **0.8 %** | 2.6 % |
| Net income | **5.3 %** | 10.0 % |

***Net Sales and Gross Margin***

| *(Dollars in thousands)* | | **2019** | | 2018 |
|---|---|---|---|---|
| Net sales | **$** | **898,260** | $ | 879,091 |
| Gross margin | **$** | **314,292** | $ | 310,783 |
| Percentage of net sales | | **35.0%** | | 35.4% |

Net sales increased by 2.2% in 2019 compared to 2018. Our ACS and EMS operating segments had net sales increases of 7.6% and 5.9%, respectively, partially offset by a net sales decrease in our PES operating segment of 11.1%. The increase in net sales was primarily driven by higher net sales in 5G wireless infrastructure in our ACS operating segment and the $15.0 million of net sales in the first half of the year related to Griswold, which we acquired in July 2018. Net sales were also favorably impacted by higher net sales in the aerospace and defense market in our ACS operating segment, higher net sales in the portable electronics market in our EMS operating segment and higher net sales in the mass transit and power semiconductor substrate EV/HEV markets in our PES operating segment, partially offset by lower net sales in the general industrial, vehicle electrification, ROLINX® EV/HEV power interconnects and renewable energy markets in our PES operating segment, lower net sales in 4G wireless infrastructure in our ACS operating segment and lower net sales in the general industrial market in our EMS operating segment. Net sales were unfavorably impacted by the effects of trade tensions in 2019. Net sales were additionally unfavorably impacted by $20.9 million, or 2.4%, due to the depreciation in value of the euro, Chinese renminbi and South Korean won relative to the U.S. dollar.

Gross margin as a percentage of net sales decreased approximately 40 basis points to 35.0% in 2019 compared to 35.4% in 2018. Gross margin in 2019 was negatively impacted by lower volumes, unfavorable absorption of fixed costs, lower productivity and higher fixed overhead costs in our PES operating segment, as well as an increase in tariffs and duties in our ACS and EMS operating segments. This was partially offset by higher volumes, favorable product mix and productivity improvements in our ACS and EMS operating segments, as well as the resolution of certain process issues that had negatively impacted gross margin in 2018.

***Selling, General and Administrative Expenses***

| *(Dollars in thousands)* | | **2019** | | 2018 |
|---|---|---|---|---|
| Selling, general and administrative expenses | **$** | **168,682** | $ | 164,046 |
| Percentage of net sales | | **18.8%** | | 18.7% |

SG&A expenses increased 2.8% in 2019 from 2018, primarily due to a $7.0 million increase in total compensation and benefits, a $1.2 million increase in other intangible assets amortization, most of which was related to our acquisition of Griswold, a $1.0 million increase in asbestos-related charges and a $0.8 million increase in environmental charges. This was partially offset by a $2.7 million decrease in professional service costs, a $1.5 million decrease in depreciation expense and a $1.1 million decrease in travel and entertainment expenses.

***Research and Development Expenses***

| *(Dollars in thousands)* | **2019** | 2018 |
|---|---|---|
| Research and development expenses | **$ 31,685** | $ 33,075 |
| Percentage of net sales | **3.5%** | 3.8% |

R&D expenses decreased 4.2% in 2019 from 2018, primarily due to the timing of new product initiatives and lower compensation and benefits costs due to a lower average headcount during 2019.

***Restructuring and Impairment Charges and Other Operating (Income) Expense, Net***

| *(Dollars in thousands)* | **2019** | 2018 |
|---|---|---|
| Restructuring and impairment charges | **$ 2,485** | $ 4,038 |
| Other operating (income) expense, net | **$ 959** | $ (3,087) |

We recognized impairment charges of $1.5 million in both 2019 and 2018 primarily relating to certain assets in connection with the Isola asset acquisition, which were allocated to our ACS operating segment. We incurred restructuring charges associated with the relocation of our global headquarters from Rogers, Connecticut to Chandler, Arizona and the consolidation of our Santa Fe Springs, California operations into our facilities in Carol Stream, Illinois and Bear, Delaware. In 2019, we recognized $0.9 million of restructuring charges associated with the facility consolidation. In 2018, we recognized $2.0 million and $0.6 million of restructuring charges associated with facility consolidation and the global headquarters relocation, respectively.

Other operating (income) expense, net decreased by $4.0 million in 2019 from 2018. In 2019 and 2018, we recognized lease income of $1.0 million and $0.9 million, respectively, and related depreciation expense on leased assets of $1.9 million and $3.5 million, respectively, in connection with the transitional leaseback of a portion of the facility and certain machinery and equipment acquired from Isola. In 2018, we recorded a gain from the settlement of antitrust litigation in the amount of $4.2 million and recognized income of $0.6 million from economic incentive grants related to the physical relocation of our global headquarters from Rogers, Connecticut to Chandler. Additionally, we recorded a gain of $0.7 million in both 2019 and 2018 for the settlement of indemnity claims related to the Isola asset acquisition and the DSP acquisition, respectively.

***Equity Income in Unconsolidated Joint Ventures***

| *(Dollars in thousands)* | **2019** | 2018 |
|---|---|---|
| Equity income in unconsolidated joint ventures | **$ 5,319** | $ 5,501 |

As of December 31, 2019, we had two unconsolidated joint ventures, each 50% owned: Rogers INOAC Corporation (RIC) and Rogers INOAC Suzhou Corporation (RIS). Equity income in those unconsolidated joint ventures decreased 3.3% in 2019 from 2018 due to lower net sales for RIC and RIS in the portable electronics and automotive markets.

***Pension Settlement Charges and Other Income (Expense), Net***

| *(Dollars in thousands)* | **2019** | 2018 |
|---|---|---|
| Pension settlement charges | **$ (53,213)** | $ — |
| Other income (expense), net | **$ (592)** | $ (994) |

In 2019, we recorded a $53.2 million non-cash pre-tax settlement charge in connection with the termination of the Rogers Corporation Defined Benefit Pension Plan (following its merger with the Hourly Employees Pension Plan of Arlon LLC, Microwave Material and Silicone Technologies Divisions, Bear, Delaware (collectively, the Merged Plan)). We expect to incur an additional non-cash pre-tax settlement charge in connection with the remaining settlement efforts of the Merged Plan of approximately $0.7 million during the first half of 2020. For additional information, refer to Note 11 – Pension Benefits, Other Postretirement Benefits and Employee Savings and Investment Plan to "Item 8. Financial Statements and Supplementary Data."

Other income (expense), net improved to a net expense of $0.6 million in 2019 compared to a net expense of $1.0 million in 2018 due to favorable impacts from our copper derivatives contracts, partially offset by higher costs associated with our defined benefit plans and unfavorable impacts from our foreign currency transactions, including foreign currency derivatives.

***Interest Expense, Net***

| *(Dollars in thousands)* | **2019** | 2018 |
|---|---|---|
| Interest expense, net | **$ (6,869)** | $ (6,629) |

Interest expense, net, increased by 3.6% in 2019 from 2018 due to a higher average outstanding revolving credit facility balance as well as a higher weighted average interest rate on our revolving credit facility in 2019 compared to 2018, partially offset by an increase in interest income year-over-year. The higher average outstanding balance on our revolving credit facility was a result of $102.5 million of new borrowing under our revolving credit facility during the third quarter of 2018 to fund the acquisition of Griswold and our voluntary pension contribution in connection with the proposed plan termination process. This was partially offset by $105.5 million of discretionary principal payments on our revolving credit facility in 2019, the majority of which occurred in the second and third quarters of 2019.

***Income Tax Expense***

| *(Dollars in thousands)* | **2019** | 2018 |
|---|---|---|
| Income tax expense | **$ 7,807** | $ 22,938 |
| Effective tax rate | **14.2%** | 20.7% |

Our effective income tax rate for 2019 was 14.2% compared to 20.7% for 2018. The 2019 rate decrease was due to the beneficial impact of changes in valuation allowance against deferred tax assets associated with carried over research and development credits, excess tax deductions on stock-based compensation, and the international provisions from the U.S. tax reform enacted in 2017. This decrease was partially offset by a disproportionate tax impact from the non-cash settlement charge in connection with the termination of the Merged Plan, increase in taxes associated with the repatriation of foreign earnings, and increase in current accruals of reserves for uncertain tax positions.

**Operating Segment Net Sales and Operating Income**

***Advanced Connectivity Solutions***

| *(Dollars in thousands)* | **2019** | 2018 |
|---|---|---|
| Net sales | **$ 316,592** | $ 294,154 |
| Operating income | **$ 48,654** | $ 33,827 |

ACS net sales increased by 7.6% in 2019 compared to 2018. The increase in net sales was primarily driven by higher net sales in 5G wireless infrastructure and aerospace and defense markets, partially offset by lower net sale in 4G wireless infrastructure. Net sales were unfavorably impacted by the effects of trade tensions in 2019. Net sales were additionally unfavorably impacted by $6.1 million, or 2.1%, due to the depreciation in value of the Chinese renminbi and euro relative to the U.S. dollar.

Operating income increased by 43.8% in 2019 from 2018. The increase in operating income was primarily due to higher net sales, favorable product mix, productivity improvements and the resolution of certain process issues that had negatively impacted gross margin in 2018, partially offset by an increase in tariffs and duties. As a percentage of net sales, operating income in 2019 was 15.4%, an approximately 390 basis point increase as compared to 11.5% in 2018.

***Elastomeric Material Solutions***

| *(Dollars in thousands)* | **2019** | 2018 |
|---|---|---|
| Net sales | **$ 361,603** | $ 341,364 |
| Operating income | **$ 57,080** | $ 52,502 |

EMS net sales increased by 5.9% in 2019 compared to 2018. The increase in net sales was primarily due to the $15.0 million of net sales in the first half of the year related to Griswold, which we acquired in July 2018, as well as higher net sales in the portable electronics market, partially offset by lower net sales in the general industrial market. Net sales were unfavorably impacted by the effects of trade tensions in 2019. Net sales were additionally unfavorably impacted by $5.9 million, or 1.7%, due to the depreciation in value of the Chinese renminbi, South Korean won and euro relative to the U.S. dollar.

Operating income increased by 8.7% in 2019 from 2018. The increase in operating income was primarily due to higher net sales, favorable product mix, productivity improvements and a reduction in facility consolidation costs, partially offset by the non-recurring $4.2 million gain from the settlement of antitrust litigation in 2018 and an increase in tariffs and duties. As a percentage of net sales, operating income in 2019 was 15.8%, an approximately 40 basis point increase as compared to 15.4% in 2018.

***Power Electronics Solutions***

| *(Dollars in thousands)* | **2019** | 2018 |
|---|---|---|
| Net sales | **$ 198,535** | $ 223,338 |
| Operating income (loss) | **$ (1,437)** | $ 19,648 |

PES net sales decreased by 11.1% in 2019 compared to 2018. The decrease in net sales was primarily driven by lower net sales in the general industrial, vehicle electrification, ROLINX® EV/HEV power interconnects and renewable energy markets, partially offset by higher net sales in the mass transit and power semiconductor substrate EV/HEV markets. Net sales were impacted by unfavorable currency fluctuations of $8.4 million, or 3.8%, due to the depreciation in value of the euro and Chinese renminbi relative to the U.S. dollar.

Operating income decreased by 107.3% in 2019 from 2018. The decrease in operating income was primarily due to lower net sales, unfavorable absorption of fixed overhead costs, lower productivity and higher fixed overhead expenses. As a percentage of net sales, PES had an operating loss of 0.7% in 2019, an approximately 950 basis point decrease as compared to operating income of 8.8% in 2018.

***Other***

| *(Dollars in thousands)* | **2019** | 2018 |
|---|---|---|
| Net sales | **$ 21,530** | $ 20,235 |
| Operating income | **$ 6,184** | $ 6,734 |

Net sales in this segment increased by 6.4% in 2019 from 2018. The increase in net sales was primarily driven by higher net sales for our NITROPHYL® floats product line and a last-time buy in the Durel business. Net sales were impacted by unfavorable currency fluctuations of $0.5 million, or 2.4%, due to the depreciation in value of the Chinese renminbi relative to the U.S. dollar.

Operating income decreased by 8.2% in 2019 from 2018. The decrease in operating income was primarily due to unfavorable absorption of fixed overhead costs and unfavorable product mix, partially offset by higher net sales. As a percentage of net sales, operating income in 2019 was 28.7%, an approximately 460 basis point decrease as compared to 33.3% in 2018.

**Product and Market Development**

Our research and development team is dedicated to growing our business by developing cost effective solutions that improve the performance of customers' products and by identifying business and technology acquisition or development opportunities to expand our market presence.

**Liquidity, Capital Resources and Financial Position**

We believe that our existing sources of liquidity and cash flows that are expected to be generated from our operations, together with our available credit facilities, will be sufficient to fund our operations, currently planned capital expenditures, research and development efforts and our debt service commitments, for at least the next 12 months. We regularly review and evaluate the adequacy of our cash flows, borrowing facilities and banking relationships, seeking to ensure that we have the appropriate access to cash to fund both our near-term operating needs and our long-term strategic initiatives.

| *(Dollars in thousands)* | As of December 31, | |
|---|---|---|
| *Key Financial Position Accounts:* | **2019** | 2018 |
| Cash and cash equivalents | **$ 166,849** | $ 167,738 |
| Accounts receivable, net | **122,285** | 144,623 |
| Contract assets | **22,455** | 22,728 |
| Inventories | **132,859** | 132,637 |
| Borrowings under revolving credit facility | **123,000** | 228,482 |

The following table illustrates the location of our cash and cash equivalents by our three major geographic areas:

| | As of December 31, | |
|---|---|---|
| *(Dollars in thousands)* | **2019** | 2018 |
| United States | **$ 39,354** | $ 41,833 |
| Europe | **31,166** | 31,244 |
| Asia | **96,329** | 94,661 |
| Total cash and cash equivalents | **$ 166,849** | $ 167,738 |

Approximately $127.5 million of our cash and cash equivalents were held by non-U.S. subsidiaries as of December 31, 2019. We did not make any changes in 2019 to our position on the permanent reinvestment of our historical earnings from foreign operations. With the exception of certain of our Chinese subsidiaries, where a substantial portion of our Asia cash and cash equivalents are held, we continue to assert that historical foreign earnings are indefinitely reinvested.

Net working capital was $363.9 million and $378.6 million as of December 31, 2019 and 2018, respectively.

Significant changes in our statement of financial position accounts from December 31, 2018 to December 31, 2019 were as follows:

- Accounts receivable, net decreased 15.4% to $122.3 million as of December 31, 2019, from $144.6 million as of December 31, 2018. The decrease was primarily due to lower net sales at the end of 2019 compared to at the end of the 2018, as well as a reduction in our income taxes receivable year-over-year.
- Contract assets decreased 1.2% to $22.5 million as of December 31, 2019, from $22.7 million as of December 31, 2018, mainly attributable to the decrease in no alternative use inventory for which we have the right to payment in our PES operating segment.
- Inventories increased 0.2% to $132.9 million as of December 31, 2019, from $132.6 million as of December 31, 2018, primarily driven by higher raw material purchases for long lead times in our ACS and PES operating segments during the third quarter of 2019 in anticipation of demand increases through the first half of 2020, almost entirely offset by inventory reduction efforts in our EMS operating segment.

| *(Dollars in thousands)* | Year Ended December 31, | |
|---|---|---|
| *Key Cash Flow Measures:* | **2019** | 2018 |
| Net cash provided by operating activities | **$ 161,323** | $ 66,820 |
| Net cash used in investing activities | **(48,963)** | (167,437) |
| Net cash (used in) provided by financing activities | **(111,843)** | 88,682 |

In 2019, cash and cash equivalents decreased $0.9 million, primarily due to $105.5 million of principal payments made on our outstanding borrowings on our revolving credit facility, $51.6 million in capital expenditures, as well as $7.6 million in tax payments related to net share settlement of equity awards, almost entirely offset by cash flows generated by operations.

In 2018, cash and cash equivalents decreased $13.4 million, primarily due to the $78.0 million paid for the Griswold acquisition, net of cash acquired, $47.1 million in capital expenditures, $43.4 million paid for the Isola asset acquisition, and $25.4 million in pension and other postretirement benefits contributions, along with $6.6 million in tax payments related to net share settlement of equity awards, $5.0 million of principal payments made on our outstanding borrowings on our revolving credit facility and $3.0 million in repurchases of capital stock. This activity was partially offset by proceeds of $102.5 million from additional borrowings under our revolving credit facility, of which $82.5 million and $20.0 million were used to fund the Griswold acquisition and the voluntary pension plan contribution, respectively, and by cash flows generated by operations.

In 2020, we expect capital spending to be in the range of approximately $40.0 million to $45.0 million, which we plan to fund with cash from operations.

***Revolving Credit Facility***

In February 2017, we entered into a secured five year credit agreement with JPMorgan Chase Bank, N.A., as administrative agent, and the lenders party thereto (the Third Amended Credit Agreement), which amended and restated the Second Amended Credit Agreement. The Third Amended Credit Agreement refinanced the Second Amended Credit Agreement, eliminated the term loan under the Second Amended Credit Agreement, increased the principal amount of our revolving credit facility to up to $450.0 million of borrowing capacity, with sublimits for multicurrency borrowings, letters of credit and swing-line notes, and provided an additional $175.0 million accordion feature.

All revolving loans under the Third Amended Credit Agreement are due on the maturity date, February 17, 2022. We are not required to make any quarterly principal payments under the Third Amended Credit Agreement. In 2019 and 2018, we made

discretionary principal payments of $105.5 million and $5.0 million, respectively, on the outstanding borrowings under our revolving credit facility. As of December 31, 2019, we had $123.0 million in outstanding borrowings under our revolving credit facility. For additional information regarding the Third Amended Credit Agreement, refer to "Note 9 – Debt" to "Item 8. Financial Statements and Supplementary Data."

***Restriction on Payment of Dividends***

The Third Amended Credit Agreement generally permits us to pay cash dividends to our shareholders, provided that (i) no default or event of default has occurred and is continuing or would result from the dividend payment and (ii) our leverage ratio does not exceed 2.75 to 1.00. If our leverage ratio exceeds 2.75 to 1.00, we may nonetheless make up to $20.0 million in restricted payments, including cash dividends, during the fiscal year, provided that no default or event of default has occurred and is continuing or would result from the payments. Our leverage ratio did not exceed 2.75 to 1.00 as of December 31, 2019.

**Contractual Obligations**

The following table summarizes our contractual obligations as of December 31, 2019.

| | Payments Due by Period | | | | |
|---|---|---|---|---|---|
| | Total | Less than 1 Year | 1 - 3 Years | 3 - 5 Years | More than 5 Years |
| Operating lease obligations | $ 5,044 | $ 2,442 | $ 2,339 | $ 261 | $ 2 |
| Finance lease obligations | 4,540 | 400 | 4,140 | — | — |
| Interest payments on finance lease obligations | 194 | 132 | 62 | — | — |
| Inventory purchase obligations | 277 | 277 | — | — | — |
| Capital commitments[1] | 16,263 | 16,263 | — | — | — |
| Borrowings under revolving credit facility[2] | 123,000 | — | 123,000 | — | — |
| Interest payments on borrowings under revolving credit facility[3] | 9,042 | 4,210 | 4,832 | — | — |
| Other postretirement benefits | 1,584 | 282 | 281 | 247 | 774 |
| Total contractual obligations | $ 159,944 | $ 24,006 | $ 134,654 | $ 508 | $ 776 |

[1] This amount represents non-cancelable vendor purchase commitments.

[2] All outstanding borrowings under our revolving credit facility are due on February 17, 2022.

[3] Estimated future interest payments are based on a leverage ratio based spread that ranges from 1.375% to 1.75%, plus projected forward 1-month LIBOR rates, and have been adjusted for the impact of the floating to fixed rate interest rate swap on $75.0 million of the outstanding borrowings under our revolving credit facility. For additional information, refer to "Note 3 – Hedging Transactions and Derivative Financial Instruments" to "Item 8. Financial Statements and Supplementary Data." Actual future interest payments could differ from those set forth here due to the expected phase-out of LIBOR by the end of 2021.

Other postretirement benefits, which amount to $1.6 million, are expected to be paid from operating cash flows. Other long-term liabilities, such as deferred taxes, unrecognized tax benefits and asbestos-related product liability reserves, have been excluded from the table due to the uncertainty of the timing of payments combined with the absence of historical trends to be used as a predictor for such payments.

**Effects of Inflation**

We do not believe that inflation had a material impact on our business, net sales, or operating results during the periods presented.

**Off-Balance Sheet Arrangements**

We do not have any off-balance sheet arrangements that have, or are, in the opinion of management, reasonably likely to have, a current or future material effect on our results of operations or financial position.

**Critical Accounting Estimates**

Our consolidated financial statements are prepared in accordance with U.S. generally accepted accounting principles, which require management to make estimates, judgments and assumptions that affect the amounts reported in the financial statements and accompanying notes. We base our estimates on historical experience and on various other assumptions that are believed to be reasonable under the circumstances and believe that appropriate reserves have been established using on reasonable methodologies and appropriate assumptions based on facts and circumstances that are known; however, actual results may differ from these estimates under different assumptions or conditions. Certain accounting policies may require a choice between acceptable accounting methods or may require substantial judgment or estimation in their application. A summary of our critical accounting estimates is presented below:

***Inventory Valuation***

Inventories are stated at the lower of cost or net realizable value with costs determined primarily on a first-in first-out basis. We also maintain a reserve for excess, obsolete and slow-moving inventory that is primarily developed by utilizing both specific product identification and historical product demand as the basis for our analysis. Products and materials that are specifically identified as obsolete are fully reserved. In general, most products that have been held in inventory greater than one year are fully reserved unless there are mitigating circumstances, including forecasted sales or current orders for the product. The remainder of the allowance is based on our estimates and fluctuates with market conditions, design cycles and other economic factors. Risks associated with this allowance include unforeseen changes in business cycles that could affect the marketability of certain products and an unexpected decline in current production. We closely monitor the marketplace and related inventory levels and have historically maintained reasonably accurate allowance levels. Our obsolescence reserve has ranged from 9% to 12% of gross inventory over the last three fiscal years.

***Goodwill and Other Intangible Assets***

We have made acquisitions over the years that included the recognition of intangible assets. Intangible assets are classified into three categories: (1) goodwill; (2) other intangible assets with definite lives subject to amortization; and (3) other intangible assets with indefinite lives not subject to amortization. Other intangible assets can include items such as trademarks and trade names, licensed technology, customer relationships and covenants not to compete, among other things. Each definite-lived other intangible asset is amortized over its respective economic useful life using the economic attribution method.

Goodwill is tested for impairment annually and between annual impairment tests if events or changes in circumstances indicate the carrying value may be impaired. If it is more likely than not that our goodwill is impaired, then we compare the estimated fair value of each of our reporting units to its respective carrying value. If a reporting unit's carrying value is greater than its fair value, then an impairment is recognized for the excess and charged to operations. We currently have four reporting units with goodwill: ACS, EMS, curamik® and Elastomer Components Division (ECD). Consistent with historical practice, the annual impairment test on these reporting units was performed as of November 30, 2019.

The application of the annual goodwill impairment test requires significant judgment, including the identification of reporting units, assignment of assets and liabilities to reporting units and determination of the fair value of each reporting unit. Determining the fair value is subjective and requires the use of significant estimates and assumptions, including financial projections for net sales, gross margin and operating margin, discount rates, terminal growth rates and future market conditions, among others. We estimated the fair value of our reporting units using an income approach based on the present value of future cash flows through a five year discounted cash flow analysis. The discounted cash flow analysis utilized the discount rates for each of the reporting units ranging from 10.3% for EMS to 11.9% for ACS, and terminal growth rates ranging from 3.3% for curamik® to 4.6% for ACS. We believe this approach yields the most appropriate evidence of fair value as our reporting units are not easily compared to other corporations involved in similar businesses. We further believe that the assumptions and rates used in our annual goodwill impairment test are reasonable, but inherently uncertain. There were no impairment charges resulting from our goodwill impairment analysis for the year ended December 31, 2019. Our ACS, EMS, curamik® and ECD reporting units had allocated goodwill of $51.7 million, $142.0 million, $67.0 million and $2.2 million respectively, as of December 31, 2019.

Indefinite-lived other intangible assets are tested for impairment annually and between annual impairment tests if events or changes in circumstances indicate the carrying value may be impaired. If it is more likely than not that an indefinite-lived other intangible asset is impaired, then we compare the estimated fair value of that indefinite-lived other intangible asset to its respective carrying value. If an indefinite-lived other intangible asset's carrying value is greater than its fair value, then an impairment charge is recognized for the excess and charged to operations. Consistent with historical practice, the annual impairment test on these reporting units was performed as of November 30, 2019. The application of the annual indefinite-lived other intangible asset impairment test requires significant judgment, including the determination of fair value of each indefinite-lived other intangible asset. Fair value is primarily based on income approaches using discounted cash flow models, which have significant assumptions. Such assumptions are subject to variability from year to year and are directly impacted by global market conditions. There were no impairment charges resulting from our indefinite-lived other intangible assets impairment analysis for the year ended December 31, 2019. Our curamik® reporting unit had an indefinite-lived other intangible asset of $4.4 million as of December 31, 2019.

Definite-lived other intangible assets are tested for recoverability whenever events or changes in circumstances indicate the carrying value may not be recoverable. The recoverability test involves comparing the estimated sum of the undiscounted cash flows for each definite-lived other intangible asset to its respective carrying value. If a definite-lived other intangible asset's carrying value is greater than the sum of its undiscounted cash flows, then the definite-lived other intangible asset's carrying value is compared to its estimated fair value and an impairment charge is recognized for the excess and charged to operations. The application of the recoverability test requires significant judgment, including the identification of the asset group and determination of undiscounted cash flows and fair value of the underlying definite-lived other intangible asset. Determination of undiscounted cash flows requires the use of significant estimates and assumptions, including certain financial projections. Fair value is primarily based on income approaches using discounted cash flow models, which have significant assumptions. Such assumptions are subject to variability

from year to year and are directly impacted by global market conditions. There were no impairment charges resulting from our definite-lived other intangible assets impairment analysis for the year ended December 31, 2019. Our ACS, EMS and curamik® reporting units had definite-lived other intangible assets of $4.7 million, $140.4 million and $9.5 million, respectively, as of December 31, 2019.

***Product Liabilities***

We endeavor to maintain insurance coverage with reasonable deductible levels to protect us from potential exposures to product liability claims. Any liability associated with such claims is based on management's best estimate of the potential claim value, while insurance receivables associated with related claims are not recorded until verified by the insurance carrier.

For asbestos-related claims, we recognize projected asbestos liabilities and related insurance receivables, with any difference between the liability and related insurance receivable recognized as an expense in the consolidated statements of operations. Our estimates of asbestos-related contingent liabilities and related insurance receivables are based on an independent actuarial analysis and an independent insurance usage analysis prepared annually by third parties. The actuarial analysis contains numerous assumptions, including number of claims that might be received, the type and severity of the disease alleged by each claimant, the long latency period associated with asbestos exposure, dismissal rates, average indemnity costs, average defense costs, costs of medical treatment, the financial resources of other companies that are co-defendants in claims, uncertainties surrounding the litigation process from jurisdiction to jurisdiction and from case to case, and the impact of potential changes in legislative or judicial standards, including potential tort reform. Furthermore, any predictions with respect to these assumptions are subject to even greater uncertainty as the projection period lengthens. The insurance usage analysis considers, among other things, applicable deductibles, retentions and policy limits, the solvency and historical payment experience of various insurance carriers, the likelihood of recovery as estimated by external legal counsel and existing insurance settlements.

The liability projection period covers all current and future indemnity and defense costs through 2064, which represents the expected end of our asbestos liability exposure with no further ongoing claims expected beyond that date. This conclusion was based on our history and experience with the claims data, the diminished volatility and consistency of observable claims data, the period of time that has elapsed since we stopped manufacturing products that contained encapsulated asbestos and an expected downward trend in claims due to the average age of our claimants, which is approaching the average life expectancy.

Our accrued asbestos liabilities may not approximate our actual asbestos-related indemnity and defense costs, and our accrued insurance recoveries may not be realized. We believe it is reasonably possible that we may incur additional charges for our asbestos liabilities and defense costs in the future that could exceed existing reserves and insurance recoveries. We plan to continue to vigorously defend ourselves and believe we have substantial unutilized insurance coverage to mitigate future costs related to this matter.

We review our asbestos-related projections annually in the fourth quarter of each year unless facts and circumstances materially change during the year, at which time we would analyze these projections. We believe the assumptions made on the potential exposure and expected insurance coverage are reasonable at the present time, but are subject to uncertainty based on the actual future outcome of our asbestos litigation.

As of December 31, 2019, the estimated liabilities and estimated insurance recoveries for all current and future indemnity and defense costs projected through 2064 were $85.9 million and $78.3 million, respectively.

***Revenue Recognition***

Recognition of revenue occurs when a customer obtains control of promised goods or services in an amount that reflects the consideration to which the providing entity expects to be entitled in exchange for those goods or services. We recognize revenue when all of the following criteria are met: (1) we have entered into a binding agreement, (2) the performance obligations have been identified, (3) the transaction price to the customer has been determined, (4) the transaction price has been allocated to the performance obligations in the contract, and (5) the performance obligations have been satisfied. The majority of our shipping terms permit us to recognize revenue at point of shipment. Some shipping terms require the goods to be cleared through customs or be received by the customer before title passes. In those instances, revenue is not recognized until either the customer has received the goods or they have passed through customs, depending on the circumstances. Shipping and handling costs are treated as fulfillment costs. Sales tax or value added tax (VAT) are excluded from the measurement of the transaction price.

The Company manufactures some products to customer specifications which are customized to such a degree that it is unlikely that another entity would purchase these products or that we could modify these products for another customer. These products are deemed to have no alternative use to the Company whereby we have an enforceable right to payment evidenced by contractual termination clauses. In accordance with ASC 606, for those circumstances we recognize revenue on an over-time basis. Revenue recognition does not occur until the product meets the definition of "no alternative use" and therefore, items that have not yet reached that point in the production process are not included in the population of items with over-time revenue recognition.

As appropriate, we record estimated reductions to revenue for customer returns, allowances, and warranty claims. Provisions for such reductions are made at the time of sale and are typically derived from historical trends and other relevant information.

***Pension and Other Postretirement Benefits***

We provide various defined benefit pension plans for our U.S. employees and we sponsor multiple fully insured or self-funded medical plans and fully insured life insurance plans for retirees. The costs and obligations associated with these plans are dependent upon various actuarial assumptions used in calculating such amounts. These assumptions include discount rates, long-term rates of return on plan assets, mortality rates and other factors. The assumptions used were determined as follows: (i) the discount rate used is based on the PruCurve bond index, with comparisons against other similar indices; and (ii) the long-term rate of return on plan assets is determined based on historical portfolio results, market conditions and our expectations of future returns. We determine these assumptions based on consultation with outside actuaries and investment advisors. Any changes in these assumptions could have a significant impact on future recognized pension costs, assets and liabilities.

The rates used to determine our costs and obligations under our pension and postretirement plans are disclosed in "Note 11 – Pension Benefits, Other Postretirement Benefits and Employee Savings and Investment Plan" to "Item 8. Financial Statements and Supplementary Data." Each assumption has different sensitivity characteristics. For the year ended December 31, 2019, a 25 basis point decrease in the discount rate would have increased our pension expense for Rogers Corporation Employees' Pension Plan (the Union Plan) and the Merged Plan by a de minimis amount. A 25 basis point decrease in the discount rate would have decreased the other postretirement benefits expense by a de minimis amount. A 25 basis point decrease in the expected return on assets would have increased the total 2019 pension expense for the Union Plan and the Merged Plan by a de minimis amount. As the other postretirement benefit plans are unfunded, they would not be impacted by this assumption change.

***Equity Compensation***

Determining the amount of equity compensation expense to be recorded requires us to develop estimates to be used in calculating the grant-date fair value of performance-based restricted stock units.

*Performance-Based Restricted Stock Units*

As of December 31, 2019, we had performance-based restricted stock units from 2019, 2018 and 2017 outstanding. These awards generally cliff vest at the end of a three-year measurement period. However, employees whose employment terminates during the measurement period due to death, disability, or, in certain cases, retirement may receive a pro-rata payout based on the number of days they were employed during the measurement period. Participants are eligible to be awarded shares ranging from 0% to 200% of the original award amount, based on certain defined performance measures.

The 2019, 2018 and 2017 awards have one measurement criteria: the three-year total shareholder return (TSR) on the performance of our capital stock as compared to that of a specified group of peer companies. The TSR measurement criteria of the awards is considered a market condition. As such, the fair value of this measurement criteria was determined on the grant date using a Monte Carlo simulation valuation model. We recognize compensation expense on all of these awards on a straight-line basis over the vesting period with no changes for final projected payout of the awards. We account for forfeitures as they occur.

Below were the assumptions used in the Monte Carlo calculation for each material award granted in 2019, 2018 and 2017:

| | **June 3, 2019** | **February 7, 2019** | September 17, 2018 | February 8, 2018 | February 9, 2017 |
|---|---|---|---|---|---|
| Expected volatility | **39.7%** | **36.7%** | 36.6% | 34.8% | 33.6% |
| Expected term (in years) | **2.6** | **2.9** | 3.0 | 3.0 | 3.0 |
| Risk-free interest rate | **1.78%** | **2.43%** | 2.85% | 2.28% | 1.38% |

Expected volatility – In determining expected volatility, we have considered a number of factors, including historical volatility.

Expected term – We use the measurement period of the award to determine the expected term assumption for the Monte Carlo simulation valuation model.

Risk-free interest rate – We use an implied "spot rate" yield on U.S. Treasury Constant Maturity rates as of the grant date for our assumption of the risk-free interest rate.

Expected dividend yield – We do not currently pay dividends on our capital stock; therefore, a dividend yield of 0% was used in the Monte Carlo simulation valuation model.

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

*Market Risk*

- *Foreign Currency Risk*

Our financial results are affected by changes in foreign exchange rates and economic conditions in foreign countries in which we operate. Our primary overseas markets are in Europe and Asia, thus exposing us to exchange rate risk from fluctuations in the euro, the Chinese renminbi and certain other currencies used in Asia. We seek to mitigate exposure to variability in currency exchange rates, when possible, through the use of natural hedges, whereby purchases and sales in the same foreign currency and with similar maturity dates offset one another. We further seek to mitigate this exposure through hedging activities by entering into foreign exchange forward contracts with third parties when the use of natural hedges is not possible or desirable. We currently do not use derivative instruments for trading or speculative purposes. We monitor foreign exchange risks and at times manage such risks on specific transactions. Our risk management process primarily uses analytical techniques and sensitivity analysis. In 2019, a 10% strengthening of the U.S dollar relative to other currencies would have resulted in a decrease to net sales and net income of approximately $38 million and $3 million, respectively, while a 10% weakening of the U.S. dollar relative to other currencies would have resulted in an increase to net sales and net income of approximately $46 million and $4 million, respectively.

- *Interest Rate Risk*

As of December 31, 2019, we had $123.0 million in borrowings outstanding under our revolving credit facility. The interest charged on these borrowings fluctuates with movements in the benchmark LIBOR. As of December 31, 2019, the effective all-in rate of interest on our revolving credit facility was 3.30%, net of the impact of our interest rate swap, and a 100 basis point increase in LIBOR would have increased the amount of interest expense by approximately $1.2 million for the year ended December 31, 2019.

- *Commodity Risk*

We are subject to fluctuations in the cost of raw materials used to manufacture our materials and products. In particular, we are exposed to market fluctuations in commodity pricing as we utilize certain materials, such as copper and ceramic, which are key materials in certain of our products. In order to minimize the risk of market driven price changes in these commodities, we utilize hedging strategies to insulate us against price fluctuations of copper, the most frequently used commodity in our manufacturing processes. We currently do not use hedging strategies to minimize the risk of price fluctuations on other commodity-based raw materials; however, we regularly review such strategies to hedge market risk on an ongoing basis.

For additional discussion, refer to “Note 2 – Fair Value Measurements” and “Note 3 – Hedging Transactions and Derivative Financial Instruments” to “Item 8. Financial Statements and Supplementary Data.”

**Item 8. Financial Statements and Supplementary Data**

## REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors and Shareholders of Rogers Corporation

***Opinions on the Financial Statements and Internal Control over Financial Reporting***

We have audited the accompanying consolidated statements of financial position of Rogers Corporation and its subsidiaries (the "Company") as of December 31, 2019 and 2018, and the related consolidated statements of operations, comprehensive income, shareholders' equity and cash flows for each of the three years in the period ended December 31, 2019, including the related notes and schedule of valuation and qualifying accounts for each of the three years in the period ended December 31, 2019 appearing under Item 8 (collectively referred to as the "consolidated financial statements"). We also have audited the Company's internal control over financial reporting as of December 31, 2019, 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, 2019 and 2018, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2019 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, 2019, based on criteria established in *Internal Control - Integrated Framework* (2013) issued by the COSO.

*Change in Accounting Principle*

As discussed in Note 14 to the consolidated financial statements, the Company changed the manner in which it accounts for revenues from contracts with customers in 2018.

***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 9A. Our responsibility is to express opinions on the Company's consolidated financial statements and on the Company's internal control over financial reporting based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

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

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

***Definition and Limitations of Internal Control over Financial Reporting***

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

assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

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

***Critical Audit Matters***

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

*Goodwill Impairment Assessment - curamik® Reporting Unit*

As described in Notes 1 and 6 to the consolidated financial statements, the Company's consolidated goodwill balance was $262.9 million as of December 31, 2019, and the goodwill associated with the curamik® reporting unit was $67.0 million. Goodwill is tested for impairment annually as of November 30 and between annual impairment tests if events or changes in circumstances indicate the carrying value may be impaired. If a reporting unit's carrying value is greater than its fair value, then an impairment is recognized for the excess and charged to operations. Management estimated the fair value of the curamik® reporting unit using an income approach based on the present value of future cash flows through a five year discounted cash flow analysis. Determining the fair value is subjective and requires the use of significant estimates and assumptions, including financial projections for net sales, gross margin and operating margin, discount rate, terminal year growth rate and future market conditions, among others.

The principal considerations for our determination that performing procedures relating to the goodwill impairment assessment of the curamik® reporting unit is a critical audit matter are there was significant judgment by management when developing the fair value measurement of the reporting unit; this in turn led to a high degree of auditor judgment, subjectivity, and effort in performing procedures and in evaluating audit evidence over management's cash flow projections and significant assumptions, including the financial projections for net sales, gross margin, and discount rate. In addition, the audit effort involved the use of professionals with specialized skill and knowledge to assist in performing these procedures and evaluating the audit evidence obtained.

Addressing the matter involved performing procedures and evaluating audit evidence in connection with forming our overall opinion on the consolidated financial statements. These procedures included testing the effectiveness of controls relating to management's goodwill impairment assessment, including controls over the valuation of the Company's reporting units. These procedures also included, among others, testing management's process for developing the fair value estimate; evaluating the appropriateness of the discounted cash flow analysis; testing the completeness, accuracy, and relevance of underlying data used in the analysis; and evaluating the reasonableness of the significant assumptions used by management, including the financial projections for net sales, gross margin, and discount rate. Evaluating the reasonableness of management's assumptions related to the financial projections for net sales and gross margin involved evaluating whether the assumptions used by management were reasonable considering (i) the current and past performance of the reporting unit, (ii) the consistency with external market and industry data, and (iii) whether these assumptions were consistent with evidence obtained in other areas of the audit. Professionals with specialized skill and knowledge were used to assist in the evaluation of the appropriateness of the discounted cash flow analysis and certain significant assumptions, including the discount rate.

*Asbestos-Related Liabilities and Insurance Receivables*

As described in Notes 1 and 12 to the consolidated financial statements, the Company's consolidated asbestos-related liabilities and asbestos-related insurance receivables balances were $85.9 million and $78.3 million, respectively, as of December 31, 2019. Management reviews the asbestos-related projections annually in the fourth quarter of each year unless facts and circumstances materially change during the year, at which time management would analyze these projections. Management recognizes a liability for asbestos-related contingencies that are probable of occurrence and reasonably estimable. In connection with the recognition of liabilities for asbestos related matters, management records asbestos-related insurance receivables that are deemed probable. Estimates of asbestos-related contingent liabilities and related insurance receivables are based on an independent actuarial analysis and an independent insurance usage analysis, respectively, prepared annually by third parties. The actuarial analysis contains numerous assumptions, including the number of claims that may be received, the type and severity of the disease alleged by each claimant, the long latency period associated with asbestos exposure, dismissal rates, average indemnity costs, average defense costs, costs of medical treatment, the financial resources of other companies that are co-defendants in claims, uncertainties surrounding the litigation process from jurisdiction to jurisdiction and from case to case, and the impact of potential changes in legislative or judicial standards, including potential tort reform. The insurance usage analysis considers, among other things,

applicable deductibles, retentions and policy limits, the solvency and historical payment experience of various insurance carriers, the likelihood of recovery as estimated by external legal counsel and existing insurance settlements.

The principal considerations for our determination that performing procedures relating to asbestos-related liabilities and insurance receivables is a critical audit matter are there was significant judgment by management when determining the asbestos-related liabilities and insurance receivables; this in turn led to a high degree of auditor judgment, subjectivity, and effort in performing procedures and in evaluating management's analyses and significant assumptions, including the number of claims that may be received, type and severity of the disease alleged by each claimant, average indemnity costs, average defense costs, and dismissal rates. In addition, the audit effort involved the use of professionals with specialized skill and knowledge to assist in performing these procedures and evaluating the audit evidence obtained.

Addressing the matter involved performing procedures and evaluating audit evidence in connection with forming our overall opinion on the consolidated financial statements. These procedures included testing the effectiveness of controls relating to the analyses of the asbestos-related liabilities and insurance receivables. These procedures also included, among others, testing management's process for developing the estimates; evaluating the appropriateness of the analyses; testing the completeness and accuracy of underlying data used in the analyses; and evaluating the reasonableness of significant assumptions used by management, including the number of claims that may be received, type and severity of the disease alleged by each claimant, average indemnity costs, average defense costs, and dismissal rates. Evaluating reasonableness of management's assumptions involved evaluating whether the assumptions used by management were reasonable considering (i) the current and past asbestos litigation trends and (ii) the consistency with external industry projections. Professionals with specialized skill and knowledge were used to assist in the evaluation of management's analyses and certain significant assumptions, including the number of claims that may be received, the type and severity of the disease alleged by each claimant, average indemnity costs, average defense costs, and dismissal rates.

/s/ PricewaterhouseCoopers LLP

Hartford, Connecticut
February 20, 2020

We have served as the Company's auditor since 2015.

**ROGERS CORPORATION**
**CONSOLIDATED STATEMENTS OF OPERATIONS**
For each of the fiscal years in the three-year period ended December 31, 2019

| *(Dollars and shares in thousands, except per share amounts)* | **2019** | 2018 | 2017 |
|---|---|---|---|
| **Net sales** | **$ 898,260** | $ 879,091 | $ 821,043 |
| Cost of sales | **583,968** | 568,308 | 502,468 |
| **Gross margin** | **314,292** | 310,783 | 318,575 |
| | | | |
| Selling, general and administrative expenses | **168,682** | 164,046 | 161,651 |
| Research and development expenses | **31,685** | 33,075 | 29,547 |
| Restructuring and impairment charges | **2,485** | 4,038 | 3,567 |
| Other operating (income) expense, net | **959** | (3,087) | (5,329) |
| **Operating income** | **110,481** | 112,711 | 129,139 |
| | | | |
| Equity income in unconsolidated joint ventures | **5,319** | 5,501 | 4,898 |
| Pension settlement charges | **(53,213)** | — | — |
| Other income (expense), net | **(592)** | (994) | 5,019 |
| Interest expense, net | **(6,869)** | (6,629) | (6,131) |
| **Income before income tax expense** | **55,126** | 110,589 | 132,925 |
| Income tax expense | **7,807** | 22,938 | 52,466 |
| **Net income** | **$ 47,319** | $ 87,651 | $ 80,459 |
| | | | |
| **Basic earnings per share** | **$ 2.55** | $ 4.77 | $ 4.43 |
| **Diluted earnings per share** | **$ 2.53** | $ 4.70 | $ 4.34 |
| | | | |
| Shares used in computing: | | | |
| Basic earnings per share | **18,573** | 18,374 | 18,154 |
| Diluted earnings per share | **18,713** | 18,659 | 18,547 |

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

**ROGERS CORPORATION**
**CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME**
For each of the fiscal years in the three-year period ended December 31, 2019

| *(Dollars in thousands)* | **2019** | 2018 | 2017 |
|---|---|---|---|
| Net income | **$ 47,319** | $ 87,651 | $ 80,459 |
| | | | |
| Foreign currency translation adjustment | **(4,990)** | (12,505) | 28,463 |
| Pension and other postretirement benefits: | | | |
| Pension settlement charges, net of tax (Note 4) | **43,934** | — | — |
| Actuarial net loss incurred, net of tax (Note 4) | **(6,079)** | (1,678) | (1,481) |
| Amortization of loss, net of tax (Note 4) | **390** | 176 | 99 |
| Derivative instrument designated as cash flow hedge: | | | |
| Change in unrealized (loss) gain before reclassifications, net of tax (Note 4) | **(1,171)** | 519 | (6) |
| Unrealized (gain) loss reclassified into earnings, net of tax (Note 4) | **(155)** | (191) | 32 |
| Other comprehensive income (loss) | **31,929** | (13,679) | 27,107 |
| Comprehensive income | **$ 79,248** | $ 73,972 | $ 107,566 |

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

**ROGERS CORPORATION**
**CONSOLIDATED STATEMENTS OF FINANCIAL POSITION**

| *(Dollars and share amounts in thousands, except par value of capital stock)* | As of December 31, 2019 | 2018 |
|---|---|---|
| **Assets** | | |
| Current assets | | |
| Cash and cash equivalents | **$ 166,849** | $ 167,738 |
| Accounts receivable, less allowance for doubtful accounts of $1,691 and $1,354 | **122,285** | 144,623 |
| Contract assets | **22,455** | 22,728 |
| Inventories | **132,859** | 132,637 |
| Prepaid income taxes | **4,524** | 3,093 |
| Asbestos-related insurance receivables, current portion | **4,292** | 4,138 |
| Other current assets | **10,838** | 10,829 |
| Total current assets | **464,102** | 485,786 |
| Property, plant and equipment, net of accumulated depreciation of $341,119 and $317,414 | **260,246** | 242,759 |
| Investments in unconsolidated joint ventures | **16,461** | 18,667 |
| Deferred income taxes | **17,117** | 8,236 |
| Goodwill | **262,930** | 264,885 |
| Other intangible assets, net of amortization | **158,947** | 177,008 |
| Pension assets | **12,790** | 19,273 |
| Asbestos-related insurance receivables, non-current portion | **74,024** | 59,685 |
| Other long-term assets | **6,564** | 3,045 |
| Total assets | **$ 1,273,181** | $ 1,279,344 |
| **Liabilities and Shareholders' Equity** | | |
| Current liabilities | | |
| Accounts payable | **$ 33,019** | $ 40,321 |
| Accrued employee benefits and compensation | **29,678** | 30,491 |
| Accrued income taxes payable | **10,649** | 7,032 |
| Asbestos-related liabilities, current portion | **5,007** | 5,547 |
| Other accrued liabilities | **21,872** | 23,789 |
| Total current liabilities | **100,225** | 107,180 |
| Borrowings under revolving credit facility | **123,000** | 228,482 |
| Pension and other postretirement benefits liabilities | **1,567** | 1,739 |
| Asbestos-related liabilities, non-current portion | **80,873** | 64,799 |
| Non-current income tax | **10,423** | 8,418 |
| Deferred income taxes | **9,220** | 10,806 |
| Other long-term liabilities | **13,973** | 9,596 |
| Commitments and contingencies (Note 10 and Note 12) | | |
| Shareholders' equity | | |
| Capital stock - $1 par value; 50,000 authorized shares; 18,577 and 18,395 shares issued and outstanding, respectively | **18,577** | 18,395 |
| Additional paid-in capital | **138,526** | 132,360 |
| Retained earnings | **823,702** | 776,403 |
| Accumulated other comprehensive loss | **(46,905)** | (78,834) |
| Total shareholders' equity | **933,900** | 848,324 |
| Total liabilities and shareholders' equity | **$ 1,273,181** | $ 1,279,344 |

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

**ROGERS CORPORATION**
**CONSOLIDATED STATEMENTS OF SHAREHOLDERS' EQUITY**
For each of the fiscal years in the three-year period ended December 31, 2019

| *(Dollars and share amounts in thousands)* | **2019** | 2018 | 2017 |
|---|---|---|---|
| **Capital Stock** | | | |
| Balance, beginning of period | **$ 18,395** | $ 18,255 | $ 18,021 |
| Shares issued for vested restricted stock units, net of cancellations for tax withholding | **144** | 117 | 121 |
| Stock options exercised | **11** | 22 | 83 |
| Shares issued for employee stock purchase plan | **15** | 12 | 15 |
| Shares issued to directors | **12** | 12 | 15 |
| Shares repurchased | **—** | (23) | — |
| Balance, end of period | **18,577** | 18,395 | 18,255 |
| **Additional Paid-In Capital** | | | |
| Balance, beginning of period | **132,360** | 128,933 | 118,678 |
| Shares issued for vested restricted stock units, net of cancellations for tax withholding | **(7,694)** | (6,717) | (5,430) |
| Stock options exercised | **333** | 839 | 3,002 |
| Shares issued for employee stock purchase plan | **1,234** | 1,070 | 880 |
| Shares issued to directors | **(12)** | (12) | (15) |
| Equity compensation expense | **12,305** | 11,223 | 11,818 |
| Shares repurchased | **—** | (2,976) | — |
| Balance, end of period | **138,526** | 132,360 | 128,933 |
| **Retained Earnings** | | | |
| Balance, beginning of period | **776,403** | 684,540 | 591,349 |
| Net income | **47,319** | 87,651 | 80,459 |
| Cumulative-effect adjustment for lease accounting | **(20)** | — | — |
| Cumulative-effect adjustment for revenue recognition | **—** | 4,212 | — |
| Cumulative-effect adjustment for change in accounting for share-based compensation | **—** | — | 12,732 |
| Balance, end of period | **823,702** | 776,403 | 684,540 |
| **Accumulated Other Comprehensive Loss** | | | |
| Balance, beginning of period | **(78,834)** | (65,155) | (92,262) |
| Other comprehensive income (loss) | **31,929** | (13,679) | 27,107 |
| Balance, end of period | **(46,905)** | (78,834) | (65,155) |
| **Total Shareholders' Equity** | **$ 933,900** | $ 848,324 | $ 766,573 |

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

**ROGERS CORPORATION**
**CONSOLIDATED STATEMENTS OF CASH FLOWS**
For each of the fiscal years in the three-year period ended December 31, 2019

| *(Dollars in thousands)* | **2019** | 2018 | 2017 |
|---|---|---|---|
| **Operating Activities:** | | | |
| Net income | **$ 47,319** | $ 87,651 | $ 80,459 |
| Adjustments to reconcile net income to cash provided by operating activities: | | | |
| Depreciation and amortization | **49,162** | 50,073 | 44,099 |
| Equity compensation expense | **12,305** | 11,223 | 11,818 |
| Deferred income taxes | **(17,549)** | (3,325) | 17,513 |
| Equity in undistributed income of unconsolidated joint ventures | **(5,319)** | (5,501) | (4,898) |
| Dividends received from unconsolidated joint ventures | **5,375** | 4,431 | 3,529 |
| Pension settlement charges | **53,213** | — | — |
| Pension and other postretirement benefits | **(943)** | (1,552) | (1,561) |
| Asbestos-related charges | **1,720** | 704 | 3,400 |
| Loss (gain) on sale or disposal of property, plant and equipment | **756** | (164) | (5,154) |
| Impairment charges | **1,537** | 1,506 | 807 |
| Provision (benefit) for doubtful accounts | **437** | 236 | (439) |
| Changes in assets and liabilities: | | | |
| Accounts receivable | **20,677** | (3,824) | (14,059) |
| Contract assets | **273** | (22,728) | — |
| Inventories | **(1,200)** | (19,013) | (14,208) |
| Pension and postretirement benefit contributions | **(103)** | (25,354) | (906) |
| Other current assets | **(1,519)** | (648) | (576) |
| Accounts payable and other accrued expenses | **(9,139)** | (7,886) | 12,341 |
| Proceeds from insurance related to operations | **—** | — | 932 |
| Other, net | **4,321** | 991 | 5,885 |
| Net cash provided by operating activities | **161,323** | 66,820 | 138,982 |
| | | | |
| **Investing Activities:** | | | |
| Acquisition of business, net of cash received | **—** | (77,969) | (60,191) |
| Isola asset acquisition | **—** | (43,434) | — |
| Capital expenditures | **(51,597)** | (47,115) | (27,215) |
| Proceeds from the sale of property, plant and equipment, net | **9** | 1,081 | 8,095 |
| Proceeds from insurance claims | **—** | — | 1,041 |
| Return of capital from unconsolidated joint ventures | **2,625** | — | — |
| Net cash used in investing activities | **(48,963)** | (167,437) | (78,270) |
| | | | |
| **Financing Activities:** | | | |
| Proceeds from borrowings under revolving credit facility | **—** | 102,500 | — |
| Line of credit issuance costs | **—** | — | (1,169) |
| Repayment of debt principal and finance lease obligations | **(105,886)** | (6,162) | (110,689) |
| Payments of taxes related to net share settlement of equity awards | **(7,550)** | (6,600) | (5,309) |
| Proceeds from the exercise of stock options, net | **344** | 861 | 3,085 |
| Proceeds from issuance of shares to employee stock purchase plan | **1,249** | 1,082 | 895 |
| Share repurchases | **—** | (2,999) | — |
| Net cash (used in) provided by financing activities | **(111,843)** | 88,682 | (113,187) |
| | | | |
| Effect of exchange rate fluctuations on cash | **(1,406)** | (1,486) | 5,867 |
| | | | |
| **Net decrease in cash and cash equivalents** | **(889)** | (13,421) | (46,608) |
| **Cash and cash equivalents at beginning of period** | **167,738** | 181,159 | 227,767 |
| **Cash and cash equivalents at end of period** | **$ 166,849** | $ 167,738 | $ 181,159 |
| | | | |
| **Supplemental Disclosures:** | | | |
| Accrued capital additions | **$ 3,420** | $ 2,744 | $ 2,376 |
| Cash paid during the year for: | | | |
| Interest, net of amounts capitalized | **$ 7,762** | $ 7,040 | $ 5,787 |
| Income taxes | **$ 17,593** | $ 29,161 | $ 36,918 |

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

## Note 1 – Basis of Presentation, Organization and Summary of Significant Accounting Policies

As used herein, the terms "Company," "Rogers," "we," "us," "our" and similar terms mean Rogers Corporation and its consolidated subsidiaries, unless the context indicates otherwise.

### *Principles of Consolidation*

The consolidated financial statements include the accounts of the Company and our wholly-owned subsidiaries, after elimination of intercompany balances and transactions. The preparation of financial statements, in conformity with accounting principles generally accepted in the United States (U.S. GAAP), requires management to make estimates and assumptions that affect the amounts reported in the financial statements and accompanying notes. Actual results could differ from those estimates.

### *Organization*

Our reporting structure is comprised of three strategic operating segments: Advanced Connectivity Solutions (ACS), Elastomeric Material Solutions (EMS) and Power Electronics Solutions (PES). The remaining operations are accumulated and reported as our Other operating segment.

*Advanced Connectivity Solutions*

Our ACS operating segment designs, develops, manufactures and sells circuit materials and solutions enabling high-performance and high-reliability connectivity for applications in wireless infrastructure (e.g., power amplifiers, antennas and small cells), automotive (e.g., ADAS, telematics and thermal solutions), aerospace and defense (e.g. antenna systems, communication systems and phased array radar systems), connected devices (e.g., mobile internet devices and thermal solutions) and wired infrastructure (e.g., computing and IP infrastructure) markets. We believe these products have characteristics that offer performance and other functional advantages in many market applications that serve to differentiate our products from other commonly available materials. ACS products are sold principally to independent and captive printed circuit board fabricators that convert our laminates to custom printed circuits. Trade names for our ACS products include: RO4000® Series, RO3000® Series, RT/duroid®, CLTE Series®, AD Series®, CuClad® Series, TMM®, Kappa®, XTremeSpeed RO1200™ Laminates, DiClad® Series, IsoClad® Series, COOLSPAN®, MAGTREX™, TC Series®, IM Series™, 92ML™, 2929 Bondply and 3001 Bondply Film. As of December 31, 2019, our ACS operating segment had manufacturing and administrative facilities in Chandler, Arizona; Rogers, Connecticut; Bear, Delaware; Evergem, Belgium; and Suzhou, China.

*Elastomeric Material Solutions*

Our EMS operating segment designs, develops, manufactures and sells engineered material solutions for a wide variety of applications and markets. These include polyurethane and silicone materials used in cushioning, gasketing and sealing, and vibration management applications for general industrial, portable electronics, automotive, mass transit, aerospace and defense, footwear and impact mitigation and printing markets; customized silicones used in flex heater and semiconductor thermal applications for general industrial, portable electronics, automotive, mass transit, aerospace and defense and medical markets; polytetrafluoroethylene and ultra-high molecular weight polyethylene materials used in wire and cable protection, electrical insulation, conduction and shielding, hose and belt protection, vibration management, cushioning, gasketing and sealing, and venting applications for general industrial, automotive and aerospace and defense markets. We believe these materials have characteristics that offer functional advantages in many market applications which serve to differentiate Rogers' products from other commonly available materials. EMS products are sold globally to converters, fabricators, distributors and original equipment manufacturers (OEMs). Trade names for our EMS products include: PORON®, BISCO®, DeWAL®, ARLON®, eSorba®, Griswold®, Diversified Silicone Products®, XRD®, R/bak® and HeatSORB™.

As of December 31, 2019, our EMS operating segment had administrative and manufacturing facilities in Moosup, Connecticut; Rogers, Connecticut; Woodstock, Connecticut; Bear, Delaware; Carol Stream, Illinois; Narragansett, Rhode Island; Ansan, South Korea; and Suzhou, China. We also own 50% of two unconsolidated joint ventures: (1) Rogers Inoac Corporation (RIC), a joint venture established in Japan to design, develop, manufacture and sell PORON products predominantly for the Japanese market and (2) Rogers INOAC Suzhou Corporation (RIS), a joint venture established in China to design, develop, manufacture and sell PORON products primarily for RIC customers in various Asian countries. INOAC Corporation owns the remaining 50% of both RIC and RIS. RIC has manufacturing facilities at the INOAC facilities in Nagoya and Mie, Japan, and RIS has manufacturing facilities at Rogers' facilities in Suzhou, China.

In July 2018, we acquired 100% of the membership interests in Griswold LLC (Griswold), a manufacturer of a wide range of high-performance engineered cellular elastomer and microcellular polyurethane products and solutions, for an aggregate purchase price of $78.0 million, net of cash acquired.

*Power Electronics Solutions*

Our PES operating segment designs, develops, manufactures and sells ceramic substrate materials, busbars and cooling solutions for a variety of applications in EV/HEV, general industrial, mass transit, renewable energy, aerospace and defense and wired infrastructure markets. We sell our ceramic substrate materials and cooling solutions under the curamik® trade name and our busbars under the ROLINX® trade name. As of December 31, 2019, our PES operating segment had manufacturing and administrative facilities in Evergem, Belgium; Eschenbach, Germany; Budapest, Hungary; and Suzhou, China.

*Other*

Our Other operating segment consists of elastomer components for applications in general industrial market, as well as elastomer floats for level sensing in fuel tanks, motors, and storage tanks applications in the general industrial and automotive markets. We sell our elastomer components under our ENDUR® trade name and our floats under our NITROPHYL® trade name.

***Summary of Significant Accounting Policies***

*Cash Equivalents*

Highly liquid investments with original maturities of three months or less are considered cash equivalents. These investments are stated at cost, which approximates fair value.

*Investments in Unconsolidated Joint Ventures*

We account for our investments in and advances to unconsolidated joint ventures, both of which are 50% owned, using the equity method of accounting.

*Foreign Currency*

All balance sheet accounts of foreign subsidiaries are translated or remeasured at exchange rates in effect at each year end, and income statement items are translated using the average exchange rates for the year. Translation adjustments for those entities that operate under a local currency are recorded directly to a separate component of shareholders' equity, while remeasurement adjustments for those entities that operate under the parent's functional currency are recorded to the income statement as a component of "Other income (expense), net." Currency transaction gains and losses are reported as income or expense, respectively, in the consolidated statements of operations as a component of "Other income (expense), net." Such adjustments resulted in losses of $0.9 million in 2019, losses of $0.7 million in 2018 and gains of $0.9 million in 2017.

*Allowance for Doubtful Accounts*

The allowance for doubtful accounts is determined based on a variety of factors that affect the potential collectability of the related receivables, including the length of time receivables are past due, customer credit ratings, financial stability of customers, specific one-time events and past customer history. In addition, in circumstances where we are made aware of a specific customer's inability to meet its financial obligations, a specific allowance is established. The majority of accounts are individually evaluated on a regular basis and appropriate reserves are established as deemed appropriate based on the criteria previously mentioned. The remainder of the reserve is based on our estimates and takes into consideration historical trends, market conditions and the composition of our customer base.

*Inventories*

Inventories are stated at the lower of cost or net realizable value. The cost of inventories is determined using the first in, first out (FIFO) method. An allowance is made for estimated losses due to obsolescence. The allowance is determined for groups of products based on purchases in the recent past and/or expected future demand and market conditions. Abnormal amounts of idle facility expense and waste are not capitalized in inventory. The allocation of fixed production overheads to the inventory cost is based on the normal capacity of the production facilities.

Our "Inventories" line item in the consolidated statements of financial position consisted of the following:

| | As of December 31, | |
|---|---|---|
| *(Dollars in thousands)* | **2019** | 2018 |
| Raw materials | **$ 61,338** | $ 59,321 |
| Work-in-process | **30,043** | 30,086 |
| Finished goods | **41,478** | 43,230 |
| Total inventories | **$ 132,859** | $ 132,637 |

*Property, Plant and Equipment*

Property, plant and equipment are stated on the basis of cost. For financial reporting purposes, provisions for depreciation are calculated on a straight-line basis over the following estimated useful lives of the underlying assets:

| Property, Plant and Equipment Classification | Estimated Useful Lives |
|---|---|
| Buildings and improvements | 30-40 years |
| Machinery and equipment | 5-15 years |
| Office equipment | 3-10 years |

*Software Costs*

We capitalize certain internal and external costs of computer software developed or obtained for internal use, principally related to software coding, software configuration, designing system interfaces and installation and testing of the software. We amortize capitalized internal use software costs using the straight-line method over the estimated useful lives of the software, generally from three to five years. Net capitalized software and development costs were $0.2 million and $1.7 million for the years ended December 31, 2019 and 2018, respectively. Capitalized software is included within "Property, plant and equipment, net of accumulated depreciation" in the consolidated statements of financial position.

*Goodwill and Other Intangible Assets*

We have made acquisitions over the years that included the recognition of intangible assets. Intangible assets are classified into three categories: (1) goodwill; (2) other intangible assets with definite lives subject to amortization; and (3) other intangible assets with indefinite lives not subject to amortization. Other intangible assets can include items such as trademarks and trade names, licensed technology, customer relationships and covenants not to compete, among other things. Each definite-lived other intangible asset is amortized over its respective economic useful life using the economic attribution method.

Goodwill is tested for impairment annually and between annual impairment tests if events or changes in circumstances indicate the carrying value may be impaired. If it is more likely than not that our goodwill is impaired, then we compare the estimated fair value of each of our reporting units to its respective carrying value. If a reporting unit's carrying value is greater than its fair value, then an impairment is recognized for the excess and charged to operations. We currently have four reporting units with goodwill: ACS, EMS, curamik® and Elastomer Components Division (ECD). Consistent with historical practice, the annual impairment test on these reporting units was performed as of November 30, 2019.

The application of the annual goodwill impairment test requires significant judgment, including the identification of reporting units, assignment of assets and liabilities to reporting units and determination of the fair value of each reporting unit. Determining the fair value is subjective and requires the use of significant estimates and assumptions, including financial projections for net sales, gross margin and operating margin, discount rates, terminal growth rates and future market conditions, among others. We estimated the fair value of our reporting units using an income approach based on the present value of future cash flows through a five year discounted cash flow analysis. The discounted cash flow analysis utilized the discount rates for each of the reporting units ranging from 10.30% for EMS to 11.90% for ACS, and terminal growth rates ranging from 3.3% for curamik® to 4.6% for ACS. We believe this approach yields the most appropriate evidence of fair value as our reporting units are not easily compared to other corporations involved in similar businesses. We further believe that the assumptions and rates used in our annual goodwill impairment test are reasonable, but inherently uncertain. There were no impairment charges resulting from our goodwill impairment analysis for the year ended December 31, 2019. Our ACS, EMS, curamik® and ECD reporting units had allocated goodwill of $51.7 million, $142.0 million, $67.0 million and $2.2 million respectively, as of December 31, 2019.

Indefinite-lived other intangible assets are tested for impairment annually and between annual impairment tests if events or changes in circumstances indicate the carrying value may be impaired. If it is more likely than not that an indefinite-lived other intangible asset is impaired, then we compare the estimated fair value of that indefinite-lived other intangible asset to its respective carrying value. If an indefinite-lived other intangible asset's carrying value is greater than its fair value, then an impairment charge is recognized for the excess and charged to operations. Consistent with historical practice, the annual impairment test on these reporting units was performed as of November 30, 2019. The application of the annual indefinite-lived other intangible asset impairment test requires significant judgment, including the determination of fair value of each indefinite-lived other intangible asset. Fair value is primarily based on income approaches using discounted cash flow models, which have significant assumptions. Such assumptions are subject to variability from year to year and are directly impacted by global market conditions. There were no impairment charges resulting from our indefinite-lived other intangible assets impairment analysis for the year ended December 31, 2019. The curamik® reporting unit had an indefinite-lived other intangible asset of $4.4 million as of December 31, 2019.

Definite-lived other intangible assets are tested for recoverability whenever events or changes in circumstances indicate the carrying value may not be recoverable. The recoverability test involves comparing the estimated sum of the undiscounted cash flows for each definite-lived other intangible asset to its respective carrying value. If a definite-lived other intangible asset's carrying value

is greater than the sum of its undiscounted cash flows, then the definite-lived other intangible asset's carrying value is compared to its estimated fair value and an impairment charge is recognized for the excess and charged to operations. The application of the recoverability test requires significant judgment, including the identification of the asset group and determination of undiscounted cash flows and fair value of the underlying definite-lived other intangible asset. Determination of undiscounted cash flows requires the use of significant estimates and assumptions, including certain financial projections. Fair value is primarily based on income approaches using discounted cash flow models, which have significant assumptions. Such assumptions are subject to variability from year to year and are directly impacted by global market conditions. There were no impairment charges resulting from our definite-lived other intangible assets impairment analysis for the year ended December 31, 2019. Our ACS, EMS and curamik® reporting units had definite-lived other intangible assets of $4.7 million, $140.4 million and $9.5 million, respectively, as of December 31, 2019.

*Environmental and Product Liabilities*

We accrue for our environmental investigation, remediation, operating and maintenance costs when it is probable that a liability has been incurred and the amount can be reasonably estimated. For environmental matters, the most likely cost to be incurred is accrued based on an evaluation of currently available facts with respect to each individual site, including existing technology, current laws and regulations and prior remediation experience. For sites with multiple potential responsible parties (PRPs), we consider our likely proportionate share of the anticipated remediation costs and the ability of the other parties to fulfill their obligations in establishing a provision for those costs. When no amount within a range of estimates is more likely to occur than another, we accrue to the low end of the range and disclose the range. When future liabilities are determined to be reimbursable by insurance coverage, an accrual is recorded for the potential liability and a receivable is recorded for the estimated insurance reimbursement amount. We are exposed to the uncertain nature inherent in such remediation and the possibility that initial estimates will not reflect the final outcome of a matter.

We review our asbestos-related projections annually in the fourth quarter of each year unless facts and circumstances materially change during the year, at which time we would analyze these projections. We believe the assumptions made on the potential exposure and expected insurance coverage are reasonable at the present time, but are subject to uncertainty based on the actual future outcome of our asbestos litigation. Our estimates of asbestos-related contingent liabilities and related insurance receivables are based on an independent actuarial analysis and an independent insurance usage analysis prepared annually by third parties. The actuarial analysis contains numerous assumptions, including number of claims that might be received, the type and severity of the disease alleged by each claimant, the long latency period associated with asbestos exposure, dismissal rates, average indemnity costs, average defense costs, costs of medical treatment, the financial resources of other companies that are co-defendants in claims, uncertainties surrounding the litigation process from jurisdiction to jurisdiction and from case to case, and the impact of potential changes in legislative or judicial standards, including potential tort reform. Furthermore, any predictions with respect to these assumptions are subject to even greater uncertainty as the projection period lengthens. The insurance usage analysis considers, among other things, applicable deductibles, retentions and policy limits, the solvency and historical payment experience of various insurance carriers, the likelihood of recovery as estimated by external legal counsel and existing insurance settlements.

We believe the assumptions used in our models for determining our potential exposure and related insurance coverage are reasonable at the present time, but such assumptions are inherently uncertain. Given the inherent uncertainty in making projections, we plan to re-examine periodically the assumptions used in the projections of current and future asbestos claims, and we will update them if needed based on our experience, changes in the assumptions underlying our models, and other relevant factors, such as changes in the tort system. Our accrued asbestos liabilities may not approximate our actual asbestos-related indemnity and defense costs, and our accrued insurance recoveries may not be realized. We believe that it is reasonably possible that we may incur additional charges for our asbestos liabilities and defense costs in the future that could exceed existing reserves and insurance recoveries.

*Fair Value of Financial Instruments*

Management believes that the carrying values of financial instruments, including cash and cash equivalents, short-term investments, accounts receivable, accounts payable and accrued liabilities approximate fair value based on the maturities of these instruments. The fair value of our borrowings under credit facility are determined using discounted cash flows based upon our estimated current interest cost for similar type borrowings or current market value, which falls under Level 2 of the fair value hierarchy. Based on our credit characteristics as of December 31, 2019, borrowings would generally bear interest at London interbank offered rate (LIBOR) plus 137.5 basis points. As the current borrowings under the Third Amended Credit Agreement bear interest at adjusted 1-month LIBOR plus 137.5 basis points, we believe the carrying value of our borrowings approximates fair value. For additional information on the calculation of fair value measurements, refer to "Note 2 – Fair Value Measurements."

*Hedging Transactions and Derivative Financial Instruments*

From time to time, we use derivative instruments to manage commodity, interest rate and foreign currency exposures. Derivative instruments are viewed as risk management tools and are not used for trading or speculative purposes. To qualify for hedge accounting treatment, derivatives used for hedging purposes must be designated and deemed effective as a hedge of the identified underlying risk exposure at the inception of the contract. Accordingly, changes in fair value of the derivative contract must be

highly correlated with changes in the fair value of the underlying hedged item at inception of the hedge and over the life of the hedge contract.

Derivatives used to hedge forecasted cash flows associated with interest rates, foreign currency commitments, or forecasted commodity purchases are accounted for as cash flow hedges. For those derivative instruments that qualify for hedge accounting treatment, if the hedge is highly effective, all changes in the fair value of the derivative hedging instrument are recorded in other comprehensive income (loss). The derivative hedging instrument will be reclassified to earnings when the hedged item impacts earnings. For those derivative instruments that do not qualify for hedge accounting treatment, any related gains and losses are recognized in the consolidated statements of operations as a component of "Other income (expense), net." For additional information, refer to "Note 3 – Hedging Transactions and Derivative Financial Instruments."

*Concentration of Credit and Investment Risk*

We extend credit on an uncollateralized basis to almost all customers. Concentration of credit and geographic risk with respect to accounts receivable is limited due to the large number and general dispersion of accounts that constitute our customer base. We routinely perform credit evaluations on our customers. As of December 31, 2019 and 2018, there were no customers that individually accounted for more than 10% of total accounts receivable. We did not experience significant credit losses on customers' accounts in 2019, 2018 or 2017.

We are subject to credit and market risk by using derivative instruments. If a counterparty fails to fulfill its performance obligations under a derivative contract, our credit risk will equal the fair value of the derivative instrument. We seek to minimize counterparty credit (or repayment) risk by entering into derivative transactions with major financial institutions with investment grade credit ratings.

We invest excess cash principally in investment grade government securities and time deposits. We have established guidelines relative to diversification and maturities in order to maintain safety and liquidity. These guidelines are periodically reviewed and modified to reflect changes in market conditions.

*Income Taxes*

We are subject to income taxes in the U.S. and in numerous foreign jurisdictions. We account for income taxes following Accounting Standards Codification (ASC) 740, *Income Taxes*, recognizing deferred tax assets and liabilities using enacted tax rates for the effect of temporary differences between book and tax basis of recorded assets and liabilities. Deferred tax assets are reduced by a valuation allowance if it is more likely than not that some or all of a deferred tax asset will not be realized.

We did not make any changes in 2019 to our position on the permanent reinvestment of our historical earnings from foreign operations. With the exception of certain of our Chinese subsidiaries, we continue to assert that historical foreign earnings are indefinitely reinvested. As of December 31, 2019 and 2018, we recorded a deferred tax liability of $1.6 million and $1.8 million, respectively, for Chinese withholding tax on undistributed earnings that are not indefinitely reinvested. The other remaining foreign subsidiaries have both the intent and ability to indefinitely reinvest their undistributed earnings and we expect that these undistributed earnings may give rise to an estimated $3.5 million of additional tax liabilities as a result of distribution of such earnings. If circumstances change and it becomes apparent that some, or all of the undistributed earnings as of December 31, 2019 will not be indefinitely reinvested, the provision for the tax consequences, if any, will be recorded in the period when circumstances change. Distributions out of current and future earnings are permissible to fund discretionary activities such as business acquisitions. However, when distributions are made, this could result in a higher effective tax rate.

We record benefits for uncertain tax positions based on an assessment of whether it is more likely than not that the tax positions will be sustained by the taxing authorities. If this threshold is not met, no tax benefit of the uncertain position is recognized. If the threshold is met, we recognize the largest amount of the tax benefit that is greater than fifty percent likely to be realized upon ultimate settlement.

We recognize interest and penalties within the "Income tax expense" line item in the consolidated statements of operations. Accrued interest and penalties are included within the related tax liability line item in the consolidated statements of financial position.

*Revenue Recognition*

Recognition of revenue occurs when a customer obtains control of promised goods or services in an amount that reflects the consideration to which the providing entity expects to be entitled in exchange for those goods or services. We recognize revenue when all of the following criteria are met: (1) we have entered into a binding agreement, (2) the performance obligations have been identified, (3) the transaction price to the customer has been determined, (4) the transaction price has been allocated to the performance obligations in the contract, and (5) the performance obligations have been satisfied. The majority of our shipping terms permit us to recognize revenue at point of shipment. Some shipping terms require the goods to be cleared through customs or be received by the customer before title passes. In those instances, revenue is not recognized until either the customer has received the goods or they have passed through customs, depending on the circumstances. Shipping and handling costs are treated as fulfillment costs. Sales tax or VAT are excluded from the measurement of the transaction price.

*Pension and Other Postretirement Benefits*

We provide various defined benefit pension plans for our U.S. employees and we sponsor multiple fully insured or self-funded medical plans and fully insured life insurance plans for retirees. In 2013, the defined benefit pension plans were frozen, so that future benefits no longer accrue. The costs and obligations associated with these plans are dependent upon various actuarial assumptions used in calculating such amounts. These assumptions include discount rates, long-term rates of return on plan assets, mortality rates, and other factors. The assumptions used in these models are determined as follows: (i) the discount rate used is based on the PruCurve bond index; (ii) the long-term rate of return on plan assets is determined based on historical portfolio results, market conditions and our expectations of future returns; and (iii) the mortality rate is based on a mortality projection that estimates current longevity rates and their impact on the long-term plan obligations. We determine these assumptions based on consultation with outside actuaries and investment advisors. Any changes in these assumptions could have a significant impact on future recognized pension costs, assets and liabilities. We review these assumptions periodically throughout the year and update as necessary.

We are required, as an employer, to: (a) recognize in our consolidated statements of financial position an asset for a plan's overfunded status or a liability for a plan's underfunded status; (b) measure a plan's assets and a plan's obligations that determine our funded status as of the end of the year; and (c) recognize changes in the funded status of a defined benefit postretirement plan in the year in which the changes occur and report these changes in accumulated other comprehensive loss. In addition, actuarial losses (gains) that are not immediately recognized as net periodic pension cost (credit) are recognized as a component of accumulated other comprehensive loss (income) and amortized into net periodic pension cost (credit) in future periods.

Investments were stated at fair value as of the dates reported. Securities traded on a national securities exchange were valued at the last reported sales price on the last business day of the plan year. Fixed-income bonds were valued using price evaluations provided by independent pricing services. The fair value of the guaranteed deposit account was determined through discounting expected future investment cash flow from both investment income and repayment of principal for each investment purchased. The estimated fair values of the participation units owned by the plan in pooled separate accounts were based on quoted redemption values and adjusted for management fees and asset charges, as determined by the recordkeeper, on the last business day of the relevant plan year. Pooled separate accounts are accounts established solely for the purpose of investing the assets of one or more plans. Funds in a separate account are not commingled with other Company assets for investment purposes.

*Advertising Costs*

Advertising costs are expensed as incurred and amounted to $3.6 million, $3.8 million and $4.4 million for the years ended December 31, 2019, 2018 and 2017, respectively.

*Earnings Per Share*

Basic earnings per share is based on the weighted average number of common shares outstanding. Diluted earnings per share is based on the weighted average number of common shares outstanding and all dilutive potential common shares outstanding.

*Equity Compensation*

Equity compensation mainly consists of expense related to restricted stock units and deferred stock units.

Performance-based restricted stock unit compensation expense is based on achievement of both market and service conditions. The fair value of these awards is determined based on a Monte Carlo simulation valuation model on the grant date. We recognize compensation expense on all of these awards on a straight-line basis over the vesting period with no changes for final projected payout of the awards.

Time-based restricted stock unit compensation expense is based on the achievement of only service conditions. The fair value of these awards is determined based on the market value of the underlying stock price on the grant date. We recognize compensation expense on all of these awards on a straight-line basis over the vesting period.

Deferred stock units, which are granted to non-management directors, are fully vested on the date of grant and the related shares are generally issued on the 13-month anniversary of the grant date unless the director elects to defer the receipt of those shares. The fair value of these awards is determined based on the market value of the underlying stock price on the grant date. The compensation related to these grants is expensed immediately on the date of grant.

**Note 2 – Fair Value Measurements**

The accounting guidance for fair value measurements establishes a three-tier fair value hierarchy, which prioritizes the inputs used in measuring fair value.

- Level 1 – Quoted prices in active markets for identical assets or liabilities.
- Level 2 – Inputs other than Level 1 that are observable, either directly or indirectly, such as quoted prices for similar assets or liabilities; quoted prices in markets that are not active; or other inputs that are observable or can be corroborated by observable market data for substantially the full term of the assets or liabilities.
- Level 3 – Unobservable inputs that are supported by little or no market activity and that are significant to the fair value of the assets or liabilities.

From time to time we enter into various instruments that require fair value measurement, including foreign currency contracts, copper derivative contracts and interest rate swaps. Derivative instruments measured at fair value on a recurring basis, categorized by the level of inputs used in the valuation, include:

| | **Derivative Instruments at Fair Value as of December 31, 2019** | | | |
|---|---|---|---|---|
| ***(Dollars in thousands)*** | **Level 1** | **Level 2** | **Level 3** | **Total[1]** |
| **Foreign currency contracts** | **$ —** | **$ (6)** | **$ —** | **$ (6)** |
| **Copper derivative contracts** | **$ —** | **$ 1,147** | **$ —** | **$ 1,147** |
| **Interest rate swap contract** | **$ —** | **$ (1,254)** | **$ —** | **$ (1,254)** |

| | Derivative Instruments at Fair Value as of December 31, 2018 | | | |
|---|---|---|---|---|
| *(Dollars in thousands)* | Level 1 | Level 2 | Level 3 | Total[1] |
| Foreign currency contracts | $ — | $ 522 | $ — | $ 522 |
| Copper derivative contracts | $ — | $ 583 | $ — | $ 583 |
| Interest rate swap contract | $ — | $ 461 | $ — | $ 461 |

[1] All balances were recorded in the "Other current assets" or "Other accrued liabilities" line items in the consolidated statements of financial position, except the 2019 and 2018 interest rate swap balance, which was recorded in the "Other long-term liabilities" and "Other long-term assets" line items, respectively, in the consolidated statements of financial position.

For additional information on our derivative contracts, refer to "Note 3 – Hedging Transactions and Derivative Financial Instruments."

**Note 3 – Hedging Transactions and Derivative Financial Instruments**

We are exposed to certain risks related to our ongoing business operations. The primary risks being managed through our use of derivative instruments are foreign currency exchange rate risk, commodity pricing risk (primarily related to copper) and interest rate risk. We do not use derivative financial instruments for trading or speculative purposes. The valuation of derivative contracts used to manage each of these risks is described below:

- *Foreign Currency* – The fair value of any foreign currency option derivative is based upon valuation models applied to current market information such as strike price, spot rate, maturity date and volatility, and by reference to market values resulting from an over-the-counter market or obtaining market data for similar instruments with similar characteristics.
- *Commodity* – The fair value of copper derivatives is computed using a combination of intrinsic and time value valuation models, which are collectively a function of five primary variables: price of the underlying instrument, time to expiration, strike price, interest rate and volatility. The intrinsic valuation model reflects the difference between the strike price of the underlying copper derivative instrument and the current prevailing copper prices in an over-the-counter market at period end. The time value valuation model incorporates changes in the price of the underlying copper derivative instrument, the time value of money, the underlying copper derivative instrument's strike price and the remaining time to the underlying copper derivative instrument's expiration date from the period end date.
- *Interest Rates* – The fair value of interest rate swap instruments is derived by comparing the present value of the interest rate forward curve against the present value of the swap rate, relative to the notional amount of the swap. The net value represents the estimated amount we would receive or pay to terminate the agreements. Settlement amounts for an "in the money" swap would be adjusted down to compensate the counterparty for cost of funds, and the adjustment is directly related to the counterparties' credit ratings.

The guidance for the accounting and disclosure of derivatives and hedging transactions requires companies to recognize all of their derivative instruments as either assets or liabilities at fair value in the statements of financial position. The accounting for changes in the fair value (i.e., gains or losses) of a derivative instrument depends on whether it has been designated and qualifies for hedge accounting treatment as defined under the applicable accounting guidance. For derivative instruments that are designated and qualify for hedge accounting treatment as cash flow hedges (i.e., hedging the exposure to variability in expected future cash flows that is attributable to a particular risk), the effective portion of the gain or loss on the derivative instrument is reported as a component of other comprehensive income (loss). This gain or loss is reclassified into earnings in the same line item of the consolidated statements of operations associated with the forecasted transaction and in the same period or periods during which the hedged transaction affects earnings. As of December 31, 2019 and 2018, only our interest rate swap qualified for hedge accounting treatment as a cash flow hedge, and the hedge was highly effective.

***Foreign Currency***

In 2019, we entered into U.S. dollar, Korean won, Japanese yen, euro, Chinese yuan and Chinese renminbi forward contracts. We entered into these foreign currency forward contracts to mitigate certain global transactional exposures. These contracts do not qualify for hedge accounting treatment. As a result, any fair value adjustments required on these contracts are recorded in "Other income (expense), net" in our consolidated statements of operations in the period in which the adjustment occurred.

As of December 31, 2019 the notional values of these foreign currency forward contracts were as follows:

**Notional Values of Foreign Currency Derivatives**

| | | |
|---|---|---|
| KRW/USD | ₩ | 10,413,450,000 |
| USD/CNY | $ | 17,131,000 |
| EUR/USD | € | 13,408,000 |
| JPY/EUR | ¥ | 125,000,000 |

***Commodity***

As of December 31, 2019, we had 30 outstanding contracts to hedge exposure related to the purchase of copper in our PES and ACS operating segments. These contracts are held with financial institutions and are intended to offset rising copper prices and do not qualify for hedge accounting treatment. As a result, any fair value adjustments required on these contracts are recorded in "Other income (expense), net" in our consolidated statements of operations in the period in which the adjustment occurred.

As of December 31, 2019, the volume of our copper contracts outstanding were as follows:

**Volume of Copper Derivatives**

| | |
|---|---|
| January 2020 - March 2020 | 202 metric tons per month |
| April 2020 - June 2020 | 202 metric tons per month |
| July 2020 - September 2020 | 201 metric tons per month |
| October 2020 - December 2020 | 201 metric tons per month |
| January 2021 - March 2021 | 256 metric tons per month |

***Interest Rates***

In March 2017, we entered into an interest rate swap to hedge the variable interest rate on $75.0 million of our $450.0 million revolving credit facility. This transaction has been designated as a cash flow hedge and qualifies for hedge accounting treatment. For additional information regarding our revolving credit facility, refer to "Note 9 – Debt."

***Effects on Financial Statements***

The following table presents the impact from these instruments on the statement of operations and statements of comprehensive income:

| | | Years Ended December 31, | | |
|---|---|---|---|---|
| *(Dollars in thousands)* | **Financial Statement Line Item** | **2019** | 2018 | 2017 |
| ***Foreign Currency Contracts*** | | | | |
| Contracts not designated as hedging instruments | Other income (expense), net | **$ (779)** | $ (333) | $ (7) |
| ***Copper Derivatives Contracts*** | | | | |
| Contracts not designated as hedging instruments | Other income (expense), net | **$ (716)** | $ (2,101) | $ 1,928 |
| ***Interest Rate Swap Contract*** | | | | |
| Contract designated as hedging instrument | Other comprehensive income (loss) | **$ (1,715)** | $ 420 | $ 41 |

**Note 4 – Accumulated Other Comprehensive Loss**

The changes in accumulated other comprehensive loss by component for each of the fiscal years in the two-year period ended December 31, 2019 were as follows:

| *(Dollars and accompanying footnotes in thousands)* | **Foreign Currency Translation Adjustments** | **Pension and Other Postretirement Benefits[1]** | **Derivative Instrument Designated as Cash Flow Hedge[2]** | **Total** |
|---|---|---|---|---|
| Balance as of December 31, 2017 | $ (17,983) | $ (47,198) | $ 26 | $ (65,155) |
| Other comprehensive income (loss) before reclassifications | (12,505) | (1,678) | 519 | (13,664) |
| Amounts reclassified to earnings | — | 176 | (191) | (15) |
| Net other comprehensive income (loss) for period | (12,505) | (1,502) | 328 | (13,679) |
| Balance as of December 31, 2018 | (30,488) | (48,700) | 354 | (78,834) |
| **Other comprehensive income (loss) before reclassifications** | **(4,990)** | **(6,079)** | **(1,171)** | **(12,240)** |
| **Amounts reclassified to earnings** | **—** | **44,324** | **(155)** | **44,169** |
| **Net other comprehensive income (loss) for period** | **(4,990)** | **38,245** | **(1,326)** | **31,929** |
| **Balance as of December 31, 2019** | **$ (35,478)** | **$ (10,455)** | **$ (972)** | **$ (46,905)** |

[1] Net of taxes of $2,368, $9,984 and $9,563 for the years ended December 31, 2019, 2018 and 2017, respectively.
[2] Net of taxes of $282, ($106) and ($15) for the years ended December 31, 2019, 2018 and 2017, respectively.

The impacts to the consolidated statements of operations related to items reclassified to earnings were as follows:

| | | Years Ended December 31, | |
|---|---|---|---|
| *(Dollars in thousands)* | **Financial Statement Line Item** | **2019** | 2018 |
| **Amortization/settlement of pension and other postretirement benefits** | | | |
| | Pension settlement charges | **$ (53,213)** | $ — |
| | Other income (expense), net[1] | **(504)** | (227) |
| | Income tax (expense) benefit | **9,393** | 51 |
| | Net income | **$ (44,324)** | $ (176) |
| **Unrealized gains (losses) on derivative instrument[2]** | | | |
| | Other income (expense), net | **$ 200** | $ 247 |
| | Income tax (expense) benefit | **(45)** | (56) |
| | Net income | **$ 155** | $ 191 |

[1] These accumulated other comprehensive loss components are included in the computation of net periodic pension cost. For additional details, refer to "Note 11 – Pension Benefits, Other Postretirement Benefits and Employee Savings and Investment Plan."

[2] This relates to the derivative instrument designated as a cash flow hedge and held as of the end of the year for each year presented.

**Note 5 – Property, Plant and Equipment**

Our "Property, plant and equipment, net" line item in the consolidated statements of financial position consisted of the following:

| | | | | |
|---|---|---|---|---|
| | | | 112 | $ 236 |
| Payments on operating lease obligations | **$** | **2,967** | $ 3,850 | $ 3,819 |

Our assets and liabilities balances related to finance and operating leases reflected in the consolidated statements of financial position, were as follows:

| | | As of December 31, | |
|---|---|---|---|
| *(Dollars in thousands)* | **Financial Statement Line Item** | **2019** | 2018 |
| Finance lease right-of-use assets | Property, plant and equipment, net | **$ 6,280** | $ 6,750 |
| Operating lease right-of-use assets | Other long-term assets | **$ 4,656** | $ — |
| | | | |
| Finance lease obligations, current portion | Other accrued liabilities | **$ 400** | $ 420 |
| Finance lease obligations, non-current portion | Other long-term liabilities | **$ 4,140** | $ 4,629 |
| **Total finance lease obligations** | | **$ 4,540** | $ 5,049 |
| | | | |
| Operating lease obligations, current portion | Other accrued liabilities | **$ 2,343** | $ — |
| Operating lease obligations, non-current portion | Other long-term liabilities | **$ 2,334** | $ — |
| **Total operating lease obligations** | | **$ 4,677** | $ — |

Income tax expense differs from the amount computed by applying the U.S. federal statutory income tax rate to income before income taxes. The reasons for this difference were as follows:

| *(Dollars in thousands)* | **2019** | 2018 | 2017 |
|---|---|---|---|
| Tax expense at Federal statutory income tax rate | **$ 11,576** | $ 23,224 | $ 46,529 |
| Impact of foreign operations | **107** | 826 | (9,603) |
| Foreign source income, net of tax credits | **(2,248)** | (197) | 1,087 |
| State tax, net of federal | **(690)** | 121 | 279 |
| Unrecognized tax benefits | **543** | (869) | 2,874 |
| U.S. Tax Reform | **—** | 209 | 13,683 |
| Equity compensation excess tax deductions | **(2,902)** | (2,238) | (3,867) |
| General business credits | **(656)** | (2,172) | (1,080) |
| Distribution related foreign taxes | **1,240** | 1,916 | 2,173 |
| Valuation allowance change (excluding U.S. Tax Reform) | **(2,527)** | 602 | 1,393 |
| Disproportionate tax effect of pension settlement charges | **2,510** | — | — |
| Other | **854** | 1,516 | (1,002) |
| Income tax expense (benefit) | **$ 7,807** | $ 22,938 | $ 52,466 |

Our effective income tax rate for 2019 was 14.2% compared to 20.7% for 2018. The 2019 rate decrease was primarily due to the impact of changes in valuation allowance against deferred tax assets associated with carried over research and development credits, excess tax deductions on stock-based compensation, and the international provisions from the U.S. tax reform enacted in 2017. This decrease was partially offset by a disproportionate tax impact from the non-cash settlement charge in connection with the termination of the Merged Plan, increase in taxes associated with the repatriation of foreign earnings, and increase in current accruals of reserves for uncertain tax positions.

We did not make any changes in 2019 to our position on the permanent reinvestment of our historical earnings from foreign operations. With the exception of certain Chinese subsidiaries, we continue to assert that historical foreign earnings are indefinitely reinvested. As of December 31, 2019 and 2018, we had recorded a deferred tax liability of $1.6 million and $1.8 million, respectively, for Chinese withholding tax on undistributed earnings that are not indefinitely reinvested. The other remaining foreign subsidiaries have both the intent and ability to indefinitely reinvest their undistributed earnings and we expect that these undistributed earnings may give rise to an estimated $3.5 million of additional tax liabilities as a result of distribution of such earnings. If circumstances change and it becomes apparent that some, or all of the undistributed earnings as of December 31, 2019 will not be indefinitely reinvested, the provision for the tax consequences, if any, will be recorded in the period when circumstances change. Distributions out of current and future earnings are permissible to fund discretionary activities such as business acquisitions. However, when distributions are made, this could result in a higher effective tax rate.

Unrecognized tax benefits, excluding potential interest and penalties, for the years ended December 31, 2019 and December 31, 2018, were as follows:

| *(Dollars in thousands)* | **2019** | 2018 |
|---|---|---|
| Beginning balance as of January 1 | **$ 9,801** | $ 14,565 |
| Gross increases - current period tax positions | **3,139** | 2,583 |
| Gross increases - tax positions in prior periods | **—** | 505 |
| Gross decreases - tax positions in prior periods | **—** | — |
| Foreign currency exchange | **—** | (142) |
| Lapse of statute of limitations | **(2,723)** | (7,710) |
| Ending balance as of December 31 | **$ 10,217** | $ 9,801 |

Included in the balance of unrecognized tax benefits as of December 31, 2019 were $9.9 million of tax benefits that, if recognized, would impact the effective tax rate. Also included in the balance of unrecognized tax benefit as of December 31, 2019 were $0.3 million of tax benefits that, if recognized, would result in adjustments to other tax accounts, primarily deferred taxes.

We recognize interest accrued related to unrecognized tax benefit as income tax expense. Related to the unrecognized tax benefits noted above, at December 31, 2019 and 2018, we had accrued potential interest and penalties of approximately $0.7 million and $0.5 million, respectively. We have recorded a net income tax expense of $0.2 million during 2019, net income tax expense of $0.1 million during 2018 and $0.9 million net income tax benefit during 2017.

We are subject to taxation in the U.S. and various state and foreign jurisdictions. Our tax years from 2015 through 2019 are subject to examination by the tax authorities. With few exceptions, we are no longer subject to U.S. federal, state, local and foreign examinations by tax authorities for the years before 2015.

**Note 14 – Operating Segment and Geographic Information**

Our reporting structure is comprised of the following strategic operating segments: ACS, EMS and PES. The remaining operations, which represent our non-core businesses, are reported in the Other operating segment. We believe this structure aligns our external reporting presentation with how we currently manage and view our business internally.

***Operating Segment Information***

The following table presents a disaggregation of revenue from contracts with customers and other pertinent financial information, for the periods indicated; inter-segment sales have been eliminated from the net sales data:

| *(Dollars in thousands)* | Advanced Connectivity Solutions | Elastomeric Material Solutions | Power Electronics Solutions | Other | Total |
|---|---|---|---|---|---|
| **2019** | | | | | |
| **Net sales - recognized over time** | **$ —** | **$ 12,687** | **$ 197,702** | **$ 18,112** | **$ 228,501** |
| **Net sales - recognized at a point in time** | **$ 316,592** | **$ 348,916** | **$ 833** | **$ 3,418** | **$ 669,759** |
| **Total net sales** | **$ 316,592** | **$ 361,603** | **$ 198,535** | **$ 21,530** | **$ 898,260** |
| **Operating income** | **$ 48,654** | **$ 57,080** | **$ (1,437)** | **$ 6,184** | **$ 110,481** |
| **Total assets** | **$ 402,398** | **$ 569,484** | **$ 278,763** | **$ 22,536** | **$ 1,273,181** |
| **Capital expenditures** | **$ 22,156** | **$ 8,550** | **$ 20,191** | **$ 700** | **$ 51,597** |
| **Depreciation & amortization** | **$ 18,267** | **$ 19,887** | **$ 10,260** | **$ 748** | **$ 49,162** |
| **Investment in unconsolidated joint ventures** | **$ —** | **$ 16,461** | **$ —** | **$ —** | **16,461** |
| **Equity income in unconsolidated joint ventures** | **$ —** | **$ 5,319** | **$ —** | **$ —** | **$ 5,319** |
| 2018 | | | | | |
| Net sales - recognized over time | $ — | $ 5,788 | $ 221,896 | $ 16,973 | $ 244,657 |
| Net sales - recognized at a point in time | $ 294,154 | $ 335,576 | $ 1,442 | $ 3,262 | $ 634,434 |
| Total net sales | $ 294,154 | $ 341,364 | $ 223,338 | $ 20,235 | $ 879,091 |
| Operating income | $ 33,827 | $ 52,502 | $ 19,648 | $ 6,734 | $ 112,711 |
| Total assets | $ 396,075 | $ 588,841 | $ 273,212 | $ 21,216 | $ 1,279,344 |
| Capital expenditures | $ 61,425 | $ 10,917 | $ 18,051 | $ 156 | $ 90,549 |
| Depreciation & amortization | $ 20,121 | $ 18,501 | $ 10,640 | $ 811 | $ 50,073 |
| Investment in unconsolidated joint ventures | $ — | $ 18,667 | $ — | $ — | $ 18,667 |
| Equity income in unconsolidated joint ventures | $ — | $ 5,501 | $ — | $ — | $ 5,501 |
| 2017 | | | | | |
| Total net sales | $ 301,092 | $ 312,661 | $ 184,954 | $ 22,336 | $ 821,043 |
| Operating income | $ 55,410 | $ 50,908 | $ 15,668 | $ 7,153 | $ 129,139 |
| Total assets | $ 353,786 | $ 489,456 | $ 261,034 | $ 20,858 | $ 1,125,134 |
| Capital expenditures | $ 9,900 | $ 7,563 | $ 9,238 | $ 514 | $ 27,215 |
| Depreciation & amortization | $ 16,351 | $ 16,270 | $ 10,572 | $ 906 | $ 44,099 |
| Investment in unconsolidated joint ventures | $ — | $ 18,324 | $ — | $ — | $ 18,324 |
| Equity income in unconsolidated joint ventures | $ — | $ 4,898 | $ — | $ — | $ 4,898 |

***Operating Segment Net Sales by Geographic Area***

The following table presents net sales by our operating segment operations by geographic area for the years indicated:

| *(Dollars in thousands)* | Net Sales[1] | | | | |
|---|---|---|---|---|---|
| Region/Country | Advanced Connectivity Solutions | Elastomeric Material Solutions | Power Electronics Solutions | Other | Total |
| **December 31, 2019** | | | | | |
| **United States** | **$ 63,753** | **$ 160,918** | **$ 31,874** | **$ 4,507** | **$ 261,052** |
| **Other Americas** | **3,348** | **9,208** | **365** | **913** | **13,834** |
| **Total Americas** | **67,101** | **170,126** | **32,239** | **5,420** | **274,886** |
| **China** | **153,127** | **95,653** | **40,391** | **6,086** | **295,257** |
| **Other APAC** | **60,457** | **55,402** | **23,401** | **2,920** | **142,180** |
| **Total APAC** | **213,584** | **151,055** | **63,792** | **9,006** | **437,437** |
| **Germany** | **15,912** | **13,702** | **57,761** | **573** | **87,948** |
| **Other EMEA** | **19,995** | **26,720** | **44,743** | **6,531** | **97,989** |
| **Total EMEA** | **35,907** | **40,422** | **102,504** | **7,104** | **185,937** |
| **Total net sales** | **$ 316,592** | **$ 361,603** | **$ 198,535** | **$ 21,530** | **$ 898,260** |
| December 31, 2018 | | | | | |
| United States | $ 52,661 | $ 152,284 | $ 37,325 | $ 4,527 | $ 246,797 |
| Other Americas | 3,104 | 14,453 | 931 | 773 | 19,261 |
| Total Americas | 55,765 | 166,737 | 38,256 | 5,300 | 266,058 |
| China | 136,315 | 101,036 | 39,781 | 4,959 | 282,091 |
| Other APAC | 63,318 | 40,788 | 28,414 | 2,892 | 135,412 |
| Total APAC | 199,633 | 141,824 | 68,195 | 7,851 | 417,503 |
| Germany | 18,165 | 9,907 | 62,359 | 584 | 91,015 |
| Other EMEA | 20,591 | 22,896 | 54,528 | 6,500 | 104,515 |
| Total EMEA | 38,756 | 32,803 | 116,887 | 7,084 | 195,530 |
| Total net sales | $ 294,154 | $ 341,364 | $ 223,338 | $ 20,235 | $ 879,091 |
| December 31, 2017 | | | | | |
| United States | $ 48,277 | $ 141,508 | $ 30,403 | $ 5,210 | $ 225,398 |
| Other Americas | 2,946 | 9,709 | 1,153 | 699 | 14,507 |
| Total Americas | 51,223 | 151,217 | 31,556 | 5,909 | 239,905 |
| China | 143,065 | 93,039 | 32,164 | 5,123 | 273,391 |
| Other APAC | 64,077 | 36,233 | 21,845 | 3,421 | 125,576 |
| Total APAC | 207,142 | 129,272 | 54,009 | 8,544 | 398,967 |
| Germany | 23,925 | 9,211 | 54,813 | 657 | 88,606 |
| Other EMEA | 18,802 | 22,961 | 44,576 | 7,226 | 93,565 |
| Total EMEA | 42,727 | 32,172 | 99,389 | 7,883 | 182,171 |
| Total net sales | $ 301,092 | $ 312,661 | $ 184,954 | $ 22,336 | $ 821,043 |

[1] Net sales are allocated to countries based on the location of the customer. The table above lists individual countries with 10% or more of net sales for the periods indicated.

***Revenue from Contracts with Customers***

In May 2014, the FASB issued ASU 2014-09, *Revenue from Contracts with Customers*, to achieve a consistent application of revenue recognition, resulting in a single revenue model to be applied by reporting companies under U.S. generally accepted accounting principles. Under the new model, recognition of revenue occurs when a customer obtains control of promised goods or services in an amount that reflects the consideration to which the providing entity expects to be entitled in exchange for those goods or services. In addition, the new standard requires that reporting companies disclose the nature, amount, timing, and uncertainty of revenue and cash flows arising from contracts with customers. On January 1, 2018, we adopted ASU 2014-09 retrospectively with the cumulative effect of applying the standard recognized at the date of implementation and without restatement of comparative periods. This application of the new standard resulted in an increase to the January 1, 2018 balance of retained earnings of approximately $4.2 million, net of tax.

The Company manufactures some products to customer specifications which are customized to such a degree that it is unlikely that another entity would purchase these products or that we could modify these products for another customer. These products are deemed to have no alternative use to the Company whereby we have an enforceable right to payment evidenced by contractual termination clauses. In accordance with ASC 606, for those circumstances we recognize revenue on an over-time basis. Revenue recognition does not occur until the product meets the definition of "no alternative use" and therefore, items that have not yet reached that point in the production process are not included in the population of items with over-time revenue recognition.

As appropriate, we record estimated reductions to revenue for customer returns, allowances, and warranty claims. Provisions for such reductions are made at the time of sale and are typically derived from historical trends and other relevant information.

We had contract assets primarily related to unbilled revenue for revenue recognized related to products that are deemed to have no alternative use whereby we have the right to payment. Revenue is recognized in advance of billing to the customer in these circumstances as billing is typically performed at the time of shipment to the customer. The unbilled revenue is included in the contract assets on the consolidated statements of financial position.

Our contract assets by operating segment were as follows:

| | As of December 31, | |
|---|---|---|
| *(Dollars in thousands)* | **2019** | 2018 |
| Advanced Connectivity Solutions | **$ —** | $ — |
| Elastomeric Material Solutions | **1,077** | 943 |
| Power Electronics Solutions | **19,471** | 19,738 |
| Other | **1,907** | 2,047 |
| Total contract assets | **$ 22,455** | $ 22,728 |

We did not have any contract liabilities as of December 31, 2019 or 2018. No impairment losses were recognized for the years ended December 31, 2019 and 2018 on any receivables or contract assets arising from our contracts with customers.

***Long-Lived Assets by Geographic Area***

Our long-lived assets[(1)] by geographic area were as follows:

| | As of December 31, | |
|---|---|---|
| *(Dollars in thousands)* | **2019** | 2018 |
| United States | **$ 469,234** | $ 476,560 |
| China | **55,078** | 58,205 |
| Germany | **120,869** | 113,412 |
| Other | **36,942** | 36,475 |
| Total long-lived assets | **$ 682,123** | $ 684,652 |

[(1)] Long-lived assets are based on the location of the asset and are comprised of goodwill, other intangible assets and property, plant and equipment. Countries with 10% of more of long-lived assets have been disclosed.

**Note 15 – Supplemental Financial Information**

***Restructuring and Impairment Charges***

The components of "Restructuring and impairment charges" were as follows:

| | Years Ended December 31, | | |
|---|---|---|---|
| *(Dollars in thousands)* | **2019** | 2018 | 2017 |
| Restructuring charges | | | |
| Global headquarters relocation | **$ —** | $ 550 | $ 2,760 |
| Facility consolidation | **948** | 1,982 | — |
| Total restructuring charges | **948** | 2,532 | 2,760 |
| Impairment charges | | | |
| Fixed assets impairment charges | **1,537** | 1,506 | — |
| Other impairment charges | **—** | — | 807 |
| Total impairment charges | **1,537** | 1,506 | 807 |
| Total restructuring and impairment charges | **$ 2,485** | $ 4,038 | $ 3,567 |

*Relocation Charges - Facility Consolidation*

In 2018, we made the decision to consolidate our Santa Fe Springs, California operations into our facilities in Carol Stream, Illinois and Bear, Delaware. We recorded $0.9 million and $2.0 million of expense in 2019 and 2018, respectively, related to the facility consolidation.

*Relocation Charges - Global Headquarters Relocation*

In 2017, we relocated our global headquarters from Rogers, Connecticut to Chandler, Arizona. We recorded $0.6 million and $2.8 million of expense in 2018 and 2017, respectively, related to the headquarters relocation.

*Impairment Charges*

We recognized $1.5 million of impairment charges in both 2019 and 2018 pertaining to our ACS operating segment, primarily relating to certain assets in connection with the Isola asset acquisition. In 2017, we recognized a $0.3 million charge related to the impairment of our remaining investment in BrightVolt, Inc. As this investment did not relate to a specific operating segment, we allocated it ratably among ACS, EMS and PES. Also in 2017, we recognized a $0.5 million impairment charge related to the remaining net book value of an other intangible asset within the ROLINX® product line in our PES operating segment.

*Allocation of Restructuring and Impairment Charges to Operating Segments*

The following table summarizes the allocation of restructuring and impairment charges to our operating segments:

| | Years Ended December 31, | | |
|---|---|---|---|
| *(Dollars in thousands)* | **2019** | 2018 | 2017 |
| *Advanced Connectivity Solutions* | | | |
| Allocated restructuring charges | **$ —** | $ 244 | $ 1,305 |
| Allocated impairment charges | **1,537** | 1,506 | 161 |
| *Elastomeric Material Solutions* | | | |
| Allocated restructuring charges | **948** | 2,152 | 834 |
| Allocated impairment charges | **—** | — | 103 |
| *Power Electronics Solutions* | | | |
| Allocated restructuring charges | **—** | 136 | 621 |
| Allocated impairment charges | **—** | — | 543 |
| Total restructuring and impairment charges | **$ 2,485** | $ 4,038 | $ 3,567 |

***Other Operating (Income) Expense, Net***

The components of "Other operating (income) expense, net" were as follows:

| | Years Ended December 31, | | |
|---|---|---|---|
| *(Dollars in thousands)* | **2019** | 2018 | 2017 |
| Lease income | **$ (989)** | $ (948) | $ — |
| Depreciation on leased assets | **1,907** | 3,512 | — |
| Loss (gain) on sale or disposal of property, plant and equipment | **756** | (164) | (5,329) |
| Gain from antitrust litigation settlement | **—** | (4,231) | — |
| Indemnity claim settlements from acquisitions | **(715)** | (700) | — |
| Economic incentive grants | **—** | (556) | — |
| Total other operating (income) expense, net | **$ 959** | **$ (3,087)** | **$ (5,329)** |

In connection with the transitional leaseback of a portion of the facility and certain machinery and equipment acquired from Isola in August 2018, we recognized lease income and related depreciation on leased assets of $1.0 million and $1.9 million, respectively, in 2019, and $0.9 million and $3.5 million, respectively, in 2018.

In 2019, we recorded a gain of $0.7 million for the settlement of indemnity claims related to the Isola asset acquisition.

In 2018, we recorded a gain from the settlement of antitrust litigation in the amount of $4.2 million as a result of the settlement of a class action lawsuit, filed in 2005, which alleged that Dow Chemical Company and other urethane raw material suppliers unlawfully agreed to fix, raise, maintain or stabilize the prices of polyether polyol products sold in the U.S. from January 1, 1999 through December 31, 2004 in violation of the federal antitrust laws. We also recorded a gain of $0.7 million for the settlement

of indemnity claims related to the DSP acquisition and income of $0.6 million from economic incentive grants related to the relocation of our global headquarters from Rogers, Connecticut to Chandler, Arizona.

In 2017, we recognized other operating income of $5.3 million as a result of the sales of a facility and a parcel of land located in Belgium.

***Interest Expense, Net***

The components of "Interest expense, net" were as follows:

| | Years Ended December 31, | | |
|---|---|---|---|
| *(Dollars in thousands)* | **2019** | 2018 | 2017 |
| Interest on revolving credit facility | **$ 7,378** | $ 6,304 | $ 5,115 |
| Interest rate swap settlements | **(200)** | (247) | 51 |
| Line of credit fees | **576** | 573 | 555 |
| Debt issuance amortization costs | **552** | 552 | 549 |
| Interest on finance leases | **127** | 172 | 169 |
| Interest income | **(1,610)** | (804) | (379) |
| Other | **46** | 79 | 71 |
| Total interest expense, net | **$ 6,869** | $ 6,629 | $ 6,131 |

**Note 16 – Recent Accounting Standards**

***Recently Issued Standards***

In June 2016, the Financial Accounting Standards Board (FASB) issued Accounting Standards Update (ASU) 2016-13, *Financial Instruments-Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments*. This ASU replaces the incurred loss model with a new expected loss impairment model that applies to most assets measured at amortized cost and certain other financial instruments, including trade receivables and other receivables. This ASU is effective for our fiscal year ending December 31, 2020 and for the interim periods within that year. Early adoption of this update is permitted and it is required to be applied with a modified-retrospective approach through a cumulative-effect adjustment to retained earnings as of the beginning of the first reporting period in which the new guidance is effective. We expect this new guidance to have an immaterial impact on its consolidated financial statements, however, we are still finalizing our analysis.

***Recently Adopted Standards Reflected in Our 2019 Financial Statements***

In August 2018, the FASB issued ASU 2018-14, *Compensation - Retirement Benefits - Defined Benefit Plans - General (Subtopic 715-20): Disclosure Framework - Changes to the Disclosure Requirements for Defined Benefit Plans*, which modifies the disclosure requirements for employers that sponsor defined benefit plans or other postretirement plans. This ASU is effective for our fiscal year ending December 31, 2020, with early adoption permitted. ASU 2018-14 is required to be applied on a retrospective basis to all periods presented. We early adopted this guidance in October 2019. It did not have a material impact on our consolidated financial statements but it resulted in revised disclosures related to our defined benefit plans.

In August 2018, the FASB issued ASU 2018-13, *Fair Value Measurement (Topic 820): Disclosure Framework—Changes to the Disclosure Requirements for Fair Value Measurement*. This ASU modifies the disclosure requirements for fair value measurements by removing the requirement to disclose the amount and reasons for transfers between Level 1 and Level 2 of the fair value hierarchy and the policy for timing of such transfers. This ASU expands the disclosure requirements for Level 3 fair value measurements, primarily focused on changes in unrealized gains and losses included in other comprehensive income (loss). This ASU is effective for our fiscal year ending December 31, 2020 and for the interim periods within that year. Early adoption is permitted. ASU 2018-13 is generally required to be applied retrospectively to all periods presented upon their effective date with the exception of certain amendments that should be applied prospectively to the most recent interim or annual period presented in the year of adoption. We early adopted this guidance in October 2019. It did not have a material impact on our consolidated financial statements or impact our fair value measurement disclosures.

In October 2018, the FASB issued ASU 2018-16, *Derivatives and Hedging (Topic 815): Inclusion of the Secured Overnight Financing Rate (SOFR) Overnight Index Swap (OIS) Rate as a Benchmark Interest Rate for Hedge Accounting Purposes*, which permits the use of the OIS rate based on the SOFR as a U.S. benchmark interest rate for hedge accounting purposes. The amendments in this update were effective for the Company on January 1, 2019 and we will apply them to qualifying new or redesignated hedging relationships.

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 aligns the requirements for capitalizing costs incurred in the implementation of a hosting arrangement that is a service contract

with the requirements for capitalizing costs incurred to develop or obtain internal use software. We adopted this ASU on January 1, 2019 on a prospective basis and it did not have a material impact on our consolidated financial statements.

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*. This ASU allows for reclassification of stranded tax effects resulting from U.S. Tax Reform from accumulated other comprehensive loss to retained earnings but it does not require this reclassification. We adopted this ASU on January 1, 2019 and elected to not reclassify the stranded tax effects resulting from U.S. Tax Reform. As a result of that election, the adoption of ASU 2018-02 did not have an impact on our consolidated financial statements and disclosures.

In February 2016, the FASB issued ASU 2016-02, *Leases*, which sets out the principles for the recognition, measurement, presentation and disclosure of leases for both parties to a contract (i.e., lessees and lessors). The standard requires lessees to classify leases as either finance or operating leases and record a right-of-use asset and a lease liability for all leases with a term of greater than 12 months regardless of their classification. An accounting policy election may be made to account for leases with a term of 12 months or less similar to existing guidance for operating leases today. ASU 2016-02 supersedes the existing guidance on accounting for leases. In July 2018, the FASB issued ASU 2018-11, *Leases (Topic 842): Targeted Improvements*, which allowed for an optional transition method for the adoption of Topic 842. The two permitted transition methods were the modified retrospective approach, which applies the lease requirements at the beginning of the earliest period presented, and the optional transition method, which applies the lease requirements through a cumulative-effect adjustment to the opening balance of retained earnings in the period of adoption. We adopted this standard on January 1, 2019 using the optional transition method. We elected to use the practical expedients that allow us to carry forward the historical lease classification. For additional information regarding the impact of the adoption of this standard, refer to "Note 10 – Leases."

**Note 17 – Quarterly Results of Operations (Unaudited)**

| | 2019 | | | |
|---|---|---|---|---|
| ***(Dollars in thousands, except per share amounts)*** | **First Quarter** | **Second Quarter** | **Third Quarter** | **Fourth Quarter** |
| **Net sales** | **$ 239,798** | **$ 242,852** | **$ 221,842** | **$ 193,768** |
| **Gross margin** | **$ 85,394** | **$ 85,828** | **$ 78,867** | **$ 64,203** |
| **Net income (loss)** | **$ 28,399** | **$ 24,293** | **$ 23,387** | **$ (28,760)** |
| **Net income (loss) per share:** | | | | |
| **Basic** | **$ 1.53** | **$ 1.31** | **$ 1.26** | **$ (1.55)** |
| **Diluted** | **$ 1.52** | **$ 1.30** | **$ 1.25** | **$ (1.55)** |

| | 2018 | | | |
|---|---|---|---|---|
| *(Dollars in thousands, except per share amounts)* | First Quarter | Second Quarter | Third Quarter | Fourth Quarter |
| Net sales | $ 214,611 | $ 214,675 | $ 226,863 | $ 222,942 |
| Gross margin | $ 76,606 | $ 76,672 | $ 79,130 | $ 78,375 |
| Net income | $ 26,136 | $ 17,329 | $ 19,734 | $ 24,452 |
| Net income per share: | | | | |
| Basic | $ 1.43 | $ 0.94 | $ 1.07 | $ 1.33 |
| Diluted | $ 1.40 | $ 0.93 | $ 1.06 | $ 1.31 |

**Note 18 – Share Repurchases**

In 2015, we initiated a share repurchase program (the Program) of up to $100.0 million of the Company's capital stock. We initiated the Program to mitigate potentially dilutive effects of stock options and shares of restricted stock granted by the Company, in addition to enhancing shareholder value. The share repurchase program has no expiration date and may be suspended or discontinued at any time without notice. As of December 31, 2019, $49.0 million remained of our $100.0 million share repurchase program. There were no share repurchases in 2019.

We repurchased the following shares of capital stock through the Program, using cash from operations and cash on hand, during the years presented below:

| | Years Ended December 31, | | |
|---|---|---|---|
| *(Dollars in thousands)* | **2019** | 2018 | 2017 |
| Shares of capital stock repurchased | **—** | 23,138 | — |
| Value of capital stock repurchased | **$ —** | $ 2,999 | $ — |

**SCHEDULE II**

| *(Dollars in thousands)* | Balance at Beginning of Period | Charged to (Reduction of) Costs and Expenses | Taken Against Allowance | Other (Deductions) Recoveries | Balance at End of Period |
|---|---|---|---|---|---|
| *Allowance for Doubtful Accounts* | | | | | |
| **December 31, 2019** | **$ 1,354** | **$ 437** | **$ (100)** | **$ —** | **$ 1,691** |
| December 31, 2018 | $ 1,525 | $ 189 | $ (360) | $ — | $ 1,354 |
| December 31, 2017 | $ 1,952 | $ (275) | $ (152) | $ — | $ 1,525 |

| *(Dollars in thousands)* | Balance at Beginning of Period | Charged to (Reduction of) Costs and Expenses | Taken Against Allowance | Other (Deductions) Recoveries | Balance at End of Period |
|---|---|---|---|---|---|
| *Valuation on Allowance for Deferred Tax Assets* | | | | | |
| **December 31, 2019** | **$ 16,889** | **$ 656** | **$ (2,920)** | **$ —** | **$ 14,625** |
| December 31, 2018 | $ 8,754 | $ 8,135 | $ — | $ — | $ 16,889 |
| December 31, 2017 | $ 6,388 | $ 2,366 | $ — | $ — | $ 8,754 |

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

None.

**Item 9A. Controls and Procedures**

***EVALUATION OF DISCLOSURE CONTROLS AND PROCEDURES***

The Company, with the participation of our Chief Executive Officer and Chief Financial Officer, conducted an evaluation of the design and operation of our disclosure controls and procedures, as defined in Rules 13a-15(e) and 15d- 15(e) under the Securities Exchange Act of 1934, as amended (the "Exchange Act"), as of December 31, 2019. The Company's disclosure controls and procedures are designed (i) to ensure that information required to be disclosed by it in the reports that it files or submits under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms and (ii) to ensure that information required to be disclosed in the reports the Company files or submits under the Exchange Act is accumulated and communicated to its management, including its Chief Executive Officer and Chief Financial Officer, as appropriate to allow timely decisions regarding required disclosure. Based on their evaluation, our Chief Executive Officer and Chief Financial Officer have concluded that the Company's disclosure controls and procedures were effective as of December 31, 2019.

***CHANGES IN INTERNAL CONTROL OVER FINANCIAL REPORTING***

There were no changes in the Company's internal control over financial reporting during the fourth quarter of the fiscal year ended December 31, 2019 that have materially affected or are reasonably likely to materially affect its internal control over financial reporting, as defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act.

***MANAGEMENT'S REPORT ON INTERNAL CONTROL OVER FINANCIAL REPORTING***

The management of the Company is responsible for establishing and maintaining adequate internal control over financial reporting as defined in Exchange Act Rules 13a-15(f) and 15d-15(f). The Company's internal control over financial reporting was designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of the Company's financial statements for external purposes in accordance with accounting principles generally accepted in the United States. Our internal control over financial reporting includes those policies and procedures that:

- pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of our assets;
- provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with accounting principles generally accepted in the United States, and that receipts and expenditures are being made only in accordance with authorizations of our management and directors; and
- provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of our 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.

Management assessed the effectiveness of the Company's internal control over financial reporting as of December 31, 2019. In making its assessment of internal control over financial reporting, management used the criteria issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO) in *Internal Control-Integrated Framework* (2013). Based on the results of this assessment, management, including our Chief Executive Officer and our Chief Financial Officer, has concluded that, as of December 31, 2019, our internal control over financial reporting was effective.

The Company's independent registered public accounting firm, PricewaterhouseCoopers, LLP, has audited the effectiveness of the Company's internal control over financial reporting as of December 31, 2019.

**Item 9B. Other Information**

None.

## Part III

### Item 10. Directors, Executive Officers and Corporate Governance

We are incorporating by reference the information with respect to the Directors, Executive Officers and Corporate Governance set forth under the captions "Nominees for Director, Director Qualifications and Experience", "Delinquent Section 16(a) Reports" and "Board of Directors - Meetings of the Board and Committees" in our Definitive Proxy Statement for our 2020 Annual Meeting of Shareholders, which we intend to file within 120 days after the end of our fiscal year pursuant to Section 14(a) of the Exchange Act. Information with respect to our executive officers is presented in Part I, Item 1 of this report and is hereby incorporated into this Item 10 by reference.

*Code of Ethics*

We have adopted a code of business conduct and ethics policy, which applies to all employees, officers and directors of Rogers Corporation. The Rogers Corporation Code of Business Conduct and Ethics Policy is posted on our website at http://www.rogerscorp.com. We intend to satisfy the disclosure requirements regarding any amendment to, or waiver of, a provision of the Code of Business Conduct and Ethics Policy for our principal executive officer, principal financial officer or principal accounting officer (or others performing similar functions) by posting such information on our website. Our website is not incorporated into or a part of this Form 10-K.

### Item 11. Executive Compensation

We are incorporating by reference the information with respect to Executive Compensation set forth under the captions "Board of Directors - Directors' Compensation", "Board of Directors - Meetings of the Board and Committees", "Compensation Discussion and Analysis", "Compensation and Organization Committee Report" and "2019 Compensation" in our Definitive Proxy Statement for our 2020 Annual Meeting of Shareholders, which we intend to file within 120 days after the end of our fiscal year pursuant to Section 14(a) of the Exchange Act.

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

The table and footnotes below describe those equity compensation plans approved and not approved by security holders of Rogers Corporation as of December 31, 2019.

| | *(a)* | *(b)* |
|---|---|---|
| **Plan Category** | **Number of securities to be issued upon exercise of outstanding options, warrants and rights** | **Number of securities remaining available for future issuance under each equity compensation plan excluding securities referenced in column *(a)*** |
| **Equity Compensation Plans Approved by Security Holders** | | |
| Rogers Corporation 2009 Long-Term Equity Compensation Plan | 303,517[(1)] | —[(2)] |
| Rogers Corporation 2019 Long-Term Equity Compensation Plan | 19,204[(3)] | 1,063,920 |
| Rogers Corporation Global Stock Ownership Plan For Employees[(4)] | — | 91,670 |
| **Equity Compensation Plans Not Approved by Security Holders** | | |
| Rogers Corporation Stock Acquisition Program[(5)] | 531 | — |
| Total | 323,252 | 1,155,590 |

[(1)] Consists of 302,317 shares for restricted stock units and 1,200 shares for deferred stock units.
[(2)] This plan expired in early February 2019.
[(3)] Consists of 13,254 shares for restricted stock units and 5,950 shares for deferred stock units.
[(4)] This is an employee stock purchase plan within the meaning of Section 432(b) of the Internal Revenue Code of 1986, as amended.
[(5)] The purpose of the Stock Acquisition Program was to enable non-management directors to acquire shares of Rogers' capital stock in lieu of cash compensation, on either a current or deferred basis at the then current fair market value of such capital stock. For the periods covered by this report, the Company no longer offered capital stock to its directors under the Stock Acquisition Program.

We are incorporating by reference the information with respect to Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters set forth under the captions "Stock Ownership of Management and Directors" and "Beneficial Ownership of More Than Five Percent of Rogers' Stock" in our Definitive Proxy Statement for our 2020 Annual Meeting of Shareholders, which we intend to file within 120 days after the end of our fiscal year pursuant to Section 14(a) of the Exchange Act.

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

We are incorporating by reference the information with respect to Certain Relationships and Related Transactions and Director Independence as set forth under the captions "Related Party Transactions" and "Board of Directors-Director Independence" in our Definitive Proxy Statement for our 2020 Annual Meeting of Shareholders, which we intend to file within 120 days after the end of our fiscal year pursuant to Section 14(a) of the Exchange Act.

**Item 14. Principal Accountant Fees and Services**

We are incorporating by reference the information with respect to accountant fees and services set forth under the caption "Fees of Independent Auditor" in our Definitive Proxy Statement for our 2020 Annual Meeting of Shareholders, which we intend to file within 120 days after the end of our fiscal year pursuant to Section 14(a) of the Exchange Act.

**Part IV**

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

(1) Financial Statements and Schedules.

The following consolidated financial statements of the Company are included in Item 8 of this Form 10-K:

Report of Independent Registered Public Accounting Firm

Consolidated Statements of Operations

Consolidated Statements of Comprehensive Income

Consolidated Statements of Financial Position

Consolidated Statements of Shareholders' Equity

Consolidated Statements of Cash Flows

Notes to Consolidated Financial Statements

(2) Financial Statement Schedules.

Schedule II - Valuation and Qualifying Accounts

Other than as set forth above, schedules are omitted because they are not applicable, or are not required, or because the information is included in the consolidated financial statements and notes thereto.

(3) Exhibits.

The following list of exhibits includes exhibits submitted with this Form 10-K as filed with the SEC and those incorporated by reference to other filings.

| | |
|---|---|
| 3.1 | Restated Articles of Organization of Rogers Corporation, as amended, incorporated by reference to Exhibit 3a to the Registrant's Annual Report on Form 10-K for the fiscal year ended December 31, 2006 (the 2006 Form 10-K) |
| 3.2 | Amended and Restated Bylaws of Rogers Corporation, effective February 11, 2016, incorporated by reference to Exhibit 3.1 to the Registrant's Current Report on Form 8-K filed on February 26, 2016. |
| 4.1 | Description of Capital Stock, filed herewith. |
| 10.1 | The Amended and Restated Rogers Corporation Voluntary Deferred Compensation Plan for Non-Management Directors, incorporated by reference to Exhibit 10i to the Registrant's Quarterly Report on Form 10-Q filed November 8, 2007.** |
| 10.1.1 | First Amendment to the Amended and Restated Rogers Corporation Voluntary Deferred Compensation Plan for Non-Management Directors, incorporated by reference to Exhibit 10.5 to the Registrant's Quarterly Report on Form 10-Q filed November 3, 2009.** |
| 10.1.2 | Second Amendment to the Amended and Restated Rogers Corporation Voluntary Deferred Compensation Plan for Non-Management Directors, incorporated by reference to Exhibit 10.5 to the Registrant's Annual Report on Form 10-K for the fiscal year ended December 31, 2010 (the 2010 Form 10-K).** |
| 10.2 | The Amended and Restated Rogers Corporation Voluntary Deferred Compensation Plan for Key Employees, incorporated by reference to Exhibit 10j to the Registrant's Quarterly Report on Form 10-Q filed November 8, 2007.** |
| 10.2.1 | First Amendment to the Amended and Restated Rogers Corporation Voluntary Deferred Compensation Plan for Key Employees, incorporated by reference to Exhibit 10j to the Registrant's Quarterly Report on Form 10-Q filed August 7, 2008.** |

| | |
|---|---|
| 10.2.2 | Second Amendment to the Amended and Restated Rogers Corporation Voluntary Deferred Compensation Plan for Key Employees, incorporated by reference to Exhibit 10.6 to the Registrant's Quarterly Report on Form 10-Q filed November 3, 2009.** |
| 10.2.3 | Third Amendment to the Amended and Restated Rogers Corporation Voluntary Deferred Compensation Plan for Key Employees, incorporated by reference to Exhibit 10.4 to the Registrant's Current Report on Form 8-K filed February 17, 2010.** |
| 10.2.4 | Fourth Amendment to the Amended and Restated Rogers Corporation Voluntary Deferred Compensation Plan for Key Employees, incorporated by reference to Exhibit 10.6 to the 2010 Form 10-K .** |
| 10.3 | Rogers Corporation Amended and Restated Pension Restoration Plan, incorporated by reference to Exhibit 10.1 to the Registrant's Current Report on Form 8-K filed December 17, 2008.** |
| 10.3.1 | First Amendment to Rogers Corporation Amended and Restated Pension Restoration Plan, incorporated by reference to Exhibit 10.4 to the Registrant's Quarterly Report on Form 10-Q filed November 3, 2009.** |
| 10.3.2 | Second Amendment to Rogers Corporation Amended and Restated Pension Restoration Plan, incorporated by reference to Exhibit 10.10 to the 2010 Form 10-K.** |
| 10.4 | Form of Indemnification Agreement between the Rogers Corporation and each of its executive officers, incorporated by reference to Exhibit 99.2 to the Registrant's Current Report on Form 8-K on December 14, 2004.** |
| 10.5 | Form of Indemnification Agreement between the Rogers Corporation and each of its directors, incorporated by reference to Exhibit 99.1 to the Registrant's Current Report on Form 8-K on December 14, 2004.** |
| 10.6 | Rogers Corporation 2009 Long-Term Equity Compensation Plan, as amended, incorporated by reference to Exhibit B to the Registrant's Definitive Proxy Statement filed on March 24, 2014.** |
| 10.7 | Form of Performance-Based Restricted Stock Award Agreement under the 2009 Plan, incorporated by reference to Exhibit 10.14 to the Registrant's 2015 Form 10-K.** |
| 10.8 | Form of Time-Based Restricted Stock Unit Award Agreement under the 2009 Plan, incorporated by reference to Exhibit 10.16 to the Registrant's 2015 Form 10-K.** |
| 10.9 | Rogers Corporation 2019 Long-Term Equity Compensation Plan, incorporated by reference to Exhibit 4.1 to the Registrant's Registration Statement on Form S-8 filed on May 14, 2019.** |
| 10.10 | Form of Performance-Based Restricted Stock Unit Award Agreement under the 2019 Plan, filed herewith.** |
| 10.11 | Form of Time-Based Restricted Stock Unit Award Agreement under the 2019 Plan, filed herewith.** |
| 10.12 | Letter Agreement between the Registrant and Bruce D. Hoechner, dated September 15, 2011 and accepted on September 20, 2011, incorporated by reference to Exhibit 10.1 to the Registrant's Current Report on Form 8-K filed September 26, 2011.** |
| 10.13 | Letter Agreement between the Company and Michael M. Ludwig, dated August 28, 2018, incorporated by reference to Exhibit 10.1 to the Registrant's Quarterly Report on Form 10-Q filed November 2, 2018. |
| 10.14 | Amended and Restated Employment Agreement between the Company and Helen Zhang, dated October 7, 2019, incorporated by reference to Exhibit 10.1 to the Registrant's Quarterly Report on Form 10-Q filed on October 31, 2019.** |
| 10.15 | Rogers Corporation Deferred Compensation Plan, incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed June 26, 2014.** |
| 10.16 | Rogers Corporation Severance Plan, incorporated by reference to Exhibit 10.1 to the Registrant's Current Report on Form 8-K filed on February 13, 2019.** |
| 10.17 | Form of Participation Agreement for the Company's U.S.-based named executive officers under the Rogers Corporation Severance Plan, incorporated by reference to Exhibit 10.2 to the Registrant's Current Report on Form 8-K filed on February 13, 2019.** |
| 10.18 | Third Amended and Restated Credit Agreement, dated as of February 17, 2017 among Rogers Corporation, the lenders party thereto, JPMorgan Chase Bank, N.A., as administrative agent, HSBC Bank USA, National Association and Citizens Bank, N.A. as co-syndication agents, and Citibank, N.A. as documentation agent, incorporated by reference to Exhibit 10.24 to the Registrant's Form 10-K for the fiscal year ended December 31, 2016. |
| 10.19 | Form of Director Deferred Stock Unit Award Agreement under the 2009 Plan, filed herewith. |
| 10.20 | Form of Director Deferred Stock Unit Award Agreement under the 2019 Plan, filed herewith. |

| | |
|---|---|
| 10.21 | Letter Agreement between the Company and Peter Williams, dated June 11, 2019 and accepted on June 12, 2019, attached herewith. |
| 21 | Subsidiaries of the Registrant, filed herewith. |
| 23.1 | Consent of PricewaterhouseCoopers, LLP, Independent Registered Public Accounting Firm, filed herewith. |
| 31.1 | Certification of President and Chief Executive Officer (Principal Executive Officer) Pursuant to Rule 13a-14(a) of the Securities Exchange Act of 1934, as Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002, filed herewith. |
| 31.2 | Certification of Senior Vice President, Chief Financial Officer and Treasurer (Principal Financial Officer) Pursuant to Rule 13a-14(a) of the Securities Exchange Act of 1934, as Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002, filed herewith. |
| 32 | Certification of President and Chief Executive Officer (Principal Executive Officer) and Senior Vice President, Chief Financial Officer and Treasurer (Principal Financial Officer) Pursuant to Rule 13a-14(b) of the Securities Exchange Act of 1934 and 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, filed herewith. |
| 101 | The following materials from Rogers Corporation's Annual Report on Form 10-K for the fiscal year ended December 31, 2019, formatted in iXBRL (Inline eXtensible Business Reporting Language): (i) Consolidated Statements of Operations for the fiscal years ended December 31, 2019, 2018 and 2017; (ii) Consolidated Statements of Comprehensive Income for the fiscal years ended December 31, 2019, 2018 and 2017; (iii) Consolidated Statements of Financial Position for the fiscal years ended December 31, 2019 and 2018; (iv) Consolidated Statements of Shareholders' Equity for the fiscal years ended December 31, 2019, 2018 and 2017; (v) Consolidated Statements of Cash Flows for the fiscal years ended December 31, 2019, 2018 and 2017; (vi) Notes to Consolidated Financial Statements and (vii) Cover Page. |
| 104 | The cover page from Rogers Corporation's Annual Report on Form 10-K for the fiscal year ended December 31, 2019, formatted in iXBRL and contained in Exhibit 101. |

** Management contract or compensatory plan or arrangement.

**Item 16. Form 10-K Summary**

Not Applicable.

**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.

ROGERS CORPORATION
(Registrant)

/s/ Bruce D. Hoechner

Bruce D. Hoechner

*President and Chief Executive Officer*
*Principal Executive Officer*

Dated: February 20, 2020

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below on February 20, 2020, by the following persons on behalf of the Registrant and in the capacities indicated.

/s/ Bruce D. Hoechner

Bruce D. Hoechner
*President and Chief Executive Officer*
*Director*
*Principal Executive Officer*

/s/ Keith L. Barnes

Keith L. Barnes
*Director*

/s/ Michael M. Ludwig

Michael M. Ludwig
*Senior Vice President, Chief Financial Officer and Treasurer*
*Principal Financial Officer*

/s/ Carol R. Jensen

Carol R. Jensen
*Director*

/s/ Mark D. Weaver

Mark D. Weaver
*Chief Accounting Officer and Corporate Controller*
*Principal Accounting Officer*

/s/ Jeffrey J. Owens

Jeffrey J. Owens
*Director*

/s/ Michael F. Barry

Michael F. Barry
*Director*

/s/ Ganesh Moorthy

Ganesh Moorthy
*Director*

/s/ Helene Simonet

Helene Simonet
*Director*

/s/ Peter C. Wallace

Peter C. Wallace
*Director*