

2019
Annual Report

TO OUR SHAREHOLDERS:

In 2019, Hexcel delivered another **strong year with record sales and earnings**. Full-year sales were up 8 percent year-over-year, and adjusted diluted EPS increased more than 16 percent. In addition, 2019 was another record year for free cash flow generation, reaching \$287 million. Our Space and Defense business grew with the acquisition of ARC Technologies, and we continued to benefit from increasing composites content in every market. Although the 737 MAX grounding was an unfortunate headwind for much of the year, our Hexcel team did a terrific job mitigating some of its effects on our earnings by **driving productivity through operational excellence** in everything we do.

COVID-19 Pandemic

However, the world has changed and as I write to you today, the COVID-19 pandemic has surpassed every headwind ever faced in terms of its immediate and long-term impact on our business and the customers we serve. In response to economic uncertainties in both the aerospace and industrial sectors resulting from COVID-19, we and Woodward mutually agreed to end our plans for a merger of equals. It was disappointing news after so much anticipation and effort, yet it was the right thing to do for our customers, our shareholders, and ourselves. It is crucial at the current time that we **dedicate our focus and resources** toward ensuring that we remain closely connected with customers, maintaining our leadership positions, and taking the steps necessary to preserve our future.

Our Response

While we do not yet know how long this pandemic will last or its likely long – term impact on customer demand, let me assure you that **Hexcel is acting swiftly** to respond. Our top priorities are protecting the health and safety of our employees, continuing to serve our customers, and ensuring that Hexcel successfully navigates the economic challenges created by the pandemic. Our strong performance over the past several years positions us to face this crisis with a **strong balance sheet and robust liquidity position**.

As our customers adjust build rates, we will take the steps necessary to ensure that our operations – including employment levels, capacity, and inventory – are right-sized to meet the new demand levels ahead. We have announced significant reductions in our workforce as well as short-term cost saving actions, including temporary salary reductions, unpaid furloughs, and suspension of our 401K match. We have implemented a hiring freeze, curtailed capital expenditures, and scrutinized all discretionary spending. This combination of decisive actions, while painful, has helped us to preserve critical jobs as we continue to serve our customers and restructure our organization to better align with customer requirements in the months and years to come. We also are rebasing our cost structure to ensure we deliver **strong earnings and returns on capital** for those who invest in Hexcel.



Continuing Operations

Most of our plants are continuing to operate during these uncertain times to meet customer commitments because we believe we have an obligation to the national and economic security of the countries where we do business – and to our customers – to keep those plants open as long as we can safely do so. Hexcel is a sole source provider for many programs, including essential defense platforms. We are **staying close to our customers** as we better understand how the pandemic is affecting their operations and future business.

This health crisis has touched all of us and made us view the world differently. However, **the Hexcel value proposition is unchanged**. The global economy will come back, more people will resume flying, and airlines will once again order new composite-rich aircraft to meet this growing demand. The trend toward integrating our strong, lightweight materials into wind turbines, automobiles, marine, and recreation will continue growing once we return to our everyday lives.

Compelling Investment

Our technology leadership in advanced materials, our intimate working relationships with our customers, and our exceptional people make Hexcel a compelling investment. The future of aerospace is increasingly dependent on lightweight advanced materials and manufacturing solutions for greater fuel efficiency, lower emissions, and more aerodynamic aircraft designs that Hexcel is uniquely positioned to provide.

Our **Hexcel Purpose** is intact:

We propel the future of flight, energy generation, transportation and recreation through excellence in advanced material solutions that create a better world for us all.

In times of crisis, successful companies remain resilient and have the courage and discipline to make hard choices for the benefit of all stakeholders. Our Hexcel leadership team is unified, our financial profile is healthy, and we are focused on doing the right thing. Our commitment to Operational Excellence is firm and its impact on cost savings and productivity has never been more critical. When the crisis passes, **no company will be better positioned to support its customers than Hexcel**.

With **leading technology leveraged by our passion for innovation, strong customer relationships** that will grow even stronger during these challenging times, and a talented team that perseveres in the face of any challenge – I am confident that **our business will thrive** in the future.

Thank you for your continued confidence and investment in Hexcel.



Nick L. Stanage

Chairman of the Board,
Chief Executive Officer & President
Hexcel Corporation



**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 1-8472

Hexcel Corporation

(Exact name of registrant as specified in its charter)

Delaware

(State or Other Jurisdiction of Incorporation or Organization)

94-1109521

(I.R.S. Employer Identification No.)

Two Stamford Plaza

281 Tresser Boulevard, 16th Floor

Stamford, Connecticut 06901

(Address of principal executive offices and zip code)

Registrant's telephone number, including area code: (203) 969-0666

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	HXL	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	<input checked="" type="checkbox"/>	Accelerated filer	<input type="checkbox"/>
Non-accelerated filer	<input type="checkbox"/>	Smaller reporting company	<input type="checkbox"/>
		Emerging growth company	<input type="checkbox"/>

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any or new 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 registrant's common stock held by non-affiliates was \$6,879,573,133 based on the reported last sale price of common stock on June 28, 2019, which is the last business day of the registrant's most recently completed second fiscal quarter.

The number of shares outstanding of each of the registrant's classes of common stock, as of the latest practicable date.

Class	Outstanding as of January 31, 2020
COMMON STOCK	83,344,269

Documents Incorporated by Reference:

Portions of Part III will be incorporated by reference in accordance with Instruction G(3) to Form 10-K no later than 120 days after the end of the registrant's fiscal year.

HEXCEL CORPORATION AND SUBSIDIARIES
ANNUAL REPORT ON FORM 10-K
For the fiscal year ended December 31, 2019
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PART I

ITEM 1. Business.

General Development of Business

Hexcel Corporation, founded in 1946, was incorporated in California in 1948, and reincorporated in Delaware in 1983. Hexcel Corporation and its subsidiaries (herein referred to as “Hexcel”, “the Company”, “we”, “us”, or “our”), is a leading advanced composites company. We develop, manufacture, and market lightweight, high-performance structural materials, including carbon fibers, specialty reinforcements, prepregs and other fiber-reinforced matrix materials, honeycomb, adhesives, radio frequency / electromagnetic interference (“RF/EMI”) and microwave absorbing materials, engineered honeycomb and composite structures, for use in Commercial Aerospace, Space & Defense and Industrial markets. Our products are used in a wide variety of end applications, such as commercial and military aircraft, space launch vehicles and satellites, wind turbine blades, automotive, recreational products and other industrial applications.

We serve international markets through manufacturing facilities, sales offices and representatives located in the Americas, Asia Pacific, Europe, India and Africa. We also have a presence in Malaysia where we are a partner in a joint venture which manufactures composite structures for Commercial Aerospace applications.

On January 12, 2020, we entered into a definitive merger agreement with Woodward, Inc. (“Woodward”) to combine in an all stock merger of equals, pursuant to which Hexcel shareholders will receive a fixed exchange ratio of 0.625 shares of Woodward common stock for each share of Hexcel common stock, and Woodward shareholders will continue to own the same number of shares of common stock in the combined company as they do immediately prior to the closing. The exchange ratio is consistent with the 30-day average share prices of both companies. Upon completion of the merger, existing Woodward shareholders will own approximately 55%, and existing Hexcel shareholders will own approximately 45%, of the combined company on a fully diluted basis. The transaction is subject to approval by Woodward and Hexcel shareholders and the satisfaction of customary closing conditions and regulatory approvals. Woodward and Hexcel expect to complete the transaction in the third quarter of 2020. See Part I, Item 1A, “Risk Factors,” Part II, Item 7, “Management’s Discussion and Analysis of Financial Condition and Results of Operations,” and Note 22 of the notes to consolidated financial statements included in this Annual Report on Form 10-K for additional information regarding the transaction.

On January 3, 2019, we acquired ARC Technologies, LLC (“ARC”), a leading supplier of custom RF/EMI and microwave absorbing composite materials for military, aerospace and industrial applications. The acquisition strengthened our existing advanced materials portfolio in structural composites and thermoplastics.

We are a manufacturer of products within a single industry: Advanced Composites. Hexcel has two reportable segments: Composite Materials and Engineered Products. The Composite Materials segment is comprised of our carbon fiber, specialty reinforcements, resins, prepregs and other fiber-reinforced matrix materials, and honeycomb core product lines and pultruded profiles. The Engineered Products segment is comprised of lightweight high strength composite structures, RF/EMI and microwave absorbing materials, engineered core and specialty machined honeycomb products with added functionality.

The following summaries describe the ongoing activities related to the Composite Materials and Engineered Products segments as of December 31, 2019.

Composite Materials

The Composite Materials segment manufactures and markets carbon fibers, fabrics and specialty reinforcements, prepregs and other fiber-reinforced matrix materials, structural adhesives, honeycomb, molding compounds, tooling materials, polyurethane systems and laminates that are incorporated into many applications, including military and commercial aircraft, wind turbine blades, recreational products, transportation (including automotive, marine and trains) and other industrial applications.

The following table identifies the principal products and examples of the primary end-uses from the Composite Materials segment:

SEGMENT	PRODUCTS	PRIMARY END-USES
COMPOSITE MATERIALS	Carbon Fibers	<ul style="list-style-type: none"> • Raw materials for prepregs, fabrics and specialty reinforcements • Filament winding for various aerospace, defense and industrial applications
	Fabrics, Multi-axials and Specialty Reinforcements	<ul style="list-style-type: none"> • Raw materials for prepregs • Composites and components used in aerospace, defense, wind energy, automotive, recreation, marine and other industrial applications
	Prepregs, Other Fiber-Reinforced Matrix Materials and Resins	<ul style="list-style-type: none"> • Epoxy resin systems • Composite structures • Commercial and military aircraft components • Satellites and launchers • Aero-engines • Wind turbine and helicopter blades • Automotive, marine and trains • Skis, snowboards, bicycles and hockey sticks
	Structural Adhesives	<ul style="list-style-type: none"> • Bonding of metals, honeycomb and composite materials
	Honeycomb	<ul style="list-style-type: none"> • Composite structures and interiors • Impact and shock absorption systems • Helicopter blades
	Pultruded Profiles	<ul style="list-style-type: none"> • Tubes • Rods and flat sections for sporting goods • Robotics • Medical applications

Carbon Fibers: HexTow® carbon fibers are manufactured for sale to third-party customers as well as for our own use in manufacturing certain reinforcements and composite materials. Carbon fibers are also woven into carbon fabrics, used as reinforcement in conjunction with a resin matrix to produce pre-impregnated composite materials (referred to as “prepregs”). Carbon fiber is also used in filament winding to produce finished composite components. Key product applications include structural components for commercial and military aircraft, space launch vehicles, and certain other applications such as recreational and industrial equipment.

Fabrics, Multi-axials and Specialty Reinforcements: HexForce® fabrics, multi-axials and specialty reinforcements are made from a variety of fibers, including carbon, glass, aramid and other high strength polymers, quartz, ceramic and other specialty fibers. These reinforcements are used in the production of prepregs and other matrix materials for third-party customers as well as for our own use. They are also used in the manufacture of a variety of industrial and recreational products such as wind energy blades, automotive components, oil exploration and production equipment, boats, surfboards, skis and other sporting goods equipment.

Prepregs: HexPly® prepregs are manufactured for sale to third-party customers and for internal use by our Engineered Products segment in manufacturing composite laminates and monolithic structures. Prepregs are used in primary and secondary structural aerospace applications such as wing components, horizontal and vertical stabilizer components, fairings, radomes and engine fan blades and cases, engine nacelles as well as overhead storage bins and other interior components. They are also used in many of the industrial and recreational products noted above. Prepregs are manufactured by combining high-performance reinforcement fabrics or unidirectional fibers with a resin matrix to form a composite material that, when cured, has exceptional structural properties not present in either of the constituent materials. Prepregs are applied via hand layup, automatic tape layup and advanced fiber placement to produce finished composite components. Prepreg reinforcements include glass, carbon, aramid, quartz, ceramic and other specialty fibers. Resin matrices include bismaleimide, cyanate ester, epoxy, phenolic, polyimide and other specialty resins.

Other Fiber-Reinforced Matrix Materials: Fiber reinforced matrix developments include HexMC®, a form of quasi-isotropic carbon fiber prepreg that enables small to medium sized, complex-shaped, composite components to be mass produced. HexTool® is a specialized form of HexMC® for use in the cost-effective construction of high temperature resistant composite tooling. HexFIT® film infusion material is a product that combines resin films and dry fiber reinforcements to save lay-up time in production and enables the manufacture of large contoured composite structures, such as wind turbine blades.

Resins: HexFlow® polymer matrix materials are sold in liquid and film form for use in direct process manufacturing of composite parts. Resins can be combined with fiber reinforcements in manufacturing processes such as resin transfer molding, resin film infusion or vacuum assisted resin transfer molding to produce high quality composite components for both aerospace and industrial applications, without the need for customer investment in autoclaves.

Structural Adhesives: We manufacture and market a comprehensive range of HexBond™ film and paste adhesives. These structural adhesives, which bond metal to metal and composites and honeycomb structures, are used in the aerospace industry and for many industrial applications.

Honeycomb: HexWeb® honeycomb is a lightweight, cellular structure generally composed of a sheet of nested hexagonal cells. It can also be manufactured in over-expanded and asymmetric cell configurations to meet special design requirements such as contours or complex curvatures. Honeycomb is primarily used as a lightweight core material and acts as a highly efficient energy absorber. When sandwiched between composite or metallic facing skins, honeycomb significantly increases the stiffness of the structure, while adding very little weight.

We produce honeycomb from a number of metallic and non-metallic materials. Most metallic honeycomb is made from aluminum and is available in a selection of alloys, cell sizes and dimensions. Non-metallic materials used in the manufacture of honeycomb include fiberglass, carbon fiber, thermoplastics, non-flammable aramid papers, aramid fiber and other specialty materials.

We sell honeycomb as standard blocks and in slices cut from a block. Aerospace is the largest market for honeycomb products.

Our HexWeb® Acousti-Cap® sound attenuating honeycomb provides dramatic noise reduction during takeoff and landing without a structural weight penalty, Acousti-Cap® incorporates a non-metallic, permeable cap material is embedded into honeycomb core. In addition, we produce honeycomb for our Engineered Products segment for use in manufacturing finished parts for airframe Original Equipment Manufacturers (“OEMs”).

Polyspeed® Pultruded profiles: Hexcel manufactures a wide range of pultruded sections including rods, flat sections, tubes and specific profiles that are usually made from carbon fiber but can also be made from glass, quartz, basalt or other fibers. The profile matrix is a Hexcel formulation of thermoset resin (epoxy or polyurethane). Hexcel pultruded profiles are used in a wide range of industrial applications.

The following tables identify the key customers and the major manufacturing facilities of the Composite Materials segment:

COMPOSITE MATERIALS		
KEY CUSTOMERS		
Aernnova	CTRM Aero Composites	Northrop Grumman
Airbus	Daher	Safran
AVIC	Embraer	Sikorsky, a Lockheed Martin Company
Bell	FACC	Solvay
Blizzard	General Electric	Spirit Aerosystems
BMW	GKN	Toray
The Boeing Company	Leonardo	Triumph
Bombardier	Mubea	United Technologies
CFAN	Nordam	Vestas

MAJOR MANUFACTURING FACILITIES

Casa Grande, Arizona	Parla, Spain
Dagneux, France	Roussillon, France
Decatur, Alabama	Salt Lake City, Utah
Duxford, England	Seguin, Texas
Illescas, Spain	Stade, Germany
Leicester, England	Tianjin, China
Les Avenières, France	Vert-Le-Petit, France
Nantes, France	Windsor, Colorado
Neumarkt, Austria	

Net sales for the Composite Materials segment to third-party customers were \$1,863 million in 2019, \$1,771 million in 2018, and \$1,597 million in 2017, which represented about 80% of our net sales each year. Net sales for composite materials are highly dependent upon the number of large commercial aircraft produced as further discussed under the captions “Significant Customers”, “Markets” and “Management’s Discussion and Analysis of Financial Condition and Results of Operations”. In addition, less than 5% of our total production of composite materials in 2019 was used internally by the Engineered Products segment.

Engineered Products

The Engineered Products segment manufactures and markets composite structures and precision machined honeycomb parts primarily for use in the aerospace industry. Composite structures are manufactured from a variety of composite and other materials, including prepregs, honeycomb, and structural adhesives, using such manufacturing processes as autoclave processing, multi-axis numerically controlled machining, heat forming, and other composite manufacturing techniques. Composite structures include HexAM™ 3D printed parts, which offer significant weight cost and time-to-market reductions compared to incumbent metal or traditional composite technologies. This segment also provides advanced interference control materials, structural composites, and services; dielectric absorber foams and honeycomb; magnetic absorbers; and thermoplastics for commercial and defense applications.

The following tables identify the principal products and examples of the primary end-uses from the Engineered Products segment:

SEGMENT	PRODUCTS	PRIMARY END-USES
ENGINEERED PRODUCTS	Composite Structures	<ul style="list-style-type: none"> Aircraft structures and finished aircraft components, including wing to body fairings, wing panels, flight deck panels, door liners, helicopter blades, spars and tip caps
	Engineered Honeycomb	<ul style="list-style-type: none"> Aircraft structural sub-components and semi-finished components used in helicopter blades, engine nacelles, and aircraft surfaces (flaps, wings, elevators and fairings)
	RF Interference Control	<ul style="list-style-type: none"> Military and aerospace applications

Net sales for the Engineered Products segment to third-party customers were \$493 million in 2019, \$419 million in 2018, and \$376 million in 2017, which represented about 20% of our net sales each year.

The Engineered Products segment includes a 50% ownership interest in a Malaysian joint venture, Aerospace Composites Malaysia Sdn. Bhd. (“ACM”) with Boeing Worldwide Operations Limited. Hexcel has historically purchased certain semi-finished composite components from the joint venture and performed inspection and additional skilled assembly work prior to direct delivery to Boeing production lines. This assembly work is being transferred in stages to other parts of the supply chain, including the joint venture over the next few years in support of Boeing’s supply chain optimization. ACM had revenue of \$61 million in 2019, and \$59 million and \$62 million in 2018 and 2017, respectively.

The following table identifies the key customers and the major manufacturing facilities of the Engineered Products segment:

ENGINEERED PRODUCTS	
KEY CUSTOMERS	MAJOR MANUFACTURING FACILITIES
The Boeing Company	Alor Setar, Malaysia (joint venture)
Bell	Amesbury, Massachusetts
CTRM Aero Composites	Burlington, Washington
General Electric	Casablanca, Morocco
GKN	Kent, Washington
Lockheed Martin	Pottsville, Pennsylvania
Sikorsky, a Lockheed Martin Company	South Windsor, Connecticut
Spirit Aerosystems	Welkenraedt, Belgium
United Technologies	

Significant Customers

Approximately 39%, 41% and 44% of our 2019, 2018 and 2017 net sales, respectively, were to Airbus and its subcontractors. Of the 39% of overall sales to Airbus and its subcontractors in 2019, 36% related to Commercial Aerospace market applications and 3% related to Space & Defense market applications. Approximately 25% of our net sales for each of 2019, 2018 and 2017 net sales, were to Boeing and related subcontractors. Of the 25% of overall sales to Boeing and its subcontractors in 2019, 23% related to Commercial Aerospace market applications and 2% related to Space & Defense market applications.

Markets

Our products are sold for a broad range of end-uses where durability, strength and weight are important factors to our customers. The following tables summarize our net sales to third-party customers by market and by geography for each of the three years ended December 31:

	2019	2018	2017
Net Sales by Market			
Commercial Aerospace	68%	70%	72%
Space & Defense	19	17	17
Industrial	13	13	11
Total	100%	100%	100%
Net Sales by Geography (a)			
United States	53%	48%	48%
Europe and other	47	52	52
Total	100%	100%	100%

(a) Net sales by geography based on the location in which the product sold was manufactured.

	2019	2018	2017
Net Sales to External Customers (b)			
United States	46%	42%	41%
Europe	37	41	42
All Others	17	17	17
Total	100%	100%	100%

(b) Net sales to external customers based on the location to which the product sold was delivered

Commercial Aerospace

The Commercial Aerospace industry is our largest user of advanced composites. Commercial Aerospace represented 68% of our 2019 net sales. Approximately 87% of these revenues can be identified as sales to Airbus, Boeing and their subcontractors for the production of commercial aircraft. Approximately 13% of these revenues were for regional, and business and other commercial aircraft. The economic benefits airlines can obtain from weight savings in both fuel economy and aircraft range, combined with the design enhancement that comes from the advantages of advanced composites over traditional materials, has resulted in the aerospace industry becoming the leader in the adoption and use of these materials. While military aircraft and spacecraft have championed the development of these materials, Commercial Aerospace has had the greater production volumes and has commercialized the use of these products. Accordingly, the demand for advanced structural material products is closely correlated to the demand for new commercial aircraft.

The use of advanced composites in Commercial Aerospace is primarily in the manufacture of new commercial aircraft. These composite materials are designed to last the life of the aircraft and engine so as a result, the aftermarket for these products is minimal. The demand for new commercial aircraft is driven by two principal factors, the first of which is airline passenger traffic (the number of revenue passenger miles flown by the airlines) which affects the required size of airline fleets. The International Air Transport Association (“IATA”) estimates 2019 revenue passenger miles were 4.5% higher than 2018. Growth in passenger traffic requires growth in the size of the fleet of commercial aircraft operated by airlines worldwide.

A second factor, which is less sensitive to the general economy, is the replacement rates for existing aircraft. The rates of retirement of passenger and freight aircraft, resulting mainly from obsolescence, are determined in part by the regulatory requirements established by various civil aviation authorities worldwide as well as public concern regarding aircraft age, safety and noise. These rates may also be affected by the desire of the various airlines to improve operating costs with higher payloads and more fuel-efficient aircraft (which in turn is influenced by the price of fuel) and by reducing maintenance expense. In addition, there is expected to be increasing pressure on airlines to replace their aging fleet with more fuel efficient and quieter aircraft to be more environmentally responsible. When aircraft are retired from commercial airline fleets, they may be converted to cargo freight aircraft, used for parts or scrapped.

An additional factor that may cause airlines to defer or cancel orders is their ability to obtain financing, including leasing, for new aircraft orders. This will be dependent both upon the financial health of the airline operators, as well as the overall availability of financing in the marketplace.

Each new generation of commercial aircraft has used increasing quantities of advanced composites, replacing metals. This follows the trend previously seen in military fighter aircraft where advanced composites may now exceed 50% of the weight of the airframe. Early versions of commercial jet aircraft, such as the Boeing 707, which was developed in the early 1950’s, contained almost no composite materials. One of the first commercial aircraft to use a meaningful amount of composite materials, the Boeing 767 entered into service in 1983, and was built with an airframe containing approximately 6% composite materials. The airframe of Boeing’s 777 aircraft, which entered service in 1995, is approximately 11% composite. The Airbus A380, which was first delivered in 2007, has approximately 23% composite content by weight. Boeing’s B787, which entered into service in 2011, has a content of more than 50% composite materials by weight. The Airbus A350 XWB (“A350”) which has a composite content of 53% by weight was first delivered in December 2014. Both Airbus and Boeing introduced new versions of their narrow body aircraft which utilize composite-rich engines. Airbus’s A320neo had its first customer delivery in 2016 and Boeing’s B737 MAX entered into service in 2017, although it is currently grounded with production suspended. In 2014, Airbus announced a new version of its A330, the A330neo, which has new engines, and Boeing announced the B777X, a new version of the B777 with composite wings and composite-rich engines. It is expected that new aircraft will offer more opportunities for composite materials than their predecessors, as the Commercial Aerospace industry continues to utilize a greater proportion of advanced composite materials with each new generation of aircraft and each new generation of engines and nacelles. We refer to this steady expansion of the use of composites in aircraft as the “secular penetration of composites” as it increases our average sales per airplane over time.

The impact on Hexcel of Airbus and Boeing production rate changes is typically influenced by two factors: the mix of aircraft produced and the inventory supply chain effects of increases or reductions in aircraft production. We have products on all Airbus and Boeing planes. The dollar value of our materials varies by aircraft type — twin aisle aircraft use more of our materials than narrow body aircraft and newer designed aircraft use more of our materials than older generations. On average, for established programs, we deliver products into the supply chain about six months prior to aircraft delivery, with a range between one and eighteen months depending on the product. For aircraft that are in the development or ramp-up stage we will have sales as much as several years in advance of the delivery. Increased aircraft deliveries combined with the secular penetration of composites resulted in our Commercial Aerospace revenues increasing, year over year, by approximately 4.8% in 2019 and 8.2% in 2018.

Set forth below are historical aircraft deliveries as announced by Airbus and Boeing:

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Airbus	434	453	483	498	510	534	588	626	629	635	688	730	800	863
Boeing	398	441	375	481	462	477	601	648	723	762	748	763	806	380
Total	832	894	858	979	972	1,011	1,189	1,274	1,352	1,397	1,436	1,493	1,606	1,243

Approximately 87% of our Commercial Aerospace revenues can be identified as sales to Airbus, Boeing and their subcontractors for the production of commercial aircraft. Airbus and Boeing combined deliveries in 2019 were 1,243 aircraft. Their combined backlog at December 31, 2019 was 13,107 planes, or about 10 years based on 2019 deliveries, which were unusually low as a result of the grounding of the Boeing 737 MAX. The balance of our Commercial Aerospace sales is related to regional and business aircraft manufacture, and other commercial aircraft applications. These applications also exhibit increasing utilization of composite materials with each new generation of aircraft.

Space & Defense

The Space & Defense market has historically been an innovator in the use of, and source of significant demand for, advanced composites. The aggregate demand by Space & Defense customers is primarily a function of procurement of military aircraft that utilize advanced composites, primarily by the United States and certain European governments, including both commercial and military helicopters. We are qualified to supply materials to a broad range of helicopter, military aircraft and space programs, including the Lockheed Martin F-35 (“joint strike fighter” or “JSF”), Boeing V-22 (“Osprey”) tilt rotor aircraft, Black Hawk and Airbus A400M military transport. The JSF, which is our largest program, represents less than 25% of revenues in this market. No other program accounting for more than 10% of our revenues in this market. The sales that we obtain from these programs will depend upon which are funded and the extent of such funding. Space applications for advanced composites include solid rocket booster cases, fairings and payload doors for launch vehicles, and satellite buss and solar arrays for military and commercial satellites.

Another trend generating growth for Hexcel is the further penetration of composites in helicopter blades. Numerous new helicopter programs in development, as well as upgrade or retrofit programs, have an increased utilization of Composite Materials products such as carbon fiber, prepregs, and honeycomb core to improve blade performance. In addition, our Engineered Products segment provides specialty value added services such as machining, sub-assembly, and even full blade manufacturing for rotorcraft.

Contracts for military and some commercial programs may contain provisions applicable to both U.S. government contracts and subcontracts. For example, a prime contractor may flow down a “termination for convenience” clause to materials suppliers such as Hexcel. According to the terms of a contract, we may be subject to U.S. government Federal Acquisition Regulations, the Department of Defense Federal Acquisition Regulations Supplement, and associated procurement regulations.

Industrial

The revenue from this market includes wind turbine blades, automotive, a wide variety of recreational products, marine and other industrial applications. A number of these applications represent emerging opportunities for our products. In developing new applications, we seek those opportunities where advanced composites technology offers significant benefits to the end user, often applications that demand high engineering performance. Within the Industrial markets, wind energy comprises the largest submarket and our primary customer is Vestas Wind Systems A/S (“Vestas”). The Industrial markets also include sales to major end user submarkets, in order of size based on our 2019 sales: general industrial applications (including those sold through distributors), transportation (e.g., automobiles, mass transit and high-speed rail, and marine applications) and recreational equipment (e.g., skis and snowboards, bicycles and hockey sticks). Our participation in Industrial applications complements our commercial and military aerospace businesses, and in many instances, technology or products now used in aerospace were started in Industrial. We are committed to pursuing the utilization of advanced structural material technology where it can generate significant value and we can maintain a sustainable competitive advantage.

Further discussion of our markets, including certain risks, uncertainties and other factors with respect to “forward-looking statements” about those markets, is contained under the captions “Management’s Discussion and Analysis of Financial Condition and Results of Operations”, “Forward Looking Statements” and “Risk Factors”.

Backlog

In recent years, our customers have demanded shorter order lead times and “just-in-time” delivery performance. While we have many multi-year contracts with our major aerospace customers and our largest Industrial customer, most of these contracts specify the proportion of the customers’ requirements that will be supplied by us and the terms under which the sales will occur, not the specific quantities to be procured or the specific dates for delivery. Our Industrial customers have always desired to order their requirements on as short a lead-time as possible. As a result, twelve-month order backlog is not a meaningful trend indicator for us. As noted above, our Commercial Aerospace sales to Airbus and Boeing and their subcontractors accounted for 59% of our total 2019 sales, and their airplane backlog is over ten years based on 2019 deliveries, which were unusually low as a result of the grounding of the Boeing 737 MAX.

Raw Materials and Production Activities

Our manufacturing operations are in many cases vertically integrated. We produce and internally use carbon fibers, industrial fabrics, composite materials and composite structures as well as sell these materials to third-party customers for their use in the manufacture of their products.

We manufacture high performance carbon fiber from polyacrylonitrile precursor (“PAN”). The primary raw material for PAN is acrylonitrile. All of the PAN we produce is for internal carbon fiber production. We consume about 75% by value of the carbon fiber we produce and sell the remainder of our output to third-party customers. However, as one of the world’s largest consumers of high performance carbon fiber, we also purchase significant quantities of carbon fiber from external sources for our own use. The sources of carbon fiber we can use in any product or application are generally dictated by customer qualifications or certifications. Otherwise, we select a carbon fiber based on performance, price and availability. With the increasing demand for carbon fiber, particularly in aerospace applications, in recent years we have significantly increased our PAN and carbon fiber capacity to serve the growing needs of our customers and our own downstream products. After a new production line starts operating, it can take up to a year to be certified for aerospace qualifications. However, these lines can start supplying carbon fiber for many industrial applications within a shorter time period.

We purchase glass yarn from a number of suppliers in the United States, Europe and Asia for our Industrial market products. We also purchase aramid and high strength fibers which are produced by only a few companies, and during periods of high demand, can be in short supply. In addition, epoxy and other specialty resins, aramid paper and aluminum specialty foils are used in the manufacture of composite products. A number of these products have only one or two sources qualified for use, so an interruption in their supply could disrupt our ability to meet our customer requirements. When entering into multi-year contracts with aerospace customers, we attempt to get back-to-back commitments from key raw material suppliers.

Our manufacturing activities are primarily based on “make-to-order”, or “demand pull” based on customer schedules, and to a lesser extent, “make-to-forecast” production requirements. We coordinate closely with key suppliers in an effort to avoid raw material shortages and excess inventories. However, many of the key raw materials we consume are available from relatively few sources, and in many cases the cost of product qualification makes it impractical to develop multiple sources of supply. The lack of availability of these materials could under certain circumstances have a material adverse effect on our consolidated results of operations.

Research and Technology; Patents and Know-How

Research and Technology (“R&T”) departments support our businesses worldwide. Through R&T activities, we maintain expertise in precursor and carbon fiber, chemical and polymer formulation and curatives, fabric forming and textile architectures, advanced composite structures, process engineering, application development, analysis and testing of composite materials, computational design, and other scientific disciplines related to our worldwide business base.

Our products rely primarily on our expertise in materials science, textiles, process engineering and polymer chemistry. Consistent with market demand, we have been placing more emphasis on higher performing products and cost effective production processes while seeking to improve the consistency of our products and our capital efficiency. Towards this end, we have entered into formal and informal alliances, as well as licensing and teaming arrangements, with several customers, suppliers, external agencies and laboratories. We believe that we possess unique capabilities to design, develop, manufacture and qualify composite materials and structures, including trade secrets and extensive internal knowledge gained from decades of experience. We have more than 1,680 patents and pending applications worldwide, and have granted technology licenses and patent rights to several third parties primarily in connection with joint ventures and joint development programs. It is our policy to actively enforce our proprietary rights. We believe that the patents and know-how rights currently owned or licensed by Hexcel are adequate for the conduct of our business. We do not believe that our business would be materially affected by the expiration of any single patent or series of related patents, or by the termination of any single license agreement or series of related license agreements.

We spent \$56.5 million, \$55.9 million and \$49.4 million for R&T in 2019, 2018 and 2017, respectively. Our spending, on a constant currency basis, in 2019 was more than 3.3% higher than 2018 and in 2018 was more than 11% higher than 2017. Our spending on a quarter to quarter basis fluctuates depending upon the amount of new product development and qualification activities, particularly in relation to commercial aircraft applications, that are in progress. These expenditures are expensed as incurred.

Environmental Matters

We are subject to various U.S. and international federal, state and local environmental and health and safety laws and regulations. We are also subject to liabilities arising under the Federal Comprehensive Environmental Response, Compensation and Liability Act (“CERCLA” or “Superfund”), the Clean Air Act, the Clean Water Act, the Resource Conservation and Recovery Act, and similar state local and international laws and regulations that impose responsibility for the control, remediation and abatement of air, water and soil pollutants and the manufacturing, storage, handling and disposal of hazardous substances and waste. We believe that our policies, practices, and procedures are properly designed to prevent unreasonable risk of environmental damage and associated financial liability. To date, environmental control regulations have not had a significant adverse effect on our overall operations.

Our aggregate environmental related accruals at December 31, 2019 and 2018 were \$2.5 million and \$2.7 million, respectively. As of December 31, 2019 and 2018, \$0.6 million and \$0.8 million, respectively, were included in “Other current accrued liabilities”, with the remainder included in “Other non-current liabilities”. As related to certain of our environmental matters, our accruals were estimated at the low end of a range of possible outcomes since there was no better point within the range. If we had accrued, for those sites where we are able to estimate our liability, at the high end of the range of possible outcomes, our accruals would have been \$16 million higher at December 31, 2019 and 2018. Environmental remediation spending charged directly to our reserve balance for 2019, 2018 and 2017, was \$0.2 million, \$0.4 million and \$0.5 million, respectively. In addition, our operating costs relating to environmental compliance were \$17.1 million, \$15.6 million and \$9.9 million for 2019, 2018, and 2017, respectively, and were charged directly to expense. Capital expenditures for environmental matters approximated \$3.6 million, \$6.9 million and \$8.4 million for 2019, 2018 and 2017 respectively.

These accruals can change significantly from period to period due to such factors as additional information on the nature or extent of contamination, the methods of remediation required, changes in the apportionment of costs among responsible parties and other actions by governmental agencies or private parties, as well as the impact, if any, of Hexcel being named in a new matter. A discussion of environmental matters is contained in Item 3, “Legal Proceedings,” and in Note 15 to the accompanying consolidated financial statements included in this Annual Report on Form 10-K.

Sales and Marketing

A staff of salaried marketing managers, product managers and sales personnel, sell and market our products directly to customers worldwide. We also use independent distributors and manufacturer representatives for certain products, markets and regions. In addition, we operate various sales representation offices in the Americas, Europe, Asia Pacific, India and Africa.

Competition

In the production and sale of advanced composites, we compete with a number of U.S. and international companies on a worldwide basis. The broad markets for composites are highly competitive, and we have focused on both specific submarkets and specialty products within markets. In addition to competing directly with companies offering similar products, we compete with producers of substitute composites such as structural foam, infusion technology, thermoplastics, wood and metal. Depending upon the material and markets, relevant competitive factors include approvals, database of usage, technology, product performance, delivery, service, price, customer preference for sole sourcing and customer preferred processes.

Employees

As of December 31, 2019, we employed 6,977 full-time employees and contract workers: 4,021 in the United States and 2,956 in other countries. We employ a minimal number of contract workers. Approximately 17% of employees in the United States and the majority of those in Europe were represented by collective bargaining agreements. We believe that our relations with employees and unions are good. The number of full-time employees and contract workers as of December 31, 2018 and 2017 was 6,626 and 6,259, respectively.

Other Information

Our internet website is www.hexcel.com. We make available, free of charge through our website, our Form 10-Ks, 10-Qs and 8-Ks, and any amendments to these forms, as soon as reasonably practicable after filing with, or furnishing to, the Securities and Exchange Commission (“SEC”).

Forward-Looking Statements

This report contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. These statements relate to analyses and other information that are based on forecasts of future results and estimates of amounts not yet determinable. These statements also relate to future prospects, developments and business strategies. These forward-looking statements are identified by their use of terms and phrases such as “anticipate”, “believe”, “continue”, “could”, “estimate”, “expect”, “intend”, “may”, “plan”, “potential”, “predict”, “project”, “should”, “target”, “would”, “will” and similar terms and phrases, including references to assumptions. Such statements are based on current expectations, are inherently uncertain and are subject to changing assumptions.

Such forward-looking statements include, but are not limited to: (a) the estimates and expectations based on aircraft production rates made publicly available by Airbus, Boeing and others; (b) the revenues we may generate from an aircraft model or program; (c) the impact of the possible push-out in deliveries of the Airbus and Boeing backlog and the impact of delays in the startup or ramp-up of new aircraft programs or the final Hexcel composite material content once the design and material selection have been completed; (d) expectations with regard to the build rate and return to service of the Boeing 737 MAX and the related impact on our revenues (e) expectations of composite content on new commercial aircraft programs and our share of those requirements; (f) expectations of growth in revenues for space and defense applications, including whether certain programs might be curtailed or discontinued; (g) expectations regarding growth in sales for wind energy, recreation, automotive and other industrial applications; (h) expectations regarding working capital trends and expenditures; (i) expectations as to the level of capital expenditures and when we will complete the construction of capacity expansions and qualification of new products; (j) expectations regarding our ability to maintain and improve margins as we add new facilities and in view of the current economic environment; (k) expectations regarding the outcome of legal matters or the impact of changes in laws or regulations; (l) our projections regarding our tax rate (m) the anticipated impact of the above factors and various market risks on our expectations of financial results for 2020 and beyond; and (n) and the anticipated closing date and impact of the merger between Hexcel and Woodward.

Such forward-looking statements involve known and unknown risks, uncertainties and other factors that may cause actual results to be materially different. Such factors include, but are not limited to, the following: reductions in sales to any significant customers, particularly Airbus, Boeing or Vestas, including any reduction in revenue related to a prolonged suspension of production of the Boeing 737 MAX; changes in sales mix; changes in current pricing and cost levels; changes in aerospace delivery rates; changes in government defense procurement budgets; changes in military aerospace program technology; timely new product development or introduction; industry capacity; increased competition; availability and cost of raw materials; supply chain disruptions; inability to install, staff and qualify necessary capacity or achievement of planned manufacturing improvements; cybersecurity breaches or intrusions; currency exchange rate fluctuations; changes in global political, social and economic conditions; including, but not limited to, the effect of change in global trade policies and the exit of the U.K. from the European Union; work stoppages or other labor disruptions; unexpected outcome of legal matters or impact of changes in laws or regulations; the occurrence of any event, change or other circumstances that could give rise to the right of one or both of Hexcel or Woodward to terminate the merger agreement; the outcome of any legal proceedings that may be instituted against Hexcel, Woodward or their respective directors; the ability to obtain regulatory approvals and meet other closing conditions to the merger on a timely basis or at all, including the risk that regulatory approvals required for the merger are obtained subject to conditions that are not anticipated or that could adversely affect the combined company or the expected benefits of the transaction; the ability to obtain approval by Hexcel stockholders and Woodward stockholders on the expected schedule; difficulties and delays in integrating Hexcel’s and Woodward’s businesses; prevailing economic, market, regulatory or business conditions, or changes in such conditions, negatively affecting the parties; risks that the transaction disrupts Hexcel’s or Woodward’s current plans and operations; failing to fully realize anticipated cost savings and other anticipated benefits of the merger when expected or at all; potential adverse reactions or changes to business relationships resulting from the announcement or completion of the merger; the ability of Hexcel or Woodward to retain and hire key personnel; the diversion of management’s attention from ongoing business operations; uncertainty as to the long-term value of the common stock of the combined company following the merger; the continued availability of capital and financing following the merger; the business, economic and political conditions in the markets in which Hexcel and Woodward operate; and the fact that Hexcel’s and Woodward’s reported earnings and financial position may be adversely affected by tax and other factors. Additional risk factors are described in our filings and in Woodward’s filings with the SEC. We do not undertake an obligation to update our forward-looking statements to reflect future events.

Although we believe that these forward-looking statements are based on reasonable assumptions, you should be aware that many factors could affect our actual results of operations and could cause actual results to differ materially from those expressed in the forward-looking statements. As a result, the foregoing factors should not be construed as exhaustive and should be read together with other cautionary statements included in this and other reports we file with the SEC. For additional information regarding certain factors that may cause our actual results to differ from those expected or anticipated see the information under the caption “Risk Factors” which is located in Item 1A of Part I of this report. We do not undertake any obligation to update our forward-looking statements or risk factors to reflect future events or circumstances, except as otherwise required by law.

ITEM 1A. Risk Factors

You should consider carefully the following risk factors and all other information contained in this Annual Report on Form 10-K and the documents we incorporate by reference in this Annual Report on Form 10-K. Any of the following risks could materially and adversely affect our business financial condition results of operations and cash flows.

The markets in which we operate can be cyclical, and downturns in them may adversely affect the results of our operations.

Some of the markets in which we operate have been, to varying degrees, cyclical and have experienced downturns. A downturn in these markets could occur at any time as a result of events that are industry specific or macroeconomic and in the event of a downturn; we have no way of knowing if, when and to what extent there might be a recovery. Any deterioration in any of the cyclical markets we serve could adversely affect our financial performance and operating results.

At December 31, 2019, Airbus and Boeing had a combined backlog of 13,107 aircraft or over ten years of production at 2019 delivery rates. To the extent any significant deferrals, cancellations or reduction in demand results in decreased aircraft build rates, it would reduce net sales for our Commercial Aerospace products and as a result reduce our operating income. Approximately 68% of our net sales for 2019 were derived from sales to the Commercial Aerospace industry, which includes 87% from Airbus and Boeing aircraft and 13% from regional and business aircraft. Reductions in demand for commercial aircraft or a delay in deliveries could result from many factors, including delays in the startup or ramp-up of new programs, suspension or discontinuation of current programs, such as the current grounding and suspension of production of the Boeing 737 MAX, changes in the propensity for the general public to travel by air (including as a result of terrorist events and any subsequent military response or public health epidemics, including the coronavirus currently impacting China), a significant change in the cost of aviation fuel, a change in technology resulting in the use of alternative materials, consolidation and liquidation of airlines, availability of funding for new aircraft purchases or leases, inventory corrections or disruptions throughout the supply chain and slower macroeconomic growth.

Our content on the A350 is approximately \$4.8 million per plane and it is our largest program as Airbus has reached its projected buildrates of 10 per month. Both Airbus and Boeing have experienced various delays in the start and ramp up of several aircraft programs, including the A380, B787, B747-8, A400M, and A350. In the past, these have delayed our expected growth or our effective utilization of capacity installed for such growth. Future delays in these or other major new customer programs could similarly impact our results.

In addition, our customers continue to emphasize the need for cost reduction or other improvements in contract terms throughout the supply chain. In response to these pressures, we may be required to accept increased risk or face the prospects of margin compression on some products in the future. Where possible, we seek to offset or mitigate the impact of such pressures through productivity and performance improvements, index clauses, hedging and other actions.

A significant decline in business with Airbus, Boeing, Vestas, or other large customers could materially impact our business, operating results, prospects and financial condition.

We have concentrated customers in the Commercial Aerospace and wind energy markets. In the Commercial Aerospace market, approximately 87%, and in the Space & Defense market, approximately 25%, of our 2019 net sales were made to Airbus and Boeing and their related subcontractors. For the years ended December 31, 2019 and December 31, 2018, approximately 39% and 41% of our total consolidated net sales, respectively, were to Airbus, and its related subcontractors and approximately 25% for both years of our total consolidated net sales were to Boeing and its related subcontractors. In the wind energy market, our primary customer is Vestas. Significant changes in the demand for our customers’ end products, program delays, the share of their requirements that is awarded to us or changes in the design or materials used to construct their products could result in a significant loss of business with these customers. The loss of, or significant reduction in, purchases by Airbus, Boeing or Vestas or any of our other large customers could materially impair our business, operating results, prospects and financial condition. The level of purchases by our customers is often affected by events beyond their control, including general economic conditions, demand for their products, disruptions in deliveries, business disruptions, strikes and other factors, including the current grounding of the Boeing 737 MAX by the Federal Aviation Administration and other regulators, which resulted in a suspension of production in January 2020. A prolonged suspension of

production of the Boeing 737 MAX and further delay in its expected return to service could have a material adverse effect on our business, financial condition, results of operations, and cash flows.

A decrease in supply, interruptions at key facilities or an increase in cost of raw materials could result in a material decline in our profitability.

Our profitability depends largely on the price and continuity of supply of raw materials, which may be supplied through a sole source or a limited number of sources. We purchase large volumes of raw materials, such as epoxy and phenolic resins, acrylonitrile, carbon fiber, fiberglass yarn, aluminum foil and aramid paper. Any restrictions on the supply, or an increase in the cost, of our raw materials could significantly reduce our profit margins. Efforts to mitigate restrictions on the supply or price increases of these raw materials by long-term purchase agreements, productivity improvements, hedging or by passing cost increases to our customers may not be successful.

The occurrence of material operational problems, including but not limited to failure of, or interruption to, key equipment or natural disasters, or inability to install, staff and qualify necessary capacity, achievement of planned manufacturing improvements, or inability to meet customer specifications, may have a material adverse effect on the productivity and profitability of a particular manufacturing facility. With respect to certain facilities, such events could have a material effect on our company as a whole.

Reductions in space and defense spending could result in a decline in our net sales.

Space and defense production that has occurred in recent years may not be sustained, individual programs important to Hexcel may be cancelled, production may not continue to grow and the increased demand for composite-intensive programs may not continue. In addition, the production of military aircraft depends upon defense budgets and the related demand for defense and related equipment. Approximately 19% of our net sales in 2019 were to the Space & Defense market of which about 79% were related to military programs in the United States and other countries.

If we are unable to develop new products on a timely basis, it could adversely affect our business and prospects.

We believe that our future success depends, in part, on our ability to develop, on a timely basis, technologically advanced products that meet or exceed appropriate industry standards. Although we believe we have certain technological and other advantages over our competitors, maintaining such advantages will require us to continue investing in research and development and sales and marketing. There can be no assurance that we will be able to make the technological advances necessary to maintain such competitive advantages or that we can recover major research and development expenses.

We have substantial international operations subject to uncertainties which could affect our operating results.

We believe that revenue from sales outside the U.S. will continue to account for a material portion of our total revenue for the foreseeable future. In 2019, 47% of our production and 54% of our customer sales occurred outside of the United States. Additionally, we have invested significant resources in our international operations and we intend to continue to make such investments in the future. Our international operations are subject to numerous risks, including: (a) general economic, political, legal, social and health conditions in the countries where we operate may have an adverse effect on our operations in those countries or not be favorable to our growth strategy, such as the impact of public health epidemics on employees and the global economy, including the coronavirus currently impacting China; (b) the difficulty of enforcing agreements and collecting receivables through some foreign legal systems; (c) foreign customers may have longer payment cycles than customers in the U.S.; (d) cost of compliance with international trade laws of all of the countries in which we do business, including export control laws, relating to sales and purchases of goods and equipment and transfers of technology; (e) tax rates may vary and foreign earnings may be subject to withholding requirements or the imposition of tariffs, exchange controls or other restrictions; (f) governments may adopt regulations or take other actions that would have a direct or indirect adverse impact on our business and market opportunities, including, but not limited to, the exit of the U.K. from the European Union; and (g) the potential difficulty in enforcing our intellectual property rights in some foreign countries, and the potential for the intellectual property rights of others to affect our ability to sell product in certain markets. Any one of these could adversely affect our financial condition and results of operations. With respect to tariffs, implementation of new tariff schemes by various governments could potentially increase the costs of our materials, increase our cost of production, and ultimately increase the landed cost of our products sold from one country into another country. In addition, a significant portion of the 54% of our customer sales that occurred outside of the United States in 2019 occurred in the U.K. and the European Union. We have production facilities within the U.K. that supply customers in the European Union and customers within the U.K. that are supplied by production facilities in the European Union, and any future tariffs or other disruptions to these trade flows related to the exit of the U.K. from the European Union could negatively impact our business. Other potential adverse consequences of the exit of the U.K. from the European Union include global market uncertainty, volatility in currency exchange rates, and increased regulatory complexities.

Fluctuations in currency exchange rates may influence the profitability and cash flows of our business. For example, our European operations sell a majority of the products they produce in U.S. dollars, yet the labor, overhead costs and portions of material costs incurred in the manufacture of those products are primarily denominated in Euros, British pound sterling or U.S. dollars. As a result, the local currency margins of goods manufactured with costs denominated in local currency, yet sold in U.S. dollars, will vary with fluctuations in currency exchange rates, reducing when the U.S. dollar weakens against the Euro and British pound sterling. In addition, the reported U.S. dollar value of the local currency financial statements of our foreign subsidiaries will vary with fluctuations in currency exchange rates. While we enter into currency hedge agreements from time to time to mitigate these types of fluctuations, we cannot remove all fluctuations or hedge all exposures, and our earnings are impacted by changes in currency exchange rates.

We currently do not have political risk insurance in the countries in which we conduct business. While we carefully consider these risks when evaluating our international operations, we cannot provide assurance that we will not be materially adversely affected as a result of such risks.

Our business and operations may be adversely affected by cybersecurity breaches or other information technology system or network intrusions.

We depend heavily on information technology and computerized systems to communicate and operate effectively. We store sensitive data including proprietary business information, intellectual property and confidential employee or other personal data on our servers and databases. Attempts by others to gain unauthorized access to our information technology system have become more sophisticated. These attempts, which might be related to industrial or foreign government espionage, activism or other motivations, include covertly introducing malware to our computers and networks, performing reconnaissance, impersonating authorized users, and stealing, corrupting or restricting our access to data, among other activities. We continue to update our infrastructure, security tools, employee training and processes to protect against security incidents, including both external and internal threats and to prevent their recurrence. While company personnel have been tasked to detect and investigate such incidents, future cybersecurity attacks could still occur and may lead to potential data corruption and exposure of proprietary and confidential information. The unauthorized use of our intellectual property and/or confidential business information could harm our competitive position, reduce the value of our investment in research and development and other strategic initiatives or otherwise adversely affect our business. Any intrusion may also cause operational stoppages, fines, penalties, litigation or governmental investigations and proceedings, diminished competitive advantages through reputational damages and increased operational costs. Additionally, we may incur additional costs to comply with our customers', including the U.S. Government's, increased cybersecurity protections and standards.

We could be adversely affected by environmental and safety requirements.

Our operations require the handling, use, storage and disposal of certain regulated materials and wastes. As a result, we are subject to various laws and regulations pertaining to pollution and protection of the environment, health and safety. These requirements govern, among other things, emissions to air, discharge to waters and the generation, handling, storage, treatment and disposal of waste and remediation of contaminated sites. We have made, and will continue to make, capital and other expenditures in order to comply with these laws and regulations. These laws and regulations are complex, change frequently and could become more stringent in the future.

We have been named as a "potentially responsible party" under Superfund or similar state laws at sites requiring clean up. These laws generally impose liability for costs to investigate and remediate contamination without regard to fault. Under certain circumstances liability may be joint and several, resulting in one responsible party being held responsible for the entire obligation. Liability may also include damages to natural resources. We have incurred and likely will continue to incur expenses to investigate and clean up certain of our existing and former facilities, for which we believe we have adequate reserves. The ongoing operation of our manufacturing plants also entails environmental risks, and we may incur material costs or liabilities in the future which could adversely affect us. Although most of our properties have been the subject of environmental site assessments, there can be no assurance that all potential instances of soil and groundwater contamination have been identified, even at those sites where assessments have been conducted. Accordingly, we may discover previously unknown environmental conditions and the cost of remediating such conditions may be material. See "Legal Proceedings" below and Note 15 to the consolidated financial statements included elsewhere in this Annual Report on Form 10-K.

In addition, we may be required to comply with evolving environmental, health and safety laws, regulations or requirements that may be adopted or imposed in the future or to address newly discovered information or conditions that require a response. In particular, climate change is receiving increased attention worldwide, which has led to significant legislative and regulatory efforts to limit greenhouse gas emissions. The U.S. Congress has considered climate change-related legislation and may review the issue in the near future. Specific policy measures could include cap and trade provisions or a carbon tax. The European Union has instituted the Greenhouse Gas Emission Trading System ("EU-ETS"). Our manufacturing plants use energy, including electricity and natural gas, and some of our plants emit amounts of greenhouse gas that may in the future be affected by these legislative and regulatory efforts. Potential consequences could include increased energy, transportation and raw material costs and may require the Company to make additional investments in its facilities and equipment or limit our ability to grow.

Acquisitions, divestitures, mergers, business combinations or joint ventures may entail certain operational and financial risks.

Over the past several years, we have completed several strategic acquisitions of complementary manufacturing companies, as well as strategic investments in companies. We expect to continue to explore complementary mergers, acquisitions, investments and joint ventures and may also pursue divestitures of business lines that do not fit with our core strategy. We may also engage in further vertical integration. We may face competition for attractive targets and may not be able to source appropriate acquisition targets at prices acceptable to us, if at all. In addition, these types of transactions may require significant liquidity, which may not be available on terms favorable to us, or at all.

There can be no assurance that we will realize the intended benefits from any such transactions. The process of integrating acquired businesses into our existing operations may result in unforeseen operating difficulties and may require additional financial resources and attention from management that would otherwise be available for the ongoing development or expansion of our existing operations. Even if successfully integrated, the acquired business may not achieve the results we expect or produce expected benefits in the time frame planned.

If we fail to comply with government procurement laws and regulations, we could lose business and be liable for various penalties or sanctions.

We must comply with laws and regulations relating to the formation, administration, and performance of U.S. government contracts, including the government security requirements and government export control laws and regulations. In complying with these laws and regulations, we may incur significant costs, and non-compliance may result in the imposition of fines and penalties, including contractual damages. If we fail to comply with these laws and regulations or if a government audit, review, or investigation uncovers improper or illegal activities, we may be subject to civil penalties, criminal penalties, or administrative sanctions, including suspension or debarment from contracting with the U.S. government.

Risks Relating to the Proposed Merger with Woodward

The consummation of the merger is contingent upon the satisfaction of a number of conditions, including stockholder and regulatory approvals, that may be outside of Hexcel's or Woodward's control and that Hexcel and Woodward may be unable to satisfy or obtain or which may delay the consummation of the merger or result in the imposition of conditions that could reduce the anticipated benefits from the merger or cause the parties to abandon the merger.

Consummation of the merger is contingent upon the satisfaction of a number of conditions, some of which are beyond Hexcel's and Woodward's control, including, among others:

- approval of the merger by Hexcel's and Woodward's stockholders;
- authorization for listing on the New York Stock Exchange or Nasdaq of the shares of Woodward common stock to be issued in the merger, subject to official notice of issuance;
- the receipt of required regulatory approvals;
- effectiveness of the registration statement on Form S-4 for the Woodward common stock to be issued in the merger; and
- the absence of any order, injunction, decree or other legal restraint preventing the completion of the merger or making the completion of the merger illegal.

Each party's obligation to complete the merger is also subject to certain additional customary conditions, including:

- subject to certain exceptions, the accuracy of the representations and warranties of the other party;
- performance in all material respects by the other party of its obligations under the merger agreement.

In addition, Hexcel's obligation to complete the merger is also subject to the receipt of an opinion from its counsel to the effect that the merger will qualify as a "reorganization" within the meaning of Section 368(a) of the Internal Revenue Code, as amended.

These conditions to the closing of the merger may not be fulfilled in a timely manner or at all, and, accordingly, the merger may not be completed. In addition, the parties can mutually decide to terminate the merger agreement at any time, before or after receipt of the requisite approvals by Hexcel's or Woodward's stockholders, or Hexcel or Woodward may elect to terminate the merger agreement in certain other circumstances. If the merger agreement is terminated, either party may be required to pay the other party a termination fee of \$250 million under certain circumstances.

As a condition to granting required regulatory approvals, governmental entities may impose conditions, limitations or costs, require divestitures or place restrictions on the conduct of Hexcel after the closing of the merger. Such conditions or changes and the process of obtaining regulatory approvals could, among other things, have the effect of delaying completion of the merger or of imposing additional costs or limitations on the combined company following the merger, any of which may have an adverse effect on the combined company following the merger.

Hexcel and Woodward may also be subject to lawsuits challenging the merger, and adverse rulings in these lawsuits may delay or prevent the merger from being completed or require Hexcel or Woodward to incur significant costs to defend or settle these lawsuits. Any delay in completing the merger could cause Hexcel not to realize, or to be delayed in realizing, some or all of the benefits that Hexcel expects to achieve if the merger is successfully completed within its expected time frame.

Hexcel may fail to realize all of the anticipated benefits of the merger, or those benefits may take longer to realize than expected. Hexcel may also encounter significant difficulties in integrating with Woodward.

Hexcel and Woodward have operated and, until the completion of the merger, will continue to operate, independently. The success of the merger, including anticipated benefits and cost savings, will depend, in part, on Hexcel and Woodward's ability to successfully integrate their operations in a manner that results in various benefits and that does not materially disrupt existing customer relationships or result in decreased revenues due to loss of customers. The process of integrating operations could result in a loss of key personnel or cause an interruption of, or loss of momentum in, the activities of one or more of the combined company's businesses. Inconsistencies in standards, controls, procedures and policies could adversely affect the combined company. The diversion of management's attention and any delays or difficulties encountered in connection with the merger and the integration of Hexcel's and Woodward's operations could have an adverse effect on the business, financial condition, operating results and prospects of the combined company.

If Hexcel experiences difficulties in the integration process, including those listed above, Hexcel may fail to realize the anticipated benefits of the merger in a timely manner or at all.

While the merger is pending, Hexcel will be subject to business uncertainties and contractual restrictions that could adversely affect its business and operations.

Uncertainty about the effect of the merger on employees, customers and other persons with whom Hexcel or Woodward have a business relationship may have an adverse effect on Hexcel's business, operations and stock price. Existing customers of Hexcel and Woodward could decide to no longer do business with Hexcel, Woodward or the combined company, reducing the anticipated benefits of the merger. Hexcel and Woodward are also subject to certain restrictions on the conduct of their respective businesses while the merger is pending. As a result, certain other projects may be delayed or abandoned and business decisions could be deferred. Employee retention at Hexcel and Woodward may be challenging before completion of the merger, as certain employees may experience uncertainty about their future roles with the combined company, and these retention challenges will require Hexcel to incur additional expenses in order to retain key employees. If key employees depart because of issues relating to the uncertainty and difficulty of integration or a desire not to remain with Hexcel, Woodward or the combined company, the benefits of the merger could be materially diminished.

Hexcel is expected to incur substantial expenses related to the merger and the integration with Woodward.

Both Hexcel and Woodward will incur substantial expenses in connection with the merger and integration. There are a large number of processes, policies, procedures, operations, technologies and systems that must be integrated. While Hexcel has assumed that a certain level of expenses would be incurred, there are many factors beyond Hexcel's control that could affect the total amount or the timing of the integration expenses. Moreover, many of the expenses that will be incurred are, by their nature, difficult to estimate accurately. These expenses could, particularly in the near term, exceed the savings that Hexcel expects to achieve from the elimination of duplicative expenses and the realization of economies of scale. The amount and timing of any charges to earnings as a result of merger or integration expenses are uncertain at present.

ITEM 1B. Unresolved Staff Comments

None.

ITEM 2. Properties

We own and lease manufacturing facilities and sales offices located throughout the United States and in other countries, as noted below. The corporate offices and principal corporate support activities are located in leased facilities in Stamford, Connecticut. Our research and technology administration and principal laboratories are located in Dublin, California; Duxford, England; Les Avenières, France; Salt Lake City, Utah and Decatur, Alabama.

The following table lists our manufacturing facilities by geographic location, related segment, and principal products manufactured. This table does not include manufacturing facilities owned by any of our joint ventures.

Manufacturing Facilities

Facility Location	Segment	Principal Products
United States:		
Amesbury, Massachusetts	Engineered Products	Microwave and RF absorbing composite materials
Burlington, Washington	Engineered Products	Engineered Honeycomb Parts
Casa Grande, Arizona	Composite Materials	Honeycomb and Honeycomb Parts
Decatur, Alabama.....	Composite Materials	PAN Precursor (used to produce Carbon Fibers)
Kent, Washington.....	Engineered Products	Composite structures
Pottsville, Pennsylvania	Engineered Products	Engineered Honeycomb Parts
Salt Lake City, Utah	Composite Materials	Carbon Fibers; Prepregs
Seguin, Texas	Composite Materials	Industrial Fabrics; Specialty Reinforcements
South Windsor, Connecticut	Engineered Products	3D printed parts
Windsor, Colorado	Composite Materials	Prepregs
International:		
Casablanca, Morocco	Engineered Products	Engineered Honeycomb Parts
Dagneux, France	Composite Materials	Prepregs
Duxford, England.....	Composite Materials	Prepregs; Adhesives; Honeycomb and Honeycomb Parts
Illescas, Spain.....	Composite Materials	Carbon Fibers
Leicester, England.....	Composite Materials	Lightweight Multiaxials Fabrics
Les Avenières, France	Composite Materials	Industrial Fabrics; Specialty Reinforcements
Nantes, France.....	Composite Materials	Prepregs
Neumarkt, Austria	Composite Materials	Prepregs
Parla, Spain	Composite Materials	Prepregs
Roussillon, France.....	Composite Materials	PAN Precursor and Carbon Fibers
Stade, Germany	Composite Materials	Prepregs
Tianjin, China.....	Composite Materials	Prepregs
Vert-le-Petit, France	Composite Materials	Pultruded profiles; Prepregs and Adhesives
Welkenraedt, Belgium.....	Engineered Products	Engineered Honeycomb Parts

We lease the land and buildings in Nantes, France; Amesbury, Massachusetts; and South Windsor, Connecticut and the land on which the Tianjin, China; Burlington, Washington and Roussillon, France facilities are located. We also lease portions of the facilities located in Casa Grande, Arizona; Pottsville, Pennsylvania; Parla, Spain; and Leicester, England. We own all other remaining facilities. For further information, refer to “Management’s Discussion and Analysis of Financial Condition and Results of Operations” and to Note 6 to the accompanying consolidated financial statements of this Annual Report on Form 10-K.

ITEM 3. Legal Proceedings

We are involved in litigation, investigations and claims arising out of the normal conduct of our business, including those relating to commercial transactions, environmental, employment and health and safety matters. While it is impossible to predict the ultimate resolution of litigation, investigations and claims asserted against us, we believe, based upon our examination of currently available information, our experience to date, and advice from legal counsel, that, after taking into account our existing insurance coverage and amounts already provided for, the currently pending legal proceedings against us will not have a material adverse impact on our consolidated results of operations, financial position or cash flows.

Environmental Matters

We have been named as a potentially responsible party (“PRP”) with respect to several hazardous waste disposal sites that we do not own or possess, which are included on, or proposed to be included on, the Superfund National Priority List of the U.S. Environmental Protection Agency (“EPA”) or on equivalent lists of various state governments. Because CERCLA allows for joint and several liability in certain circumstances, we could be responsible for all remediation costs at such sites, even if we are one of many PRP’s. We believe, based on the amount and nature of our waste, and the number of other financially viable PRPs, that our liability in connection with such matters will not be material.

Lower Passaic River Study

Hexcel together with approximately 48 other PRPs that comprise the Lower Passaic Cooperating Parties Group (the “CPG”) are subject to a May 2007 Administrative Order on Consent (“AOC”) with the EPA requiring the CPG to perform a Remedial Investigation/Feasibility Study of environmental conditions of a 17-mile stretch of the Passaic River in New Jersey (the “Lower Passaic River”). We were included in the CPG based on our operations at our former manufacturing site in Lodi, New Jersey.

In March 2016, the EPA issued a Record of Decision (“ROD”) setting forth the EPA’s selected remedy for the lower eight miles of the Lower Passaic River at an expected cost ranging from \$0.97 billion to \$2.07 billion. This estimate does not include any costs related to a future remedy for the upper nine miles of the Lower Passaic River. In August 2017, the EPA appointed an independent third party allocation expert to make recommendations on the relative liability of approximately 120 identified non-governmental PRP’s, which may be completed as early as 2020.

In October 2016, pursuant to a settlement agreement with the EPA, Occidental Chemical Corporation (“OCC”), one of the PRPs, commenced performance of the remedial design required by the ROD, reserving its right of cost contribution from all other PRPs. In June 2018, OCC filed suit against approximately 120 parties, including Hexcel, in the U.S. District Court for the District of New Jersey seeking cost recovery and contribution under CERCLA related to the Lower Passaic River. In July 2019, the court granted in part and denied in part the defendants’ motion to dismiss. Discovery for the remaining claims is ongoing. We do not know whether this litigation will impact the EPA’s allocation process or the ultimate outcome of the matter.

The total accrued liability related to this matter was \$2.0 million at December 31, 2019 and \$2.1 million at December 31, 2018. Given the uncertainty associated with many elements of the Superfund process for the Lower Passaic River, the amounts accrued may not be indicative of the amounts for which we will ultimately be responsible.

Omega Chemical Corporation Superfund

We are a PRP at a former Omega Chemical Corporation (“Omega”) chemical waste site in Whittier, California. The PRPs at Omega have established The Omega Chemical Site PRP Organized Group (the “OPOG”), and are currently investigating and remediating soil and groundwater at the site pursuant to a Consent Decree with the EPA. OPOG has attributed approximately either 1.2 % or 2.18% of the waste tonnage sent to the site to Hexcel, based on different sections within the Omega site. In addition, the EPA is investigating the scope of regional groundwater contamination in the vicinity of the Omega site and issued a ROD finding that the OPOG will be required to remediate the regional groundwater contamination in that vicinity as well. As a member of OPOG, Hexcel will incur costs associated with the investigation and remediation of the Omega site and the regional groundwater remedy, though our ultimate liability, if any, in connection with this matter cannot be determined at this time. The total accrued liability relating to potential liability for both the Omega site and regional groundwater remedies was \$0.3 million at both December 31, 2019 and 2018.

ITEM 4. Mine Safety Disclosure

Not applicable.

PART II

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

Hexcel common stock is traded on the New York Stock Exchange under the symbol HXL.

On February 3, 2020, the Board of Directors declared a \$0.17 quarterly dividend. The dividend will be payable to stockholders of record as of February 14, 2020, with a payment date of February 21, 2020. During 2019, 2018 and 2017 the Company repurchased a total of \$143 million, \$358 million and \$151 million of shares, respectively.

On January 31, 2020, there were 487 holders of record of our common stock.

The following chart provides information regarding repurchases of Hexcel common stock:

Period	(a) Total Number of Shares (or Units) Purchased	(b) Average Price Paid per Share (or Unit)	(c) Total Number of Shares (or Units) Purchased as Part of Publicly Announced Plans or Programs	(d) Maximum Number (or Approximate Dollar Value) of Shares (or Units) that May Yet Be Purchased Under the Plans or Programs
October 1 — October 31, 2019	367,442	\$ 76.34	367,442	\$ 289,788,985
November 1 — November 30, 2019	226,093	\$ 76.60	226,093	\$ 272,471,254
December 1 — December 31, 2019	409,839	\$ 74.85	409,839	\$ 241,796,826
Total	1,003,374	\$ 75.79	1,003,374	\$ 241,796,826 (1)

(1) On May 7, 2018, we announced that our Board authorized us to repurchase an additional \$500 million of our outstanding common stock, of which \$241.8 million was still available at December 31, 2019.

ITEM 6. Selected Financial Data

The information required by Item 6 is contained on page 28 of this Annual Report on Form 10-K under the caption “Selected Financial Data” and is incorporated herein by reference.

ITEM 7. Management’s Discussion and Analysis of Financial Condition and Results of Operations

The information required by Item 7 is contained on pages 29 to 38 of this Annual Report on Form 10-K under “Management’s Discussion and Analysis of Financial Condition and Results of Operations” and is incorporated herein by reference.

ITEM 7A. Quantitative and Qualitative Disclosures about Market Risk

The information required by Item 7A is contained under the heading “Market Risks” on pages 38 to 40 of this Annual Report on Form 10-K and is incorporated herein by reference.

ITEM 8. Financial Statements and Supplementary Data

The information required by Item 8 is contained on pages 41 to 80 of this Annual Report on Form 10-K under “Consolidated Financial Statements and Supplementary Data” and is incorporated herein by reference. The Reports of Independent Registered Public Accounting Firms are contained on page 43 to 45 of this Annual Report on Form 10-K under the caption “Reports of Independent Registered Public Accounting Firms” and is incorporated herein by reference.

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

None.

ITEM 9A. Controls and Procedures

Our Chief Executive Officer and Chief Financial Officer have evaluated our disclosure controls and procedures as of December 31, 2019 and have concluded that these disclosure controls and procedures are effective to ensure that information required to be disclosed by us in the reports that we file or submit under the Securities Exchange Act of 1934, as amended, is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms. These disclosure controls and procedures include, without limitation, controls and procedures designed to ensure that information required to be disclosed by us in the reports we file or submit is accumulated and communicated to management, including the Chief Executive Officer and Chief Financial Officer, as appropriate to allow timely decisions regarding required disclosure.

Our Chief Executive Officer and Chief Financial Officer have concluded that there have not been any changes in our internal control over financial reporting during the fourth quarter that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Management's report on our internal control over financial reporting is contained on page 42 of this Annual Report on Form 10-K and is incorporated herein by reference.

ITEM 9B. Other Information

None.

PART III

ITEM 10. Directors, Executive Officers and Corporate Governance

The information required by Item 10 will be incorporated by reference in accordance with Instruction G(3) to Form 10-K no later than 120 days after the end of the Company's fiscal year.

ITEM 11. Executive Compensation

The information required by Item 11 will be incorporated by reference in accordance with Instruction G(3) to Form 10-K no later than 120 days after the end of the Company's fiscal year.

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

The information required by Item 12 will be incorporated by reference in accordance with Instruction G(3) to Form 10-K no later than 120 days after the end of the Company's fiscal year.

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

The information required by Item 13 will be incorporated by reference in accordance with Instruction G(3) to Form 10-K no later than 120 days after the end of the Company's fiscal year.

ITEM 14. Principal Accountant Fees and Services

The information required by Item 14 will be incorporated by reference in accordance with Instruction G(3) to Form 10-K no later than 120 days after the end of the Company's fiscal year.

PART IV

ITEM 15. Exhibits, Financial Statement Schedules

(a) Financial Statements, Financial Statement Schedules and Exhibits

(1) Financial Statements:

Reports of Independent Registered Public Accounting Firms

Consolidated Balance Sheets as of December 31, 2019 and 2018

Consolidated Statements of Operations for each of the three years ended December 31, 2019, 2018, and 2017

Consolidated Statements of Comprehensive Income for each of the three years ended December 31, 2019, 2018 and 2017

Consolidated Statements of Stockholders' Equity for each of the three years ended December 31, 2019, 2018 and 2017

Consolidated Statements of Cash Flows for each of the three years ended December 31, 2019, 2018 and 2017

Notes to the Consolidated Financial Statements

(2) Financial Statement Schedule for the three years ended December 31, 2019, 2018 and 2017:

Schedule II — Valuation and Qualifying Accounts

All other schedules are omitted because they are not applicable or the required information is shown in the financial statements or the 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.

<u>Exhibit No.</u>	<u>Description</u>
2.1**	Agreement and Plan of Merger, dated as of January 12, 2020, by and among Hexcel Corporation, Woodward, Inc. and Genesis Merger Sub, Inc. (incorporated herein by reference to Exhibit 2.1 to the Company's Current Report on Form 8-K dated January 13, 2020).
3.1	Restated Certificate of Incorporation of Hexcel Corporation (incorporated herein by reference to Exhibit 1 to the Company's Registration Statement on Form 8-A dated July 9, 1996, Registration No. 1-08472).
3.2	Certificate of Amendment of the Restated Certificate of Incorporation of Hexcel Corporation (incorporated herein by reference to Exhibit 3.2 to the Company's Annual Report on Form 10-K/A for the fiscal year ended December 31, 2002, filed on March 31, 2003).
3.3	Amended and Restated Bylaws of Hexcel Corporation (incorporated by reference to Exhibit 3 to the Company's Current Report on Form 8-K dated September 23, 2014).
4.1	Indenture, dated as of August 3, 2015, between Hexcel Corporation and U.S. Bank National Association, as Trustee (incorporated by reference to Exhibit 4.1 to the Company's Current Report on Form 8-K dated August 3, 2015).
4.2	First Supplemental Indenture, dated as of August 3, 2015, between Hexcel Corporation and U.S. Bank National Association, as Trustee (incorporated by reference to Exhibit 4.2 to the Company's Current Report on Form 8-K dated August 3, 2015).
4.3	Second Supplemental Indenture, dated as of February 16, 2017, between Hexcel Corporation and U.S. Bank National Association, as Trustee (incorporated by reference to Exhibit 4.1 to the Company's Current Report on Form 8-K dated February 16, 2017).
4.4	Form of Note for 4.700% Senior Notes due 2025 (incorporated by reference to Exhibit 4.2 to the Company's Current Report on Form 8-K dated August 3, 2015).
4.5	Form of Note for 3.950% Senior Notes due 2027 (incorporated by reference to Exhibit 4.1 to the Company's Current Report on Form 8-K dated February 16, 2017).

- 4.6 Description of Hexcel Corporation's Securities Registered Pursuant to Section 12 of the Securities Exchange Act of 1934.
- 10.1** Credit Agreement, dated as of June 20, 2019, by and among Hexcel Corporation, as borrower, the lenders party thereto, Citizens Bank, N.A., as agent for the lenders, Citizens Bank, N.A., BofA Securities, Inc., TD Bank, N.A. and Wells Fargo Securities, LLC, as joint bookrunners and joint lead arrangers, Bank of America, N.A., TD Bank N.A., and Wells Fargo Bank, National Association, as syndication agents, and Goldman Sachs Bank USA, HSBC Bank USA, N.A., JPMorgan Chase Bank, N.A., PNC Bank, National Association, SunTrust Bank and U.S. Bank National Association, as co-documentation agents (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K dated June 20, 2019).
- 10.2* Hexcel Corporation 2013 Incentive Stock Plan, as amended (incorporated herein by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K dated May 10, 2019).
- 10.3* Hexcel Corporation 2003 Incentive Stock Plan, as amended and restated as of May 7, 2009 (incorporated herein by reference to Exhibit 10.4(d) to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2009).
- 10.4* Hexcel Corporation Management Incentive Compensation Plan, as Amended and Restated on December 8, 2016 (incorporated herein by reference to Exhibit 10.6 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2016).
- 10.5* Form of Employee Option Agreement (2014 - 2017) (incorporated herein by reference to Exhibit 10.8 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2016).
- 10.6* Form of Employee Option Agreement (2012 and 2013) (incorporated herein by reference to Exhibit 10.11 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2011).
- 10.7* Form of Performance Based Award Agreement (2017-2018) (incorporated by reference to Exhibit 99.1 to the Company's Current Report on Form 8-K dated January 30, 2017).
- 10.8* Form of Restricted Stock Unit Agreement for Executive Officers (2020).
- 10.9* Form of Performance Based Award Agreement for Executive Officers (2020).
- 10.10* Form of Option Agreement for Executive Officers (2020).
- 10.11* Form of Restricted Stock Unit Agreement for Non-U.S. Executive Officers (2020).
- 10.12* Form of Performance Based Award Agreement for Non-U.S. Executive Officers (2020).
- 10.13* Form of Option Agreement for Non-U.S. Executive Officers (2020).
- 10.14* Restricted Stock Unit Agreement between Hexcel Corporation and Thierry Merlot (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K dated October 25, 2019).
- 10.15* Form of Restricted Stock Unit Agreement, dated February 6, 2020, entered into between Hexcel Corporation and each of Brett Schneider and Colleen Pritchett.
- 10.16* Hexcel Corporation Nonqualified Deferred Compensation Plan, Effective as of January 1, 2005, Amended and Restated as of December 31, 2008 (incorporated herein by reference to Exhibit 99.14 to the Company's Current Report on Form 8-K dated January 7, 2009).
- 10.17* Offer of Employment between Hexcel Corporation and Nick L. Stange dated July 22, 2013 (incorporated herein by reference to Exhibit 10.2 to the Company's Quarterly Report on Form 10-Q for the quarter ended September 30, 2013).
- 10.18* Supplemental Executive Retirement Agreement dated October 28, 2009, between Nick L. Stange and Hexcel Corporation (incorporated herein by reference to Exhibit 99.1 to the Company's Current Report on Form 8-K dated October 28, 2009).
- 10.19* Hexcel Corporation Executive Severance Policy (incorporated herein by reference to Exhibit 10.3 to the Company's Quarterly Report on Form 10-Q for the quarter ended September 30, 2013).
- 10.20* Form of Executive Severance Agreement entered into between Hexcel Corporation and each of Patrick Winterlich and Gail Lehman, dated October 2, 2017 (incorporated herein by reference to Exhibit 99.1 to the Company's Current Report on Form 8-K dated October 6, 2017).
- 10.21* Form of Executive Severance Agreement entered into between Hexcel Corporation and each of Timothy Swords and Brett Schneider dated October 2, 2017 (incorporated herein by reference to Exhibit 99.2 to the Company's Current Report on Form 8-K dated October 6, 2017).

- 10.22* Amended and Restated Executive Severance Agreement between Hexcel Corporation and Robert G. Hennemuth, dated December 31, 2008 (incorporated herein by reference to Exhibit 99.6 to the Company's Current Report on Form 8-K dated January 7, 2009).
- 10.23* Amended and Restated Executive Deferred Compensation Agreement between Hexcel Corporation and Robert G. Hennemuth, dated December 31, 2007 (incorporated herein by reference to Exhibit 99.4 to the Company's Current Report on Form 8-K dated January 7, 2008).
- 10.24* Amendment to the Offer of Employment Letter dated July 22, 2013 between Hexcel Corporation and Nick L. Stanage, dated June 1, 2018 (incorporated herein by reference to Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 2018).
- 10.25* Amendment to the Officer Severance Agreement, dated October 2, 2017, between Hexcel Corporation and Patrick Winterlich, dated June 1, 2018 (incorporated herein by reference to Exhibit 10.2 to the Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 2018).
- 10.26* Amendment to the Officer Severance Agreement, dated October 2, 2017, between Hexcel Corporation and Gail E. Lehman, dated June 1, 2018 (incorporated herein by reference to Exhibit 10.3 to the Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 2018).
- 10.27* Amendment to the Amended and Restated Executive Severance Agreement, dated December 31, 2008, between Hexcel Corporation and Robert G. Hennemuth, dated June 1, 2018 (incorporated herein by reference to Exhibit 10.4 to the Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 2018).
- 10.28* Form of Executive Severance Agreement entered into between Hexcel Corporation and Colleen Pritchett, dated March 20, 2019 (incorporated by reference to Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q for the quarter ended March 31, 2019).
- 10.29* Director Compensation Program, effective October 31, 2019.
- 10.30* Form of Restricted Stock Unit Agreement for Non-Employee Directors (incorporated herein by reference to Exhibit 10.21 to the Company's Annual Report on Form 10-K for the year ended December 31, 2017).
- 10.31* Form of Restricted Stock Unit Agreement for Non-Employee Directors (Annual Grant - 2020).
- 10.32* Form of Restricted Stock Unit Agreement for Non-Employee Directors (Retainer - 2020).
- 10.33* Hexcel Corporation 2016 Employee Stock Purchase Plan (incorporated by reference to Exhibit 4.4 to the Company's Registration Statement on Form S-8, Registration Statement No. 333-211953, filed on June 10, 2016).
- 21 Subsidiaries of the Company.
- 23.1 Consent of Ernst & Young LLP.
- 24 Power of Attorney (included on signature page).
- 31.1 Certification of Chief Executive Officer, Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
- 31.2 Certification of Chief Financial Officer, Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
- 32 Certification of Chief Executive Officer and Chief Financial Officer Pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
- 101.INS Inline XBRL Instance Document: The XBRL Instance Document does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL document.
- 101.SCH Inline XBRL Taxonomy Extension Schema.
- 101.CAL Inline XBRL Taxonomy Extension Calculation Linkbase.
- 101.DEF Inline XBRL Taxonomy Extension Definition Linkbase.
- 101.LAB Inline XBRL Taxonomy Extension Label Linkbase.
- 101.PRE Inline XBRL Taxonomy Extension Presentation Linkbase.
- 104 Cover Page Interactive Data File: the cover page XBRL tags are embedded within the Inline XBRL document and are contained within Exhibit 101.

* Indicates management contract or compensatory plan or arrangement.

** Schedules and exhibits have been omitted pursuant to Regulation S-K, Item 601(a)(5). The Company will provide a copy of any omitted schedule or exhibit to the Securities and Exchange Commission or its staff upon request.

ITEM 16. Form 10-K Summary

None.

SIGNATURES

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

Hexcel Corporation

February 18, 2020
(Date)

/s/ NICK L. STANAGE
Nick L. Stanage
Chairman of the Board of Directors,
Chief Executive Officer and President

KNOWN TO ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints each of Nick L. Stanage, Patrick Winterlich and Gail Lehman, individually, his attorney-in-fact, with the power of substitution, for him or her in any and all capacities, to sign any amendments to this report, and to file the same, with exhibits thereto and other documents in connection therewith, with the Securities and Exchange Commission, hereby ratifying and confirming all that each said attorney-in-fact, or his or her substitute or substitutes, may do or cause to be done by virtue hereof.

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

Signature	Title	Date
<u>/s/ NICK L. STANAGE</u> (Nick L. Stanage)	Chairman of the Board of Directors, Chief Executive Officer and President (Principal Executive Officer)	February 18, 2020
<u>/s/ PATRICK WINTERLICH</u> (Patrick Winterlich)	Executive Vice President and Chief Financial Officer (Principal Financial Officer)	February 18, 2020
<u>/s/ KIMBERLY HENDRICKS</u> (Kimberly Hendricks)	Senior Vice President, Corporate Controller and Chief Accounting Officer (Principal Accounting Officer)	February 18, 2020
<u>/s/ JOEL S. BECKMAN</u> (Joel S. Beckman)	Director	February 18, 2020
<u>/s/ LYNN BRUBAKER</u> (Lynn Brubaker)	Director	February 18, 2020
<u>/s/ JEFFREY C. CAMPBELL</u> (Jeffrey C. Campbell)	Director	February 18, 2020
<u>/s/ CYNTHIA M. EGNOTOVICH</u> (Cynthia M. Egnotovich)	Director	February 18, 2020
<u>/s/ JEFFREY A. GRAVES</u> (Jeffrey A. Graves)	Director	February 18, 2020
<u>/s/ GUY C. HACHEY</u> (Guy C. Hachey)	Director	February 18, 2020

Selected Financial Data

The following table summarizes selected financial data as of and for the five years ended December 31:

(In millions, except per share data)	2019	2018	2017	2016	2015
Results of Operations:					
Net sales	\$ 2,355.7	\$ 2,189.1	\$ 1,973.3	\$ 2,004.3	\$ 1,861.2
Cost of sales	1,715.3	1,608.3	1,421.5	1,439.7	1,328.4
Gross margin	640.4	580.8	551.8	564.6	532.8
Selling, general and administrative expenses	158.7	146.0	151.8	157.6	156.1
Research and technology expenses	56.5	55.9	49.4	46.9	44.3
Other expense (income), net	—	7.7	—	—	—
Operating income	425.2	371.2	350.6	360.1	332.4
Interest expense, net	45.5	37.7	27.4	22.1	14.2
Non-operating expense, net	—	—	—	0.4	—
Income before income taxes and equity in earnings	379.7	333.5	323.2	337.6	318.2
Provision for income taxes	76.8	62.5	42.5	90.3	83.0
Income before equity in earnings	302.9	271.0	280.7	247.3	235.2
Equity in earnings from affiliated companies	3.7	5.6	3.3	2.5	2.0
Net income	\$ 306.6	\$ 276.6	\$ 284.0	\$ 249.8	\$ 237.2
Basic net income per common share	\$ 3.61	\$ 3.15	\$ 3.13	\$ 2.69	\$ 2.48
Diluted net income per common share	\$ 3.57	\$ 3.11	\$ 3.09	\$ 2.65	\$ 2.44
Weighted-average shares outstanding:					
Basic	84.9	87.9	90.6	92.8	95.8
Diluted	85.8	89.0	91.9	94.2	97.2
Financial Position:					
Total assets	\$ 3,128.6	\$ 2,824.1	\$ 2,780.9	\$ 2,400.6	\$ 2,187.4
Working capital	\$ 382.3	\$ 349.1	\$ 394.6	\$ 335.1	\$ 341.2
Long-term notes payable and capital lease obligations	\$ 1,050.6	\$ 947.4	\$ 805.6	\$ 684.4	\$ 576.5
Dividends per share of common stock	\$ 0.64	\$ 0.55	\$ 0.47	\$ 0.44	\$ 0.40
Stockholders' equity	\$ 1,446.1	\$ 1,322.0	\$ 1,495.1	\$ 1,244.9	\$ 1,179.6
Other Data:					
Depreciation and amortization	\$ 141.7	\$ 123.1	\$ 104.5	\$ 93.3	\$ 76.4
Accrual basis capital expenditures	\$ 191.0	\$ 179.1	\$ 284.4	\$ 320.2	\$ 289.0
Shares outstanding at year-end, less treasury stock	83.6	84.8	89.6	91.4	93.5

MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

Following is management's discussion and analysis of the Company's financial condition and results of operations for the year ended December 31, 2019, and comparison to the year ended December 31, 2018 when relevant.

On January 12, 2020, we entered into a definitive merger agreement with Woodward, Inc. to combine in an all stock merger of equals, pursuant to which Hexcel shareholders will receive a fixed exchange ratio of 0.625 shares of Woodward common stock for each share of Hexcel common stock, and Woodward shareholders will continue to own the same number of shares of common stock in the combined company as they do immediately prior to the closing. The exchange ratio is consistent with the 30-day average share prices of both companies. Upon completion of the merger, existing Woodward shareholders will own approximately 55%, and existing Hexcel shareholders will own approximately 45%, of the combined company on a fully diluted basis. The transaction is subject to approval by Woodward and Hexcel shareholders and the satisfaction of customary closing conditions and regulatory approvals. Woodward and Hexcel expect to complete the transaction in the third quarter of 2020.

For discussion and analysis of financial condition and results of operations for 2018 compared to 2017 refer to Part II, Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations in our 2018 Annual Report on Form 10-K, filed with the SEC on February 6, 2019, which is incorporated by reference into this Management's Discussion and Analysis of Financial Condition and Results of Operations.

Business Overview

(In millions, except per share data)	Year Ended December 31,	
	2019	2018
Net sales	\$ 2,355.7	\$ 2,189.1
Gross margin %	27.2%	26.5%
Other operating expense (income)	\$ —	\$ 7.7
Operating income	\$ 425.2	\$ 371.2
Operating income %	18.0%	17.0%
Interest expense, net	\$ 45.5	\$ 37.7
Provision for income taxes	\$ 76.8	\$ 62.5
Equity in earnings from investments in affiliated companies	\$ 3.7	\$ 5.6
Net income	\$ 306.6	\$ 276.6
Diluted net income per common share	\$ 3.57	\$ 3.11

Reconciliations to adjusted operating income, adjusted net income, adjusted diluted net income per share and free cash flow are provided below:

(In millions)	Year Ended December 31,	
	2019	2018
GAAP operating income	\$ 425.2	\$ 371.2
Other operating expense (1)	—	7.7
Adjusted operating income (Non-GAAP)	\$ 425.2	\$ 378.9

(In millions, except per diluted share data)	Year Ended December 31,					
	2019			2018		
	Net Income	EPS	Tax Rate %	Net Income	EPS	Tax Rate %
GAAP net income	\$ 306.6	\$ 3.57	20.2	\$ 276.6	\$ 3.11	18.8
Restructuring expense (1)	—	—	—	5.4	0.06	—
Tax benefits (2)	(3.0)	(0.03)	0.8	(4.7)	(0.05)	1.4
New tax law (3)	—	—	—	(6.2)	(0.07)	1.8
Adjusted net income (Non-GAAP)	\$ 303.6	\$ 3.54	21.0	\$ 271.1	\$ 3.05	22.0

(In millions)	Year Ended December 31,	
	2019	2018
Net cash provided by operating activities	\$ 491.1	\$ 421.4
Less: Capital expenditures	(204.1)	(184.1)
Free cash flow (Non-GAAP)	\$ 287.0	\$ 237.3

- (1) Other operating expense in 2018 was a restructuring charge at one of our European facilities.
- (2) The year ended December 31, 2019 benefited primarily from tax credits identified in the third quarter of \$3.0 million. The year ended December 31, 2018 included benefits of \$4.7 million related to the release of reserves for uncertain tax positions and the release of a valuation allowance in a foreign jurisdiction.
- (3) The year ended December 31, 2018 included benefits of a \$6.2 million tax accounting method change.

The Company uses non-GAAP financial measures, including sales and expenses measured in constant dollars (prior year sales and expenses measured at current year exchange rates); operating income, net income and earnings per share adjusted for items included in operating expense and non-operating expenses; the effective tax rate adjusted for certain out of period items; and free cash flow. Management believes these non-GAAP measures are meaningful to investors because they provide a view of Hexcel with respect to ongoing operating results and comparisons to prior periods. These adjustments represent significant charges or credits that we believe are important to an understanding of Hexcel's overall operating results in the periods presented. Such non-GAAP measurements are not determined in accordance with generally accepted accounting principles and should not be viewed in isolation or as an alternative to or substitute for GAAP measures of performance. Our calculation of these measures may not be comparable to similarly titled measures used by other companies, and the measures exclude financial information that some may consider important in evaluating our performance.

Business Trends

The Company had total sales in 2019 of \$2.4 billion, a 7.6% (8.6% in constant currency) increase as compared to 2018. We had sales increases across all of our markets as Commercial Aerospace sales increased 4.8%, Space & Defense sales 20.2% and Industrial sales 6.5% from 2018. The Commercial Aerospace market represents 68% of our sales, followed by Space & Defense at 19% and Industrial at 13%.

- In 2019, our Commercial Aerospace sales increased by 4.8% (5.1% in constant currency). Sales to Airbus and Boeing and their subcontractors, which comprised 87% of our Commercial Aerospace sales, increased about 3.6% as a result of narrow-body build rate increases and the completion of the transition to the latest generation platforms with higher shipset values and growth in the A350 and B787 programs; tempered by reduced production rates for the 737 MAX. Sales for the Airbus and Boeing legacy aircraft declined about 30% driven by declines in legacy narrowbody production. Almost all of our Commercial Aerospace sales are for new aircraft production as we have only nominal aftermarket sales.
- Airbus and Boeing combined deliveries in 2019 were 1,243 aircraft, compared to the previous record of 1,606 aircraft in 2018 as deliveries of the 737 MAX were halted in March 2019 due to the grounding of the plane by aviation authorities. The demand for new commercial aircraft is principally driven by two factors. The first is airline passenger traffic (measured by revenue passenger miles) and the second is the replacement rate for existing aircraft. The IATA estimates 2019 revenue passenger miles were 4.5% higher than 2018. Combined orders for Airbus and Boeing in 2019 were 822 planes, compared to 1,640 orders for 2018 reflecting the grounding of the 737 MAX. Backlog at the end of 2019 was 13,107 planes, or ten years of backlog at the 2019 delivery pace, which was unusually low as a result of the grounding of the 737 MAX.
- Overall the Commercial Aerospace industry continues to utilize a greater proportion of advanced composite materials with each new generation of aircraft. The A350 has about 53% composite content by weight. As of December 31, 2019, Airbus has 579 orders in backlog for the A350, which had its first customer delivery in December 2014. The B787 has more than 50% composite content by weight, including composite wings and fuselage, compared to the 11% composite content used in the construction of its B777 aircraft and 6% for the B767 the aircraft it is primarily replacing. The B787 entered into service in 2011 and Hexcel averages about \$1.4 million of content per plane. As of December 31, 2019, Boeing had a backlog of 546 orders for its B787 aircraft. Both Airbus and Boeing have introduced new versions of their narrow-body planes that have new composite-rich engines. Airbus's A320neo had its first customer delivery in January 2016, with 551 planes delivered in 2019 and 6,002 orders in backlog at December 31, 2019. Hexcel's content on the A320neo is approximately 50% higher than the prior derivative of the A320. The Boeing B737 MAX entered service in 2017, but was grounded in March 2019 and had 4,545 planes in backlog at December 31, 2019. Hexcel's content on the B737 MAX is approximately 33% higher than the B737. In November 2018, Airbus announced the first delivery of the A330neo, which have new engines. Airbus delivered 41 A330neo's in 2019 and at December 31, 2019 had a backlog of 293 planes. The Boeing B777X, a new version of the B777

with composite wings and new composite-rich engines had its first flight in January 2020. Our sales on these new programs represent an increasing percentage of our Commercial Aerospace sales.

- Other commercial aerospace includes regional business and other commercial aircraft sales, which accounted for 13% of Commercial Aerospace sales, increased approximately 13% compared to 2018, driven by higher business jet sales.
- Our Space & Defense sales were up 20.2% (21.6% in constant currency) from 2018. The increase was driven largely by the ARC acquisition, and strong sales across a broad range of programs, including the F-35 Joint Strike Fighter. Rotorcraft accounted for about 40% of our Space & Defense sales, with more than 89% coming from military programs. New or retrofit rotorcraft programs have an increased reliance on composite materials. In addition, our Engineered Products segment provides specialty value added services such as machining, sub-assembly, and even full blade manufacturing. We are on a wide range of helicopter, military aircraft and space programs, including the F-35, V-22 tilt rotor aircraft, Black Hawk and the A400M military transport. The JSF program, which is our largest program represents less than 25% of revenues in this market. No other program accounts for more than 10% of our revenues in this market.
- Our Industrial sales increased 6.5% (10.6% in constant currency) from 2018. Industrial sales include wind energy, recreation, transportation and general industrial applications. Wind energy is the largest submarket making up more than 50% of the Industrial market. More than 70% of our Industrial sales are outside of the U.S. The wind energy submarket sales increased 20.1% compared to 2018 as various legacy blades with lower composite content transition to longer, higher efficiency blades with higher composite content.

Results of Operations

We have two reportable segments: Composite Materials and Engineered Products. Although these segments provide customers with different products and services, they often overlap within three end business markets: Commercial Aerospace, Space & Defense and Industrial. Therefore, we also find it meaningful to evaluate the sales of our segments through the three end business markets. Further discussion and additional financial information about our segments may be found in Note 18 to the accompanying consolidated financial statements of this Annual Report on Form 10-K.

Net Sales: Consolidated net sales of \$2,355.7 million for 2019 were \$166.6 million, or 7.6%, higher than the \$2,189.1 million of net sales for 2018. The sales increase in 2019 was the result of the ramp up of the new narrow-body programs, growth in A350 and B787 sales, and to a lesser extent, the acquisition of ARC. Had the same U.S. dollar, British pound sterling and Euro exchange rates applied in 2018 as in 2019 (“constant currency”), consolidated net sales for 2019 would have been 8.6% higher than 2018.

Composite Materials: Net sales of \$1,863.1 million for 2019 increased 5.2% from 2018. Commercial Aerospace grew 4.4% primarily from increased production rates and higher composite content on the new narrow-body planes, as well as the A350 and B787 programs. Industrial sales increased 5.5% over 2018 as growth in wind energy coming from the transition to blades with higher composite content was partially offset by softness in the recreational and other industrial markets. The 8.5% growth in Space & Defense sales was driven largely by strong sales for the F-35 Joint Strike Fighter.

Engineered Products: Net sales of \$492.6 million for 2019 increased \$74.0 million from 2018, driven by growth in the A320neo and 737 MAX in the Commercial Aerospace market. The growth in Space & Defense is largely attributable to the ARC acquisition. There are not significant sales to the Industrial market from this segment.

The following table summarizes net sales to third-party customers by segment and end market in 2019 and 2018:

(In millions)	Commercial Aerospace	Space & Defense	Industrial	Total
2019 Net Sales				
Composite Materials	\$ 1,234.6	\$ 318.1	\$ 310.4	\$ 1,863.1
Engineered Products	363.1	126.6	2.9	492.6
Total	\$ 1,597.7	\$ 444.7	\$ 313.3	\$ 2,355.7
	68%	19%	13%	100%
2018 Net Sales				
Composite Materials	\$ 1,183.0	\$ 293.3	\$ 294.2	\$ 1,770.5
Engineered Products	342.0	76.6	—	418.6
Total	\$ 1,525.0	\$ 369.9	\$ 294.2	\$ 2,189.1
	70%	17%	13%	100%

Commercial Aerospace: Net sales to the Commercial Aerospace market increased \$72.7 million or 4.8% to \$1,597.7 million for 2019 as compared to net sales of \$1,525.0 million for 2018.

In 2019, sales for Airbus and Boeing aircraft increased about 3.6% as a result of narrow-body build rate increases and the completion of the transition to the Neo and MAX configurations latest generation platforms with higher shipset values and growth in, as well as the A350 and B787 programs; tempered by reduced production for the 737 MAX. Sales for the Airbus and Boeing legacy aircraft declined about 30% driven by declines in legacy narrowbody production. Sales for the regional and business aircraft market increased 13.2% as compared to 2018, driven by higher business jet sales.

Space & Defense: Net sales of \$444.7 million in 2019 were \$74.8 million higher than 2018. The increase was driven largely by the ARC acquisition and strong sales across a broad range programs, including the JSF. We are on a wide range of helicopter, military aircraft and space programs, including the F-35, V-22 tilt rotor aircraft, Black Hawk and the A400M military transport.

Industrial: Net sales of \$313.3 million for 2019 increased by \$19.1 million from 2018. The wind energy submarket sales increased 20.1% compared to 2018 as the transition to various legacy blades with lower composite content transition to longer, higher efficiency blades with higher composite content. The rest of the Industrial sales were down 11.7% from 2018.

Gross Margin: Gross margin for 2019 was \$640.4 million or 27.2% of net sales as compared to \$580.8 million or 26.5% of net sales in 2018. Execution of our key business initiative of Operational Excellence continues to drive improvements in efficiency and productivity. Exchange rates had a nominal impact on gross margin percentages in 2019 and 2018.

Selling, General and Administrative (“SG&A”) Expenses: SG&A expenses were \$158.7 million for 2019 and \$146.0 million for 2018, or 6.7% of net sales for both years. The increase in spend in 2019 reflects support for our growth including the ARC acquisition.

Research and Technology (“R&T”) Expenses: R&T expenses for 2019 were \$56.5 million or 2.4% of net sales and in 2018 were \$55.9 million or 2.6% of net sales. On a constant currency basis, the expenses in 2019 increased more than 3% over 2018 as we continued to invest in innovative composite products and processes to support customers and next-generation applications.

Other operating expense (income): In 2018 we recorded restructuring expenses of \$7.7 million primarily for employee related costs from an action taken at one of our European facilities to improve operational efficiency and productivity. During 2018, we also recorded \$7.3 million related to an environmental insurance recovery which was offset by the write-down of our investment in Carbon Conversions, Inc. (“CCI”), as well as an additional reserve related to the Lower Passaic River environmental matter.

Operating Income: Operating income for 2019 was \$425.2 million compared with operating income in 2018 of \$371.2 million. Operating income as a percent of sales was 18.0% and 17.0% in 2019 and 2018, respectively. Depreciation and amortization expense for the year increased \$18.6 million over 2018, reflecting the capital investment we made to support our growth.

One of the Company’s performance measures is operating income adjusted for other (income) expense, which is a non-GAAP measure. Adjusted operating income for the year ended December 31, 2018 was \$378.9 million, or 17.3% of net sales as compared to 18.0% in 2019. A reconciliation from operating income to adjusted operating income is provided on page 29.

Almost all of the Company’s sales and costs are either in U.S. dollars, Euros or British Pound sterling, with less than 15% of our sales in Euros or British Pound sterling. In addition, much of our European Commercial Aerospace business has sales denominated in dollars and costs denominated in all three currencies. The net impact is that as the dollar strengthens against the Euro and the British Pound sterling, sales will decrease while operating income will increase. We have an active hedging program to minimize the impact on operating income, but our operating income as a percentage of net sales is affected. Foreign exchange did not have a significant impact on operating margins in either 2019 or 2018.

Operating income for the Composite Materials segment increased \$37.5 million to \$411.3 million from \$373.8 million in 2018 driven by higher Commercial Aerospace and Industrial volume. Operating income for the Engineered Products segment in 2019 increased by \$21.4 million to \$72.0 million, or 14.6% of net sales, compared with 2018 on growth in Space & Defense, including the ARC acquisition, and higher Commercial Aerospace volumes. Excluding a restructuring charge of \$7.7 million, operating income for 2018 was \$58.3 million or 13.9% of net sales. There is a learning curve in this segment for new programs as they either start-up or ramp-up, so margins in Engineered Products will be unfavorably impacted as we transition through programs and work our way up the learning curve in making new parts and structures. Operating income margins for Engineered Products will be less than Composite Materials as it is not nearly as capital intensive. Accordingly, operating income margins for Engineered Products are considered very good returns on invested capital.

We did not allocate corporate net operating expenses of \$58.1 million, and \$53.2 million to segments in 2019 and 2018, respectively.

Interest Expense: Interest expense was \$45.5 million for 2019 and \$37.7 million for 2018 on higher debt levels. Debt increased as we completed \$143.0 million of share buybacks, invested \$163.2 million into business acquisitions and paid a total of \$54.2 million of dividends in 2019. During 2018 we completed \$357.7 million of share repurchases and paid \$48.4 million in dividends.

Provision for Income Taxes: Our 2019 and 2018 tax provision was \$76.8 million and \$62.5 million for an effective tax rate of 20.2% and 18.8%, respectively. The 2019 effective tax rate included \$3.0 million of tax credits identified in the current year. The 2018 effective tax rates included a \$6.2 million tax accounting method change benefit related to the U.S. Tax Cuts and Jobs Act enacted in 2017. The 2018 effective rate also included \$4.7 million of benefits related to the release of valuation allowances in foreign jurisdictions and the release of reserves for uncertain tax positions. Excluding the impact of these discrete items, the 2019 and 2018 effective tax rates were 21.0% and 22.0%, respectively. We believe the adjusted effective tax rate, which is a non-GAAP measure, is meaningful since it provides insight to the tax rate of ongoing operations.

Equity in Earnings from Affiliated Companies: Equity in earnings primarily represents our portion of the earnings from our joint venture in Malaysia.

Net Income: Net income was \$306.6 million or \$3.57 per diluted share for the year ended December 31, 2019 compared to net income of \$276.6 million or \$3.11 per diluted share for the year ended December 31, 2018. During 2019 and 2018 there were other discrete tax benefits of \$3.0 million (\$0.03 diluted EPS) and \$4.7 million (\$0.05 diluted EPS). In 2018 net income and diluted earnings per share included benefits of \$6.2 million or \$0.07 per diluted share from a tax accounting method related to the new U.S. tax law in 2017. Strong sales volume, particularly in the Commercial Aerospace and Space & Defense markets, coupled with good cost control led the growth in earnings in 2019. Also see the table on page 29 for a reconciliation of GAAP net income from continuing operations to our adjusted “Non-GAAP” measure.

Significant Customers

Approximately 39% and 41% of our 2019 and 2018 net sales, respectively, were to Airbus and its subcontractors. Of the 39% of overall sales to Airbus and its subcontractors in 2019, 36% related to Commercial Aerospace market applications and 3% related to Space & Defense market applications. Approximately 25% of each of our 2019 and 2018 net sales were to Boeing and related subcontractors. Of the 25% of overall sales to Boeing and its subcontractors in 2019, 23% related to Commercial Aerospace market applications and 2% related to Space & Defense market applications.

Financial Condition

In 2019, we ended the year with total debt, net of cash, of \$995.7 million and generated \$491.1 million of operating cash resulting in \$287.0 million of free cash flow (cash provided by operating activities less cash paid for capital expenditures). Our cash flow needs for fiscal year 2020 will be funded by our available borrowings under our Senior Unsecured Revolving Facility (the “Facility”) as needed.

We have a portfolio of derivatives related to currencies, interest rates and commodities. We monitor our counterparties and we only use those rated A- or better.

Liquidity

Our cash on hand at December 31, 2019 was \$64.4 million and we had \$687.0 million borrowings available under our Facility. Our total debt as of December 31, 2019 was \$1,060.1 million, an increase of \$103.3 million from the December 31, 2018 balance. The increase in debt primarily reflects the ARC acquisition, \$143.0 million of stock repurchases and \$54.2 million of dividend payments partially offset by the free cash flow generated.

The level of available borrowing capacity fluctuates during the course of the year due to factors including capital expenditures, share repurchases and dividend payments, acquisitions, interest and variable compensation payments, changes to working capital, as well as timing of receipts and disbursements within the normal course of business.

In June 2019, the Company refinanced its Facility, increasing borrowing capacity from \$700 million to \$1 billion. The maturity of the Facility is June 2024. The refinancing provides for a reduction in interest costs, as well as less restrictive covenants. The initial interest rate for the Facility is LIBOR + 1.0%. The interest rate ranges from LIBOR + 0.875% to a maximum of LIBOR + 1.50%, depending upon the better of the Company’s leverage ratio or the credit rating. As of December 31, 2019, total borrowings under the Facility were \$313 million, which approximates fair value. The Facility agreement permits us to issue letters of credit up to an aggregate amount of \$50 million. Outstanding letters of credit reduce the amount available for borrowing under the Facility. As of December 31, 2019, there were no issued letters of credit under the Facility, resulting in undrawn availability under the Facility of

\$687 million. The weighted average interest rate for the Facility was 3.93% for the year ended December 31, 2019. The Facility agreement contains financial and other covenants, including, but not limited to customary restrictions on the incurrence of debt by our subsidiaries and the granting of liens, as well as the maintenance of an interest coverage ratio and a leverage ratio. As defined in the Facility agreement, we are required to maintain a minimum interest coverage ratio of 3.50 (based on the ratio of earnings before interest tax depreciation and amortization, “EBITDA”, to interest expense) and may not exceed a maximum leverage ratio of 3.75 (based on the ratio of total debt to EBITDA) with a step up to 4.25 allowed following certain acquisitions. In addition, the Facility agreement contains other customary terms and conditions such as representations and warranties, additional covenants and events of default. The conditions and covenants related to the senior notes are less restrictive than those of our Facility. As of December 31, 2019, we were in compliance with all debt covenants.

In 2017, the Company issued \$400 million in aggregate principal amount of 3.95% Senior Unsecured Notes due in 2027. In 2015, the Company issued \$300 million in aggregate principal amount of 4.7% Senior Unsecured Notes due in 2025. The interest rate on these senior notes may be increased by 0.25% each time a credit rating applicable to the notes is downgraded. The maximum rate is 5.95% and 6.7%, respectively. The effective interest rates on these two note issuances at December 31, 2019 were 4.1% and 4.8%, respectively. The net proceeds of these issuances were initially used to repay, in part, our Facility, as well as for general purposes including share repurchases.

Short-term liquidity requirements consist primarily of normal recurring operating expenses and working capital needs, capital expenditures, acquisition costs, dividend payments and debt service requirements. We expect to meet our short-term liquidity requirements through net cash from operating activities, cash on hand and, if necessary, our Facility. As of December 31, 2019, long-term liquidity requirements consist primarily of obligations under our long-term debt obligations. We do not have any significant required debt repayments until June 2024 when the Facility expires.

In 2016, we also entered into a €60 million (\$67.4 million) term loan (“Euro loan”). The loan had two tranches of which the first tranche for €25 million, had a rate of +1.2% Euribor and a final maturity date of June 30, 2023. The second tranche for €35 million had a rate of Euribor +1.25% and a final maturity date of June 30, 2024. There was a zero percent floor on the Euribor. The loans were payable in annual installments, beginning on June 30, 2017. We had \$50.4 million (€44.9 million) outstanding under this loan at December 31, 2019. The Company repaid and terminated the Euro loan in January 2020.

Operating Activities: We generated \$491.1 million in cash from operating activities during 2019, an increase of \$69.7 million from 2018 primarily reflecting lower working capital usage attributable to strong cash collections.

Investing Activities: Cash used for investing activities, primarily for capital expenditures, was \$367.3 million in 2019 compared to \$187.5 million in 2018. 2019 includes \$163.2 million for the ARC acquisition.

Financing Activities: Financing activities were a use of cash of \$91.4 million in 2019 as compared to \$257.3 million in 2018. This lower cash usage in 2019 was primarily due to lower share repurchases. In 2019 and 2018, we repurchased \$143.0 million, and \$357.7 million of common stock, respectively. We paid \$54.2 million and \$48.4 million in dividends in 2019 and 2018, respectively.

In May 2018, our Board authorized the repurchase of \$500 million of the Company’s stock (“2018 Repurchase Plan”). In February 2017, our Board authorized the repurchase of a \$300 million of the Company’s stock (“2017 Repurchase Plan”). During 2019 and 2018, the Company spent \$143.0 million and \$357.7 million, respectively, to repurchase common stock. The 2018 repurchases included \$242.5 million to complete the 2017 Repurchase Plan. At December 31, 2019, we have \$241.8 million remaining under the 2018 Repurchase Plan.

Financial Obligations and Commitments: We had \$9.5 million of current debt maturities as of December 31, 2019. The next significant scheduled debt maturity will not occur until 2024, the year the Facility matures. In addition, certain sales and administrative offices, data processing equipment and manufacturing equipment, land and facilities are leased under operating leases.

Total letters of credit issued and outstanding were \$1.7 million as of December 31, 2019. These letters of credit were not issued under the Facility.

The following table summarizes the scheduled maturities as of December 31, 2019 of financial obligations and expiration dates of commitments for the years ended 2020 through 2024 and thereafter.

(In millions)	2020	2021	2022	2023	2024	Thereafter	Total
Senior unsecured credit facility due 2024	\$ —	\$ —	\$ —	\$ —	\$ 313.0	\$ —	\$ 313.0
4.7% senior notes due 2025	—	—	—	—	—	300.0	300.0
3.95% senior notes due 2027	—	—	—	—	—	400.0	400.0
Euro term loan	8.9	8.9	8.9	13.8	9.9	—	50.4
Capital lease and other	0.6	0.6	0.5	—	—	—	1.7
Subtotal	\$ 9.5	\$ 9.5	\$ 9.4	\$ 13.8	\$ 322.9	\$ 700.0	\$ 1065.1
Operating leases	12.9	11.3	9.4	8.6	7.7	29.5	79.4
Total financial obligations	\$ 22.4	\$ 20.8	\$ 18.8	\$ 22.4	\$ 330.6	\$ 729.5	\$ 1,144.5
Letters of credit	1.7	—	—	—	—	—	1.7
Interest payments	39.8	39.3	38.9	38.7	34.3	41.3	232.3
Estimated benefit plan contributions	6.9	10.9	8.4	7.9	21.1	41.0	96.2
Other (a)	0.6	—	—	—	—	1.9	2.5
Total commitments	\$ 71.4	\$ 71.0	\$ 66.1	\$ 69.0	\$ 386.0	\$ 813.7	\$ 1,477.2

(a) Other represents estimated spending for environmental matters at known sites.

As of December 31, 2019, we had \$18.1 million of unrecognized tax benefits. This represents tax benefits associated with various tax positions taken, or expected to be taken, on domestic and international tax returns that have not been recognized in our financial statements due to uncertainty regarding their resolution. The resolution or settlement of these tax positions with the taxing authorities is at various stages. Additionally, included at December 31, 2019 is \$11.3 million in liabilities associated with the deemed repatriation transition tax as a result of the Tax Cuts and Jobs Act (“the Act”). The Act permits the Company to pay the net tax liability interest free over a period of up to eight years.

For further information regarding our financial obligations and commitments, see Notes 5, 6, 7 and 15 to the accompanying consolidated financial statements of this Annual Report on Form 10-K.

Critical Accounting Policies and Estimates

Our consolidated financial statements are prepared based upon the selection and application of accounting principles generally accepted in the United States of America, which require us to make estimates and assumptions about future events that affect amounts reported in our financial statements and accompanying notes. Future events and their effects cannot be determined with absolute certainty. Therefore, the determination of estimates requires the exercise of judgment. Actual results could differ from those estimates, and any such differences may be significant to the financial statements. The accounting policies below are those we believe are the most critical to the preparation of our financial statements and require the most difficult, subjective and complex judgments. Our other accounting policies are described in the accompanying notes to the consolidated financial statements of this Annual Report on Form 10-K.

Deferred Tax Assets and Liabilities

As of December 31, 2019, we had \$133.9 million in net deferred tax liabilities consisting of deferred tax assets of \$119.1 million offset by deferred tax liabilities of \$208.3 million and a valuation allowance of \$44.7 million. As of December 31, 2018, we had \$112.6 million in net deferred tax liabilities consisting of deferred tax assets of \$115.0 million offset by deferred tax liabilities of \$178.8 million and a valuation allowance of \$48.8 million.

The valuation allowance as of December 31, 2019 relates primarily to certain net operating loss carryforwards of our foreign subsidiaries for which we have determined, based upon historical results and projected future book and taxable income levels, that a valuation allowance should continue to be maintained.

The determination of the required valuation allowance and the amount, if any, of deferred tax assets to be recognized involves significant estimates regarding the timing and amount of reversal of taxable temporary differences, future taxable income and the implementation of tax planning strategies. In particular, we are required to weigh both positive and negative evidence in determining whether a valuation allowance is required. Positive evidence would include, for example, a strong earnings history, an event that will increase our taxable income through a continuing reduction in expenses, and tax planning strategies indicating an ability to realize deferred tax assets. Negative evidence would include, for example, a history of operating losses and losses expected in future years.

Uncertain Tax Positions

We had unrecognized tax benefits of \$18.1 million at December 31, 2019, of which \$6.0 million, if recognized, would impact our annual effective tax rate. In addition, we recognize interest accrued related to unrecognized tax benefits as a component of interest expense and penalties as a component of income tax expense in the consolidated statements of operations. The Company did not recognize any interest expense or penalties related to the above unrecognized tax benefits in 2019 and 2018. The Company had accrued interest of approximately \$0.2 million as of December 31, 2019 and 2018. During 2018 we reversed \$0.6 million of accrued interest related to unrecognized tax benefits.

We are subject to taxation in the U.S. and various states and foreign jurisdictions. Foreign and U.S. state jurisdictions have statutes of limitations generally ranging from 3 to 5 years. Years in major jurisdictions that remain open to examination are the U.S. (2015 onward), Austria (2016 onward), Belgium (2013 onward), France (2016 onward), Spain (2013 onward) and the U.K. (2017 onward). We are currently under examination in the U.S. and certain foreign tax jurisdictions.

As of December 31, 2019, we had uncertain tax positions for which it is reasonably possible that amounts of unrecognized tax benefits could significantly change over the next year. These uncertain tax positions relate to our tax returns from 2011 onward, some of which are currently under examination by certain U.S. and European tax authorities. The Company believes it is reasonably possible that the total amount of unrecognized tax benefits as of December 31, 2019 may decrease in the range of approximately \$4.2 million to \$4.4 million in the fiscal year ending December 31, 2020. This possible decrease relates primarily to audit settlements and the expiration of statutes of limitation.

Retirement and Other Postretirement Benefit Plans

We maintain qualified defined benefit retirement plans covering certain current and former European employees, as well as nonqualified defined benefit retirement plans and retirement savings plans covering certain eligible U.S. and European employees, and participate in a union sponsored multi-employer pension plan covering certain U.S. employees with union affiliations. In addition, we provide certain postretirement health care and life insurance benefits to eligible U.S. retirees.

Under the retirement savings plans, eligible U.S. employees can contribute up to 75% of their compensation to an individual 401(k) retirement savings account. We make matching contributions equal to 50% of employee contributions, not to exceed 3% of employee compensation.

We have defined benefit retirement plans in the United Kingdom, Belgium, France and Austria covering certain employees of our subsidiaries in those countries. The defined benefit plan in the United Kingdom (the "U.K. Plan"), the largest of the European plans, was terminated in 2011. As of December 31, 2019, 27% of the total assets in the U.K. Plan were invested in diversified growth funds, 13% were invested in equities and the balance in a combination of bond, liability driven and fixed income investments. Equity investments and growth fund investments are made with the objective of achieving a return on plan assets consistent with the funding requirements of the plan, maximizing portfolio return and minimizing the impact of market fluctuations on the fair value of the plan assets. Liability driven investments are made to reduce balance sheet volatility. As a result of an annual review of historical returns and market trends, the expected long-term weighted average rate of return for the U.K. Plan for the 2020 plan year will be 3.2% and 3.0% for the other European plans as a group.

We use actuarial models to account for our pension and postretirement plans, which require the use of certain assumptions, such as the expected long-term rate of return, discount rate, rate of compensation increase, healthcare cost trend rates, and retirement and mortality rates, to determine the net periodic costs of such plans. These assumptions are reviewed and set annually at the beginning of each year. In addition, these models use an "attribution approach" that generally spreads individual events, such as plan amendments and changes in actuarial assumptions, over the service lives of the employees in the plan. That is, employees render service over their service lives on a relatively smooth basis and therefore, the income statement effects of retirement and postretirement benefit plans are earned in, and should follow, the same pattern.

We use our actual return experience, future expectations of long-term investment returns, and our actual and targeted asset allocations to develop our expected rate of return assumptions used in the net periodic cost calculations of our funded European defined benefit retirement plans. Due to the difficulty involved in predicting the market performance of certain assets, there will almost always be a difference in any given year between our expected return on plan assets and the actual return. Following the attribution approach, each year's difference is amortized over a number of future years. Over time, the expected long-term returns are designed to approximate the actual long-term returns and therefore result in a pattern of income and expense recognition that more closely matches the pattern of the services provided by the employees.

We annually set our discount rate assumption for retirement-related benefits accounting to reflect the rates available on high-quality, fixed-income debt instruments. The discount rate assumption used to calculate net periodic retirement related costs for the European funded plans was 2.81% for 2019, 2.80% for 2018 and 2.73% for 2017. The rate of compensation increase, which is another significant assumption used in the actuarial model for pension accounting, is determined by us based upon our long-term plans for such increases and assumed inflation. For the postretirement health care and life insurance benefits plan, we review external data and its historical trends for health care costs to determine the health care cost trend rates. Retirement and mortality rates are based primarily on actual plan experience.

Actual results that differ from our assumptions are accumulated and amortized over future periods and, therefore, generally affect the net periodic costs and recorded obligations in such future periods. While we believe that the assumptions used are appropriate, significant changes in economic or other conditions, employee demographics, retirement and mortality rates, and investment performance may materially impact such costs and obligations.

For more information regarding our pension and other postretirement benefit plans, see Note 7 to the accompanying consolidated financial statements of this Annual Report on Form 10-K.

Long-Lived Assets and Goodwill

We have significant long-lived assets. We review these assets for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. The assessment of possible impairment is based upon our ability to recover the carrying value of the assets from the estimated undiscounted future net cash flows, before interest and taxes, of the related operations. If these cash flows are less than the carrying value of such assets, an impairment loss is recognized for the difference between estimated fair value and carrying value. The measurement of impairment requires estimates of these cash flows and fair value. The calculation of fair value is determined based on discounted cash flows. In determining fair value, a considerable amount of judgment is required to determine discount rates, market premiums, financial forecasts, and asset lives.

In addition, we review goodwill for impairment at the reporting unit level at least annually, and whenever events or changes in circumstances indicate that goodwill might be impaired. We have four reporting units within the Composite Materials segment, each of which are components that constitute a business for which discrete financial information is available and for which appropriate management regularly reviews the operating results. Within the Engineered Products segment, the reporting unit is the segment as it comprises only a single component. In 2019, the Company performed a qualitative assessment and determined that the fair values of our reporting units were not less than their carrying values and that no impairment exists.

Commitments and Contingencies

We are involved in litigation, investigations and claims arising out of the normal conduct of our business, including those relating to commercial transactions, environmental, employment and health and safety matters. We estimate and accrue our liabilities resulting from such matters based upon a variety of factors, including the stage of the proceeding; potential settlement value; assessments by internal and external counsel; and assessments by environmental engineers and consultants of potential environmental liabilities and remediation costs. We believe we have adequately accrued for these potential liabilities; however, facts and circumstances may change, such as new developments, or a change in approach, including a change in settlement strategy or in an environmental remediation plan, or in our existing insurance coverage, that could cause the actual liability to exceed the estimates, or may require adjustments to the recorded liability balances in the future.

Our estimate of liability as a potentially responsible party and our remaining costs associated with our responsibility to remediate the Lower Passaic River in New Jersey and other sites, are accrued in the consolidated balance sheets. As of December 31, 2019 and 2018, our aggregate environmental related accruals were \$2.5 million and \$2.7 million, respectively of which \$0.6 million and \$0.8 million, respectively, were included in current other accrued liabilities, with the remainder included in other non-current liabilities. As related to certain environmental matters, the accruals were estimated at the low end of a range of possible outcomes since no amount within the range is a better estimate than any other amount. If we had accrued, for those sites where we are able to estimate our liability, at the high end of the range of possible outcomes, our accrual would have been \$16 million higher at December 31, 2019 and 2018.

These accruals can change significantly from period to period due to such factors as additional information on the nature or extent of contamination, the methods of remediation required, changes in the apportionment of costs among responsible parties and other actions by governmental agencies or private parties, or the impact, if any, of being named in a new matter.

Environmental remediation reserve activity for the two years ended December 31, 2019 was as follows:

(In millions)	2019	2018
Beginning remediation accrual balance	\$ 2.7	\$ 2.8
Current period expenses	—	0.3
Cash expenditures	(0.2)	(0.4)
Ending remediation accrual balance	\$ 2.5	\$ 2.7
Capital expenditures for environmental matters	\$ 3.6	\$ 6.9

Market Risks

As a result of our global operating and financing activities, we are exposed to various market risks that may affect our consolidated results of operations and financial position. These market risks include, but are not limited to, fluctuations in currency exchange rates, which impact the U.S. dollar value of transactions, assets and liabilities denominated in foreign currencies and fluctuations in interest rates, which impact the amount of interest we must pay on certain debt instruments. Our primary currency exposures are in Europe, where we have significant business activities. To a lesser extent, we are also exposed to fluctuations in the prices of certain commodities, such as electricity, natural gas, aluminum, acrylonitrile and certain chemicals. In addition, we have several contracts with both suppliers and customers that contain pricing adjustments based on the price of oil outside of a specified band.

We attempt to net individual exposures, when feasible, taking advantage of natural offsets. In addition, we employ or may employ interest rate swap agreements, commodity swap agreements, treasury rate lock agreements, cross-currency swap agreements and foreign currency forward exchange contracts for the purpose of hedging certain specifically identified interest rates, commodity and net currency exposures. The use of these financial instruments is intended to mitigate some of the risks associated with fluctuations in interest rates and currency exchange rates, but does not eliminate such risks. We do not use financial instruments for trading or speculative purposes.

Interest Rate Risks

A portion of our long-term debt bears interest at variable rates. From time to time we have entered into interest rate swap agreements to change the underlying mix of variable and fixed interest rate debt. These interest rate swap agreements have modified the percentage of total debt that is exposed to changes in market interest rates. Assuming a 10% favorable and a 10% unfavorable change in the underlying weighted average interest rates of our variable rate debt and swap agreements, interest expense for 2019 of \$45.5 million would have decreased to \$44.7 million and increased to \$46.4 million, respectively.

Interest Rate Swaps

At December 31, 2019 €45 million of interest rate swaps that swap the EURIBOR on our European term loan for a fixed rate at a weighted average of 0.5%. These interest rate swaps were designated as cash flow hedges to floating rate bank loans. The Euro swaps had final maturity dates between June 2023 and June 2024. The fair value of interest rate swap agreements was recorded in other assets or other non-current liabilities with a corresponding amount to other comprehensive income. We terminated these swaps in January 2020 when we repaid the European term loan.

Foreign Currency Exchange Risks

We operate fourteen manufacturing facilities in Europe, Asia and Africa which generated approximately 47% of our 2019 consolidated net sales. Our European business activities primarily involve three major currencies — the U.S. dollar, the British pound sterling, and the Euro. We also conduct business and sell products to customers throughout the world. Most of the sales in these countries are denominated in U.S. dollars and they have local currency expenses. Currency risk for the Asia and Africa locations is not considered material.

In 2019, our European subsidiaries had third-party sales of \$1,064 million of which approximately 70% were denominated in U.S. dollars, 29% were denominated in Euros and 1% were denominated in British pounds sterling. While we seek to reduce the exposure of our European subsidiaries to their sales in non-functional currencies through the purchase of raw materials in the same currency as that of the product sale, the net contribution of these sales to cover the costs of the subsidiary in its functional currency will vary with changes in foreign exchange rates, and as a result, so will vary the European subsidiaries' percentage margins and profitability. For revenues denominated in the functional currency of the subsidiary, changes in foreign currency exchange rates increase or decrease the value of these revenues in U.S. dollars, but do not affect the profitability of the subsidiary in its functional currency. The value of

our investments in these countries could be impacted by changes in currency exchange rates over time, and could impact our ability to profitably compete in international markets.

We attempt to net individual functional currency positions of our various European subsidiaries, to take advantage of natural offsets and reduce the need to employ foreign currency forward exchange contracts. We attempt to hedge some, but not necessarily all, of the net exposures of our European subsidiaries resulting from sales they make in non-functional currencies. The benefit of such hedges varies with time and the foreign exchange rates at which the hedges are set. For example, when the Euro strengthened against the U.S. dollar, the benefit of new hedges placed was much less than the value of hedges they replaced that were entered into when the U.S. dollar was stronger. We seek to place additional foreign currency hedges when the dollar strengthens against the Euro or British pound. We do not seek to hedge the value of our European subsidiaries' functional currency sales and profitability in U.S. dollars. We also enter into short-term foreign currency forward exchange contracts, usually with a term of ninety days or less, to hedge net currency exposures resulting from specifically identified transactions. Consistent with the nature of the economic hedge provided by such contracts, any unrealized gain or loss would be offset by corresponding decreases or increases, respectively, of the underlying transaction being hedged.

We have performed a sensitivity analysis as of December 31, 2019 using a modeling technique that measures the changes in the fair values arising from a hypothetical 10% adverse movement in the levels of foreign currency exchange rates relative to the U.S. dollar with all other variables held constant. The analysis covers all of our foreign currency hedge contracts. The sensitivity analysis indicated that a hypothetical 10% adverse movement in foreign currency exchange rates would have about a \$4.2 million impact on our 2019 operating income. However, it should be noted that over time as the adverse movement (in our case a weaker dollar as compared to the Euro or the British pound sterling) continues and new hedges are layered in at the adverse rate, the impact would be more significant. For example, had we not had any hedges in place for 2019, a 10% adverse movement would have reduced our operating income by about \$31.1 million.

Foreign Currency Forward Exchange Contracts

A number of our European subsidiaries are exposed to the impact of exchange rate volatility between the U.S. dollar and the subsidiaries' functional currencies, being either the Euro or the British pound sterling. We entered into contracts to exchange U.S. dollars for Euros and British pound sterling through June 2022. The aggregate notional amount of these contracts was \$426.9 million and \$416.5 million at December 31, 2019 and 2018, respectively. The purpose of these contracts is to hedge a portion of the forecasted transactions of European subsidiaries under long-term sales contracts with certain customers. These contracts are expected to provide us with a more balanced matching of future cash receipts and expenditures by currency, thereby reducing our exposure to fluctuations in currency exchange rates. For the three years ended December 31, 2019, hedge ineffectiveness was immaterial. Cash flows associated with these contracts are classified within net cash provided by operating activities of continuing operations.

The activity, net of tax, in "accumulated other comprehensive loss" related to foreign currency forward exchange contracts for the years ended December 31, 2019, 2018 and 2017 was as follows:

(In millions)	2019	2018	2017
Unrealized (losses) gains at beginning of period	\$ (10.6)	\$ 8.6	\$ (25.9)
Losses reclassified to net sales	10.1	0.9	8.9
(Decrease) increase in fair value	(7.9)	(20.1)	25.6
Unrealized (losses) gains at end of period	\$ (8.4)	\$ (10.6)	\$ 8.6

Unrealized losses of \$6.7 million recorded in "accumulated other comprehensive income," net of tax of \$2.4 million, as of December 31, 2019 are expected to be reclassified into earnings over the next twelve months as the hedged sales are recorded. The impact of credit risk adjustments was immaterial for the three years ended December 31, 2019.

In addition, non-designated foreign exchange forward contracts are used to hedge balance sheet exposures. The notional amounts outstanding at December 31, 2019 were U.S. \$54.1 million against the Euro and British pound sterling and at December 31, 2018 were U.S. \$17.5 million against the Euro and British pound sterling. Changes in the fair value of these forward contracts are recorded in the consolidated statements of operations and were gains of \$0.4 million, losses of \$4.3 million, and gains of \$17.1 million in 2019, 2018, and 2017, respectively.

Commodity and Utility Price Risks

We have exposure to commodity and utility price risks as a result of volatility in the cost and supply of raw materials and energy, including electricity and natural gas. To minimize the risk, from time to time we enter into fixed price contracts and hedges at certain

of our manufacturing locations for a portion of our expected purchases of raw materials, electricity and natural gas. Although these contracts reduce and hedge the risk to us during the contract period, future volatility in the supply and pricing of energy and raw materials could have an impact on our future consolidated results of operations.

Recently Issued Accounting Standards

Accounting Standards Implemented in 2019

In February 2016, the FASB issued Accounting Standards Update (“ASU”) No. 2016-02, *Leases (Topic 842)*. This standard requires lessees to recognize a right of use asset and lease liability on the balance sheet for all leases, with the exception of leases with a duration of one year or less. We adopted the provisions of this standard on January 1, 2019, using the modified transition method which allows companies to recognize existing leases at the adoption date without requiring comparable presentation. As a result of the adoption of this standard we recognized approximately \$50 million of right of use assets and related liabilities for operating leases that existed prior to January 1, 2019. These right of use assets were recorded in non-current other assets, and the related liabilities were recorded in current accrued liabilities and other non-current liabilities. See Note 6 – Leases, for more details.

Accounting Standards to be Implemented

In August 2018, the FASB issued ASU No. 2018-14, *Compensation—Retirement Benefits—Defined Benefit Plans—General (Subtopic 715-20)*, which amends the current disclosure requirements regarding defined benefit pensions and other post retirement plans, and allows for the removal of certain disclosures, while adding certain new disclosure requirements. This standard is effective for fiscal years beginning after December 15, 2020 and allows for early adoption. We do not expect this new standard to have a significant impact to our disclosures.

In December 2019, the FASB issued ASU No. 2019-12, *Income Taxes (Topic 740): Simplifying the Accounting for Income Taxes* which amends and aims to simplify accounting disclosure requirements regarding a number of topics including: intraperiod tax allocation, accounting for deferred taxes when there are changes in consolidation of certain investments, tax basis step up in an acquisition and the application of effective rate changes during interim periods, among other improvements. This standard is effective for fiscal years beginning after December 15, 2020 and allows for early adoption. We are assessing the impact of this new standard on our consolidated balance sheets, statements of operations and our future disclosures.

Consolidated Financial Statements and Supplementary Data

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Management's Responsibility for Consolidated Financial Statements

Hexcel management has prepared and is responsible for the consolidated financial statements and the related financial data contained in this report. These financial statements, which include estimates, were prepared in accordance with accounting principles generally accepted in the United States of America. Management uses its best judgment to ensure that such statements reflect fairly the consolidated financial position, results of operations and cash flows of the Company.

The Audit Committee of the Board of Directors reviews and monitors the consolidated financial statements and accounting policies of Hexcel. These financial statements and policies are reviewed regularly by management and such financial statements are audited by our independent registered public accounting firm, Ernst & Young LLP. The Audit Committee, composed solely of outside directors, meets periodically, separately and jointly, with management and the independent registered public accounting firm.

Management's Report on Internal Control Over Financial Reporting

Hexcel management is responsible for establishing and maintaining adequate internal control over financial reporting. Internal control over financial reporting is defined in Rules 13a-15(f) under the Securities Exchange Act of 1934, as amended, as a process designed by, or under the supervision of, the company's principal executive and principal financial officers and effected by the company's board of directors, management and other personnel to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles and 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 the assets of the company;
- 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
- 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.

Hexcel management has assessed the effectiveness of our internal control over financial reporting as of December 31, 2019. In making this assessment, management used the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission (COSO) in *Internal Control-Integrated Framework (2013)*. Based on our assessment, management concluded that, as of December 31, 2019, our internal control over financial reporting was effective.

The effectiveness of Hexcel's internal control over financial reporting, as of December 31, 2019, has been audited by Ernst & Young LLP, an independent registered public accounting firm, as stated in its report that appears on page 45.

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors and Stockholders of Hexcel Corporation

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of Hexcel Corporation and subsidiaries (the “Company”) as of December 31, 2019 and 2018, the related consolidated statements of operations, comprehensive income, stockholders’ equity, and cash flows for each of the three years in the period ended December 31, 2019, and the related notes and financial statement schedule listed in the Index at Item 15(a)(2) (collectively referred to as the “consolidated financial statements”). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company at 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 U.S. generally accepted accounting principles.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (“PCAOB”), Hexcel Corporation’s internal control over financial reporting as of December 31, 2019 based on criteria established in *Internal Control-Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) and our report dated February 18, 2020 expressed an unqualified opinion thereon.

Basis for Opinion

These financial statements are the responsibility of the Company’s management. Our responsibility is to express an opinion on the Company’s financial statements based on our audits. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the 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 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 financial statements. We believe that our audits provide a reasonable basis for our opinion.

Critical Audit Matter

The critical audit matter communicated below is a matter arising from the current period audit of the financial statements that was communicated or required to be communicated to the audit committee and that: (1) relates to accounts or disclosures that are material to the financial statements and (2) involved our especially challenging, subjective, or complex judgments. The communication of the critical audit matter does not alter in any way our opinion on the consolidated financial statements, taken as a whole, and we are not, by communicating the critical audit matter below providing a separate opinion on the critical audit matter or on the account or disclosure to which it relates.

Valuation of deferred tax assets

Description of the Matter

At December 31, 2019, the Company had deferred tax assets related to deductible temporary differences and carryforwards of \$74.4 million, which is net of a \$44.7 million valuation allowance. As explained in Note 8 of the consolidated financial statements, the determination of the required valuation allowance and the amount, if any, of deferred tax assets to be recognized involves significant estimates regarding the timing and amount of reversal of taxable temporary differences, future taxable income and the implementation of tax planning strategies.

Management’s analysis of the realizability of its deferred tax assets was significant to our audit because the amounts and disclosures are material to the financial statements and involved subjective estimation and audit judgment.

How We Addressed the Matter in Our Audit

We obtained an understanding, evaluated the design, and tested the operating effectiveness of controls that address the risks of material misstatement relating to the realizability of deferred tax assets, including controls over management's estimates of the timing and amount of reversal of taxable temporary differences, future taxable income and the implementation of tax planning strategies.

Among other audit procedures performed, we evaluated the Company's assessment of the realizability of deferred tax assets and the resultant valuation allowance including management's estimates of future taxable income by jurisdiction. We compared management's estimates of future taxable income with current industry and economic trends, the actual results of prior periods, and other forecasted financial information prepared by the Company. We involved our tax professionals to evaluate the application of tax law, including management's tax planning strategies, in the Company's assessment and the resultant valuation allowance. We tested the Company's scheduling of the timing and amount of reversal of taxable temporary differences. We have evaluated the Company's income tax disclosures included in Note 8 related to the realizability of deferred tax assets and the resultant valuation allowance.

/s/ Ernst & Young LLP

We have served as the Company's auditor since 2016.

Stamford, Connecticut
February 18, 2020

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors and Stockholders of Hexcel Corporation

Opinion on Internal Control over Financial Reporting

We have audited Hexcel Corporation and subsidiaries (the “Company”) internal control over financial reporting as of December 31, 2019, based on criteria established in Internal Control— Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) (the “COSO criteria”). In our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2019, based on the COSO criteria.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (“PCAOB”), the consolidated balance sheets of Hexcel Corporation and subsidiaries (the “Company”) as of December 31, 2019 and 2018, the related consolidated statements of operations, comprehensive income, stockholders’ equity, and cash flows for each of the three years in the period ended December 31, 2019, and the related notes and financial statement schedule listed in the Index at Items 15(a)(2) (collectively referred to as the “financial statements”) of the Company and our report dated February 18, 2020 expressed an unqualified opinion thereon.

Basis for Opinion

The Company’s management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting included in the accompanying Management’s Report on Internal Control over Financial Reporting. Our responsibility is to express an opinion on the Company’s internal control over financial reporting based on our audit. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects.

Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

Definition and Limitations of Internal Control over Financial Reporting

A company’s internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company’s internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company’s assets that could have a material effect on the financial statements.

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

/s/ Ernst & Young LLP

Stamford, Connecticut
February 18, 2020

Hexcel Corporation and Subsidiaries
Consolidated Balance Sheets
As of December 31,

(In millions)	2019	2018
Assets		
Current assets:		
Cash and cash equivalents	\$ 64.4	\$ 32.7
Accounts receivable, net	227.6	260.9
Inventories	333.1	297.8
Contract assets	52.7	50.5
Prepaid expenses and other current assets	27.1	33.9
Total current assets	704.9	675.8
Property, plant and equipment	3,075.1	2,902.1
Less accumulated depreciation	(1,132.3)	(1,025.6)
Property, plant and equipment, net	1,942.8	1,876.5
Goodwill and other intangible assets	280.4	142.3
Investments in affiliated companies	46.5	48.7
Other assets	154.0	80.8
Total assets	<u>\$ 3,128.6</u>	<u>\$ 2,824.1</u>
Liabilities and Stockholders' Equity		
Current liabilities:		
Short-term borrowings	\$ 9.5	\$ 9.4
Accounts payable	157.6	161.9
Accrued compensation and benefits	74.4	75.8
Financial instruments	17.7	9.7
Accrued liabilities	63.4	69.9
Total current liabilities	322.6	326.7
Commitments and contingencies (see Note 15)		
Long-term debt	1,050.6	947.4
Retirement obligations	53.3	42.0
Deferred income taxes	155.7	144.7
Other non-current liabilities	100.3	41.3
Total liabilities	1,682.5	1,502.1
Stockholders' equity:		
Common stock, \$0.01 par value, 200.0 shares authorized, 109.3 shares and 108.5 shares issued at December 31, 2019 and 2018, respectively	1.1	1.1
Additional paid-in capital	829.9	798.3
Retained earnings	1,978.9	1,726.5
Accumulated other comprehensive loss	\$ (118.7)	\$ (108.0)
	2,691.2	2,417.9
Less – Treasury stock, at cost, 25.7 shares and 23.7 shares at December 31, 2019 and 2018, respectively	(1,245.1)	(1,095.9)
Total stockholders' equity	<u>1,446.1</u>	<u>1,322.0</u>
Total liabilities and stockholders' equity	<u>\$ 3,128.6</u>	<u>\$ 2,824.1</u>

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

Hexcel Corporation and Subsidiaries
Consolidated Statements of Operations
For the Years Ended December 31,

(In millions, except per share data)	2019	2018	2017
Net sales	\$ 2,355.7	\$ 2,189.1	\$ 1,973.3
Cost of sales	1,715.3	1,608.3	1,421.5
Gross margin	640.4	580.8	551.8
Selling, general and administrative expenses	158.7	146.0	151.8
Research and technology expenses	56.5	55.9	49.4
Other operating expense	—	7.7	—
Operating income	425.2	371.2	350.6
Interest expense, net	45.5	37.7	27.4
Income before income taxes, and equity in earnings of affiliated companies	379.7	333.5	323.2
Provision for income taxes	76.8	62.5	42.5
Income before equity in earnings of affiliated companies	302.9	271.0	280.7
Equity in earnings from affiliated companies	3.7	5.6	3.3
Net income	\$ 306.6	\$ 276.6	\$ 284.0
Basic net income per common share:	\$ 3.61	\$ 3.15	\$ 3.13
Diluted net income per common share:	\$ 3.57	\$ 3.11	\$ 3.09
Weighted-average common shares:			
Basic	84.9	87.9	90.6
Diluted	85.8	89.0	91.9

Hexcel Corporation and Subsidiaries
Consolidated Statements of Comprehensive Income
For the Years Ended December 31,

(In millions)	2019	2018	2017
Net Income	\$ 306.6	\$ 276.6	\$ 284.0
Currency translation adjustments	(2.6)	(45.5)	99.8
Net unrealized pension and other benefit actuarial (losses) gains and prior service credits (net of tax)	(7.0)	3.1	(3.9)
Net unrealized (losses) gains on financial instruments (net of tax)	(1.1)	(22.2)	33.5
Total other comprehensive (loss) income	(10.7)	(64.6)	129.4
Comprehensive income	\$ 295.9	\$ 212.0	\$ 413.4

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

Hexcel Corporation and Subsidiaries
Consolidated Statements of Stockholders' Equity
For the Years Ended December 31, 2019, 2018 and 2017

(In millions)	Common Stock			Accumulated Other Comprehensive Income (Loss)	Treasury Stock	Total Stockholders' Equity
	Par	Additional Paid-In Capital	Accumulated Retained Earnings			
Balance, December 31, 2016	\$ 1.1	\$ 738.8	\$ 1,254.7	\$ (174.4)	\$ (575.3)	\$ 1,244.9
Net income	—	—	284.0	—	—	284.0
Dividends paid on common stock	—	—	(42.6)	—	—	(42.6)
Change in other comprehensive income – net of tax	—	—	—	129.4	—	129.4
Stock based compensation	—	35.5	—	—	—	35.5
Acquisition of treasury stock	—	—	—	—	(156.1)	(156.1)
Balance, December 31, 2017	\$ 1.1	\$ 774.3	\$ 1,496.1	\$ (45.0)	\$ (731.4)	\$ 1,495.1
Net income	—	—	276.6	—	—	276.6
Dividends paid on common stock	—	—	(48.4)	—	—	(48.4)
Change in other comprehensive income – net of tax	—	—	—	(64.6)	—	(64.6)
Stock based compensation	—	24.0	—	—	—	24.0
Impact of new accounting pronouncements	—	—	2.2	1.6	—	3.8
Acquisition of treasury stock	—	—	—	—	(364.5)	(364.5)
Balance, December 31, 2018	\$ 1.1	\$ 798.3	\$ 1,726.5	\$ (108.0)	\$ (1,095.9)	\$ 1,322.0
Net income	—	—	306.6	—	—	306.6
Dividends paid on common stock	—	—	(54.2)	—	—	(54.2)
Change in other comprehensive income – net of tax	—	—	—	(10.7)	—	(10.7)
Stock based compensation	—	31.6	—	—	—	31.6
Acquisition of treasury stock	—	—	—	—	(149.2)	(149.2)
Balance, December 31, 2019	<u>\$ 1.1</u>	<u>\$ 829.9</u>	<u>\$ 1,978.9</u>	<u>\$ (118.7)</u>	<u>\$ (1,245.1)</u>	<u>\$ 1,446.1</u>

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

Hexcel Corporation and Subsidiaries
Consolidated Statements of Cash Flows
For the Years Ended December 31,

(In millions)	2019	2018	2017
Cash flows from operating activities			
Net income	\$ 306.6	\$ 276.6	\$ 284.0
Reconciliation to net cash provided by operating activities:			
Depreciation and amortization	141.7	123.1	104.5
Amortization of deferred financing costs and debt discount	0.9	1.6	0.7
Deferred income taxes	16.3	29.3	3.8
Restructuring expense, net of payments	(2.5)	7.7	—
Equity in earnings from affiliated companies	(3.7)	(5.6)	(3.3)
Stock-based compensation	18.3	16.2	17.6
Changes in assets and liabilities:			
Decrease (increase) in accounts receivable	36.5	(20.7)	20.2
(Increase) decrease in inventories	(30.4)	(25.2)	2.3
Increase in prepaid expenses and other current assets	(5.8)	(8.6)	(0.1)
Increase (decrease) increase in accounts payable/accrued liabilities	12.5	23.3	(2.1)
Other – net	0.7	3.7	1.1
Net cash provided by operating activities	491.1	421.4	428.7
Cash flows from investing activities			
Capital expenditures	(204.1)	(184.1)	(278.1)
Acquisitions and Investments in affiliated companies	(163.2)	(3.4)	(76.0)
Net cash used for investing activities	(367.3)	(187.5)	(354.1)
Cash flows from financing activities			
Repayments of Euro term loan	(9.0)	(4.2)	(4.1)
Borrowing from senior unsecured credit facility – 2024	581.0	—	—
Repayment of senior unsecured credit facility – 2024	(268.0)	—	—
Borrowing from senior unsecured credit facility – 2021	345.0	752.0	459.0
Repayment of senior unsecured credit facility – 2021	(547.0)	(600.0)	(774.0)
Proceeds from issuance of senior notes	—	—	398.3
Issuance costs related to senior notes	—	—	(3.7)
Proceeds from settlements of treasury locks	—	—	10.0
Proceeds from Euro term loan	—	—	37.4
Change in capital lease obligations	(0.8)	(0.2)	—
Proceeds (repayment) of other debt, net	—	0.2	(0.5)
Issuance costs related to senior credit facility	(2.5)	—	—
Dividends paid	(54.2)	(48.4)	(42.6)
Repurchase of stock	(143.0)	(357.7)	(150.3)
Activity under stock plans	7.1	1.0	12.2
Net cash used for financing activities	(91.4)	(257.3)	(58.3)
Effect of exchange rate changes on cash and cash equivalents	(0.7)	(4.0)	8.6
Net increase (decrease) in cash and cash equivalents	31.7	(27.4)	24.9
Cash and cash equivalents at beginning of period	32.7	60.1	35.2
Cash and cash equivalents at end of period	<u>\$ 64.4</u>	<u>\$ 32.7</u>	<u>\$ 60.1</u>
Supplemental data:			
Accrual basis additions to property, plant and equipment	<u>\$ 191.0</u>	<u>\$ 179.1</u>	<u>\$ 284.4</u>

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

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

Note 1 — Significant Accounting Policies

Nature of Operations

Hexcel Corporation and its subsidiaries (herein referred to as “Hexcel”, “the Company”, “we”, “us”, or “our”), is a leading advanced composites company. We develop, manufacture, and market lightweight, high-performance structural materials, including carbon fibers, specialty reinforcements, prepregs and other fiber-reinforced matrix materials, honeycomb, adhesives, radio frequency/ electromagnetic interference (“RF/EMI”) and microwave absorbing materials, engineered honeycomb and composite structures, for use in Commercial Aerospace, Space & Defense and Industrial Applications. Our products are used in a wide variety of end applications, such as commercial and military aircraft, space launch vehicles and satellites, wind turbine blades, automotive, a wide variety of recreational products and other industrial applications.

We serve international markets through manufacturing facilities, sales offices and representatives located in the Americas, Europe, Asia Pacific, India and Africa. We are also a partner in a joint venture in Malaysia, Aerospace Composites Malaysia Sdn. Bhd. (“ACM”), which manufactures composite structures for commercial aerospace applications.

Principles of Consolidation

The accompanying consolidated financial statements include the accounts of Hexcel Corporation and its subsidiaries after elimination of all intercompany accounts, transactions and profits. At December 31, 2019, we had a 50% equity ownership investment in the joint venture described above and a 25% equity investment in Hexcut Services. These investments are accounted for using the equity method of accounting.

Basis of Presentation

Within the consolidated balance sheet as of December 31, 2018, property, plant and equipment and the related accumulated depreciation have been grossed up to conform to the current year presentation.

Use of Estimates

Preparation of the accompanying consolidated financial statements and related disclosures in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities, disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

Cash and Cash Equivalents

Cash and cash equivalents include cash on hand and all highly liquid investments with an original maturity of three months or less when purchased. Our cash equivalents are held in prime money market investments with strong sponsor organizations which are monitored on a continuous basis.

Inventories

Inventories are stated at the lower of cost or net realizable value, with cost determined using the average cost methods. Inventory is reported at its estimated net realizable value based upon our historical experience with inventory becoming obsolete due to age, changes in technology and other factors. Inventory cost consists of materials, labor, and manufacturing related overhead associated with the purchase and production of inventories.

Property, Plant and Equipment

Property, plant and equipment, including capitalized interest applicable to major project expenditures, is recorded at cost. Asset and accumulated depreciation accounts are eliminated for dispositions, with resulting gains or losses reflected in earnings. Depreciation of plant and equipment is provided generally using the straight-line method over the estimated useful lives of the various assets. The estimated useful lives range from 10 to 40 years for buildings and improvements and from 3 to 25 years for machinery and equipment. Repairs and maintenance are expensed as incurred, while major replacements and betterments are capitalized and depreciated over the remaining useful life of the related asset.

Leases

The Company regularly enters into operating leases for certain buildings, equipment, parcels of land, and vehicles. As of January 1, 2019, we adopted the provisions of Accounting Standards Codification (“ASC”) 842, accounting for leases. Accordingly, we capitalize all agreements with terms for more than one year, where a right of use asset was identified. Generally, amounts capitalized represent the present value of minimum lease payments over the term, and the duration is equivalent to the base agreement, however, management used certain assumptions when determining the value and duration of leases. These assumptions include, but are not limited to, the probability of renewing a lease term, certain future events impacting lease payments, as well as fair values not explicit in an agreement. Such assumptions impacted the duration of many of our building leases, as well as certain of our equipment leases. In addition, we elected certain expedients, such as the election to capitalize lease and non-lease components of an agreement as a single component for purposes of simplicity, with the exception of those related to equipment and machinery.

In determining the lease renewal, management considers the need and ability to substitute a given asset, as well as certain conditions such as related contractual obligations to our customers (i.e. a contractual obligation of a customer requiring certain manufacturing proximities). In determining fair value, management considers the stand alone value of an asset in an ordinary market as well as incurring certain costs to terminate an agreement. Most of our leases do not include variable payments but contain scheduled escalations. Any lease payments tied to certain future indexes are adjusted on a go forward basis as those indexes become known.

Goodwill and Other Intangible Assets

Goodwill represents the excess of the purchase price over the fair value of the identifiable net assets of an acquired business. Goodwill is tested for impairment at the reporting unit level annually, in the fourth quarter, or when events or changes in circumstances indicate that goodwill might be impaired. The Company performed a qualitative assessment (“Step Zero”) and determined that it was more likely than not that the fair values of our reporting units were not less than their carrying values and it was not necessary to perform a quantitative goodwill impairment test.

We amortize the cost of other intangibles over their estimated useful lives unless such lives are deemed indefinite. We have indefinite lived intangible assets which are not amortized but are tested annually for impairment during the fourth quarter of each year, or when events or changes in circumstances indicate the potential for impairment. If the carrying amount of the indefinite lived intangible exceeds the fair value, it is written down to its fair value, which is calculated using a discounted cash flow model.

Impairment of Long-Lived Assets

The Company reviews long-lived assets, including property, plant and equipment and definite-lived intangible assets, for impairment whenever changes in circumstances or events may indicate that the carrying amounts are not recoverable. These indicators include, but are not limited to: a significant decrease in the market price of a long-lived asset, a significant change in the extent or manner in which a long-lived asset is used or its physical condition, a significant adverse change in legal factors or business climate that could affect the value of a long-lived asset, an accumulation of costs significantly in excess of the amount expected for the acquisition or construction of a long-lived asset, a current period operating or cash flow loss combined with a history of losses associated with a long-lived asset and a current expectation that, more likely than not, a long-lived asset will be sold or otherwise disposed of significantly before the end of its previously estimated life.

Software Development Costs

Costs incurred to develop software for internal use are accounted for under ASC 350-40, “*Internal-Use Software*.” All costs relating to the preliminary project stage and the post-implementation/operation stage are expensed as incurred. Costs incurred during the application development stage are capitalized and amortized over the useful life of the software, which ranges from three to ten years. The amortization of capitalized costs commences after the software has been tested and is placed into operations.

Debt Financing Costs

Debt financing costs are deferred and amortized to interest expense over the life of the related debt. We capitalize financing fees related to our revolving credit facility and record them as a non-current asset in our consolidated balance sheets. Financing fees related to our bonds and notes are capitalized and recorded as a non-current contra liability in our consolidated balance sheets. At December 31, 2019 and 2018, deferred financing costs, recorded as a non-current asset were \$3.7 million and \$2.2 million, respectively, and net deferred financing costs recorded as non-current contra liability were \$4.2 million, and \$4.8 million, respectively.

Share-Based Compensation

The fair value of Restricted Stock Units (“RSUs”) is equal to the market price of our stock at date of grant and is amortized to expense ratably over the vesting period. Performance restricted stock units (“PRSUs”) are a form of RSUs in which the number of shares ultimately received depends on the extent to which we achieve a specified performance target. The fair value of the PRSU is based on the closing market price of the Company’s common stock on the date of grant and is amortized straight-line over the total vesting period. A change in the performance measure expected to be achieved is recorded as an adjustment in the period in which the change occurs. We use the Black-Scholes model to calculate the fair value for all stock option grants, based on the inputs relevant on the date granted, such as the market value of our shares, prevailing risk-free interest rate, etc. The value of the portion of the award, after considering potential forfeitures, that is ultimately expected to vest is recognized as expense in our consolidated statements of operations on a straight-line basis over the requisite service periods. The value of RSUs, PRSUs and non-qualifying options awards for retirement eligible employees is expensed on the grant date as they are fully vested.

Currency Translation

The assets and liabilities of international subsidiaries are translated into U.S. dollars at year-end exchange rates, and revenues and expenses are translated at average exchange rates during the year. Cumulative currency translation adjustments are included in “accumulated other comprehensive loss” in the stockholders’ equity section of the consolidated balance sheets.

Revenue Recognition

On January 1, 2018, we adopted ASC 606 “Revenue from contracts with customers”. Revenue is predominately derived from a single performance obligation under long-term agreements with our customers and pricing is fixed and determinable. We have determined that individual purchase orders (“PO”), whose terms and conditions taken with a master agreement, create the ASC 606 contracts which are generally short-term in nature. For those sales, which are not tied to a long-term agreement, we generate a PO that is subject to our standard terms and conditions. Under ASC 606 we applied the five-step approach resulting in revenue being recognized over time for customer contracts that contain a termination for convenience clause (“T for C”) and the products produced don’t have an alternative use. For revenue recognized over time, we estimate the amount of revenue earned at a given point during the production cycle based on certain costs factors such as raw materials and labor, incurred to date, plus a reasonable profit. We believe this method, which is the cost-to-cost input method, best estimates the revenue recognizable for T for C Agreements. All other revenue is recognized at a point in time.

We have elected the following practical expedients allowed under ASC 606:

- Payment terms with our customers which are one year or less, are not considered a performance obligation.
- Shipping and handling fees and costs incurred in connection with products sold are recorded in cost of sales in our consolidated statements of operations and are not considered a performance obligation to our customers.
- Our performance obligations on our orders are generally satisfied within one year from a given reporting date therefore we omit disclosure of the transaction price allocated to remaining performance obligations on open orders.

We adopted ASC 606 using the modified retrospective method, therefore we have not restated our revenues for 2017 that were recognized under ASC 605, which was predominately at a point in time. Prior to adopting ASC 606, our revenue was recognized when persuasive evidence of an arrangement existed, title and risk of loss passed to the customer, the sales price was fixed or determinable, and collectability was reasonable assured. However, from time to time we entered into contractual arrangements for which other specific revenue recognition guidance was applied. Revenues derived from design and installation services were recognized when the service was provided.

Product Warranty

We provide for an estimated amount of product warranty at the point a claim is probable and estimable. This estimated amount is provided by product and based on current facts, circumstances and historical warranty experience.

Research and Technology

Significant costs are incurred each year in connection with research and technology (“R&T”) programs that are expected to contribute to future earnings. Such costs are related to the development and, in certain instances, the qualification and certification of new and improved products and their uses. R&T costs are expensed as incurred.

Income Taxes

We provide for income taxes using the asset and liability approach. Under this approach, deferred income tax assets and liabilities reflect tax net operating loss and credit carryforwards and the tax effects of temporary differences between the carrying amounts of assets and liabilities for financial reporting and income tax purposes. Deferred tax assets require a valuation allowance when it is not more likely than not, based on the evaluation of positive and negative evidence, that the deferred tax assets will be realized. The realization of deferred tax assets is dependent upon the timing and magnitude of future taxable income prior to the expiration of the deferred tax assets' attributes. When events and circumstances so dictate, we evaluate the realizability of our deferred tax assets and the need for a valuation allowance by forecasting future taxable income. Investment tax credits are recorded on a flow-through basis, which reflects the credit in net income as a reduction of the provision for income taxes in the same period as the credit is realized for federal income tax purposes. In addition, we recognize interest accrued related to unrecognized tax benefits as a component of interest expense and penalties as a component of income tax expense in the consolidated statements of operations.

Concentration of Credit Risk

Financial instruments that potentially subject us to significant concentrations of credit risk consist primarily of trade accounts receivable. Two customers and their related subcontractors accounted for approximately 64% of our annual net sales in 2019, 66% in 2018 and 69% in 2017. Refer to Note 18 for further information on significant customers. We perform ongoing credit evaluations of our customers' financial condition but generally do not require collateral or other security to support customer receivables. We establish an allowance for doubtful accounts based on factors surrounding the credit risk of specific customers, historical trends and other financial information. As of December 31, 2019 and 2018 the allowance for doubtful accounts was \$0.6 million, and \$0.3 million, respectively. Bad debt expense was immaterial for all years presented.

Derivative Financial Instruments

We use various financial instruments, including foreign currency forward exchange contracts, commodity and interest rate agreements, to manage our exposure to market fluctuations by generating cash flows that offset, in relation to their amount and timing, the cash flows of certain foreign currency denominated transactions or underlying debt instruments. We mark our foreign exchange forward contracts to fair value. When the derivatives qualify, we designate our foreign currency forward exchange contracts as cash flow hedges against forecasted foreign currency denominated transactions and report the changes in fair value of the instruments in "accumulated other comprehensive loss" until the underlying hedged transactions affect income. We designate our interest rate agreements as fair value or cash flow hedges against specific debt instruments and recognize interest differentials as adjustments to interest expense as the differentials may occur; the fair value of the interest rate swaps is recorded in other assets or other long-term liabilities with a corresponding amount to "accumulated other comprehensive loss". We do not use financial instruments for trading or speculative purposes.

In accordance with accounting guidance, we recognize all derivatives as either assets or liabilities on our consolidated balance sheets and measure those instruments at fair value.

Self-insurance

We are self-insured up to specific levels for certain medical and health insurance and workers' compensation plans. Accruals are established based on actuarial assumptions and historical claim experience, and include estimated amounts for incurred but not reported claims.

New Accounting Standards

Accounting Standards Implemented in 2019

In February 2016, the Financial Accounting Standards Board ("FASB") issued Accounting Standards Update ("ASU") No. 2016-02, *Leases (Topic 842)*. This standard requires lessees to recognize a right of use asset and lease liability on the balance sheet for all leases, with the exception of leases with a duration of one year or less. We adopted the provisions of this standard on January 1, 2019, using the modified transition method which allows companies to recognize existing leases at the adoption date without requiring comparable presentation. As a result of the adoption of this standard we recognized approximately \$50 million of right of use assets and related liabilities for operating leases that existed prior to January 1, 2019. These right of use assets were recorded in non-current other assets, and the related liabilities were recorded in current accrued liabilities and other non-current liabilities. See Note 6 – Leases, for more details.

Accounting Standards to be Implemented

In August 2018, the FASB issued ASU No. 2018-14, *Compensation—Retirement Benefits—Defined Benefit Plans—General (Subtopic 715-20)*, which amends the current disclosure requirements regarding defined benefit pensions and other post retirement plans, and allows for the removal of certain disclosures, while adding certain new disclosure requirements. This standard is effective for fiscal years beginning after December 15, 2020 and allows for early adoption. We do not expect this new standard to have a significant impact to our disclosures.

In December 2019, the FASB issued ASU No. 2019-12, *Income Taxes (Topic 740): Simplifying the Accounting for Income Taxes* which amends and aims to simplify accounting disclosure requirements regarding a number of topics including: intraperiod tax allocation, accounting for deferred taxes when there are changes in consolidation of certain investments, tax basis step up in an acquisition and the application of effective rate changes during interim periods, amongst other improvements. This standard is effective for fiscal years beginning after December 15, 2020 and allows for early adoption. We are assessing the impact of this new standard on our consolidated balance sheets, statements of operations and our future disclosures.

Note 2 — Inventories

(In millions)	December 31,	
	2019	2018
Raw materials	\$ 154.9	\$ 131.4
Work in progress	40.9	43.6
Finished goods	137.3	122.8
Total inventory	<u>\$ 333.1</u>	<u>\$ 297.8</u>

Note 3 — Net Property, Plant and Equipment

(In millions)	December 31,	
	2019	2018
Land	\$ 105.4	\$ 105.0
Buildings	687.6	671.9
Equipment	2,026.9	1,969.7
Construction in progress	249.3	152.0
Finance lease	5.9	3.5
Property, plant and equipment	3,075.1	2,902.1
Less accumulated depreciation	(1,132.3)	(1,025.6)
Net property, plant and equipment	<u>\$ 1,942.8</u>	<u>\$ 1,876.5</u>

Depreciation expense related to property, plant and equipment for the years ended December 31, 2019, 2018 and 2017, was \$134.7 million, \$120.1 million and \$103.5 million, respectively. Capitalized interest of \$12.7 million and \$9.5 million for 2019 and 2018, respectively, was included in construction in progress. Capitalized costs associated with software developed for internal use were not material for 2019 and 2018.

Note 4 — Goodwill and Purchased Intangible Assets

Changes in the carrying amount of gross goodwill and other purchased intangibles for the years ended December 31, 2019 and 2018, by segment, are as follows:

(In millions)	Composite Materials	Engineered Products	Total
Balance as of December 31, 2017	\$ 103.7	\$ 45.0	\$ 148.7
Amortization expense	(2.0)	(0.9)	(2.9)
Currency translation adjustments and other	(3.5)	—	(3.5)
Balance as of December 31, 2018	\$ 98.2	\$ 44.1	\$ 142.3
Amortization expense	(2.0)	(4.9)	(6.9)
Additions	—	145.1	145.1
Currency translation adjustments and other	—	(0.1)	(0.1)
Balance as of December 31, 2019	\$ 96.2	\$ 184.2	\$ 280.4

We performed our annual impairment review of goodwill as of November 30, 2019 and determined that it was more likely than not that the fair values of our reporting are above their carrying values and that no impairment exists. The goodwill and intangible asset balances as of December 31, 2019 include \$9.2 million of indefinite-lived intangible assets, \$81.4 million of a definite-lived intangible asset (net of accumulated amortization of \$14.8 million) and \$189.8 million of goodwill. The increase in goodwill and intangible assets is due to the acquisition of ARC Technologies LLC (“ARC”) as discussed in the acquisitions note. Of the \$189.8 million of goodwill, \$74.4 million is allocated to the Composite Materials segment and \$115.4 million to the Engineered Products segment.

The weighted average remaining life of the finite lived intangible assets is 13 years. Amortization related to the definite lived intangible assets for the next five years and thereafter is as follows:

(In millions)		
2020	\$	7.0
2021		7.0
2022		7.0
2023		6.9
2024		6.6
Thereafter		46.9
Total	\$	81.4

Note 5 – Debt

(In millions)	December 31, 2019	December 31, 2018
Current portion of capital lease	\$ 0.6	\$ 0.3
Current portion of Euro term loan	8.9	9.1
Current portion of debt	9.5	9.4
Non-current portion of Euro term loan	41.5	51.4
Senior unsecured credit facility	313.0	202.0
4.7% senior notes — due 2025	300.0	300.0
3.95% senior notes — due 2027	400.0	400.0
Senior notes — original issue discount	(1.7)	(2.0)
Senior notes — deferred financing costs	(4.2)	(4.8)
Non-current portion of finance leases and other	2.0	0.8
Long-term debt	1,050.6	947.4
Total debt	\$ 1,060.1	\$ 956.8

Senior Unsecured Credit Facility

In June 2019, the Company refinanced its senior unsecured credit facility (“the Facility”), increasing borrowing capacity from \$700 million to \$1 billion. The maturity of the Facility is June 2024. The refinancing provides for a reduction in interest costs, as well as less restrictive covenants. The initial interest rate for the Facility is LIBOR + 1.0%. The interest rate for the revolver at December 31, 2019 is LIBOR + 1.0%. The interest rate ranges from LIBOR + 0.875% to a maximum of LIBOR + 1.50%, depending upon the better of the Company’s leverage ratio or the credit rating. As of December 31, 2019, total borrowings under the Facility were \$313.0 million, which approximates fair value. The Facility agreement permits us to issue letters of credit up to an aggregate amount of \$50 million. Outstanding letters of credit reduce the amount available for borrowing under the Facility. As of December 31, 2019, there were no issued letters of credit under the Facility, resulting in undrawn availability under the Facility of \$687.0 million. The weighted average interest rate for the Facility was 3.93% for the year ended December 31, 2019.

The Facility agreement contains financial and other covenants, including, but not limited to customary restrictions on the incurrence of debt by our subsidiaries and the granting of liens, as well as the maintenance of an interest coverage ratio and a leverage ratio. As defined in the Facility agreement, we are required to maintain a minimum interest coverage ratio of 3.50 (based on the ratio of earnings before interest tax depreciation and amortization, “EBITDA”, to interest expense) and may not exceed a maximum leverage ratio of 3.75 (based on the ratio of total debt to EBITDA) with a step up to 4.25 allowed following certain acquisitions. In addition, the Facility agreement contains other customary terms and conditions such as representations and warranties, additional covenants and events of default.

3.95% Senior Notes

In 2017, the Company issued \$400 million in aggregate principal amount of 3.95% Senior Unsecured Notes due in 2027. The interest rate on these senior notes may be increased by 0.25% each time a credit rating applicable to the notes is downgraded. The maximum rate is 5.95%. The effective interest rate for 2019 was 3.88% inclusive of approximately a 0.25% benefit of treasury locks. The fair value of the senior notes due in 2027 based on quoted prices utilizing Level 2 inputs (as defined in Note 20) was \$416.8 million at December 31, 2019. The balance of unamortized deferred financing costs and debt discount related to the senior notes was \$3.9 million at December 31, 2019 and \$4.4 million at December 31, 2018.

4.7% Senior Notes

In 2015, the Company issued \$300 million in aggregate principal amount of 4.7% Senior Unsecured Notes due in 2025. The interest rate on these senior notes may be increased by 0.25% each time a credit rating applicable to the notes is downgraded. The maximum rate is 6.7% and the rate at December 31, 2019 remained at 4.7%. The conditions and covenants related to the senior notes are less restrictive than those of our Facility. The effective interest rate for 2019 was 4.83%. The fair value of the senior notes based on quoted prices utilizing level 2 inputs was \$323.8 million at December 31, 2019. The balance for unamortized deferred financing costs and debt discount related to the senior notes was \$2.0 million at December 31, 2019 and \$2.4 million at December 31, 2018.

Other Credit Facilities

In June 2016, we also entered into a \$67.4 million European term loan. The loan had two tranches of which the first tranche for €25 million had a rate of Euribor +1.2% and a final maturity date of June 30, 2023. The second tranche for €35 million had a rate of Euribor +1.25% and a final maturity date of June 30, 2024. There was a zero percent floor on the Euribor. The loans were payable in annual installments, that began on June 30, 2017 and beginning on June 30, 2019, respectively. We had \$50.4 million (€44.9 million) outstanding under this loan at December 31, 2019. The Company repaid and terminated the facility in January 2020.

Note 6 — Leases

As of January 1, 2019, we adopted the provisions of ASC 842, accounting for leases. In connection with the adoption of ASC 842 on January 1, 2019 we elected certain practical expedients available under ASC 842-10-65-1 that provide certain concessions to ease the burden of transition, such as the treatment of indirect lease costs, and service contracts which may contain embedded leases.

At December 31, 2019, we had approximately \$66.5 million of right of use assets recorded in non-current other assets, and \$66.5 million of related liabilities, \$53.6 million of which was included in other non-current liabilities with the current portion in accrued liabilities. The weighted average of the remaining lease terms was approximately 9 years. We discount the future lease payments of our leases using the prevailing rates extended to us by our lenders relevant to the period of inception. These rates are comprised of LIBOR plus a stated spread less a component related to collateralization. The rates are relative to the duration of the lease at inception and the country of origin. The weighted average interest rate used in calculating the fair values listed above was 3.0%.

The following table lists the schedule of future undiscounted cash payments related to right of use assets by year:

(In millions)		
2020	\$	12.9
2021		11.3
2022		9.4
2023		8.6
2024		7.7
Thereafter		29.5
Total	\$	79.4

Operating lease expense recognized during the year ended December 31, 2019, 2018 and 2017, was \$15.5 million, \$13.8 million and \$12.0 million and was recorded in cost of goods sold as well as in operating expenses, in our consolidated statements of operations. Expense related to operating leases which have a duration of a year or less were not material. Finance leases at December 31, 2019 were immaterial.

Note 7 — Retirement and Other Postretirement Benefit Plans

We maintain qualified defined benefit retirement plans covering certain current and former European employees, as well as nonqualified defined benefit retirement plans and retirement savings plans covering certain eligible U.S. and European employees, and participate in a union sponsored multi-employer pension plan covering certain U.S. employees with union affiliations. In addition, we provide certain postretirement health care and life insurance benefits to eligible U.S. retirees.

Accounting standards require the use of certain assumptions, such as the expected long-term rate of return, discount rate, rate of compensation increase, healthcare cost trend rates, and retirement and mortality rates, to determine the net periodic costs of such plans. These assumptions are reviewed and set annually at the beginning of each year. In addition, these models use an “attribution approach” that generally spreads individual events, such as plan amendments and changes in actuarial assumptions, over the service lives of the employees in the plan. That is, employees render service over their service lives on a relatively smooth basis and therefore, the income statement effects of retirement and postretirement benefit plans are earned in, and should follow, the same pattern.

We use our actual return experience, future expectations of long-term investment returns, and our actual and targeted asset allocations to develop our expected rate of return assumption used in the net periodic cost calculations of our funded European defined benefit retirement plans. Due to the difficulty involved in predicting the market performance of certain assets, there will be a difference in any given year between our expected return on plan assets and the actual return. Following the attribution approach, each year’s difference is amortized over a number of future years. Over time, the expected long-term returns are designed to approximate the actual long-term returns and therefore result in a pattern of income and expense recognition that more closely matches the pattern of the services provided by the employees.

We annually set our discount rate assumption for retirement-related benefits accounting to reflect the rates available on high-quality, fixed-income debt instruments. The rate of compensation increase for nonqualified pension plans, which is another significant assumption used in the actuarial model for pension accounting, is determined by us based upon our long-term plans for such increases and assumed inflation. For the postretirement health care and life insurance benefits plan, we review external data and its historical trends for health care costs to determine the health care cost trend rates. Retirement and termination rates are based primarily on actual plan experience. The mortality table used for the U.S. plans is based on the RP-2014 White Collar Healthy Annuitant Mortality Table with Improvement Scale MP-2018 and for the U.K. Plan the S2PXA base table with future improvements in line with the CMI 2018 projection model with a long term trend rate of 1.25% p.a.

Actual results that differ from our assumptions are accumulated and amortized over future periods and, therefore, generally affect the net periodic costs and recorded obligations in such future periods. While we believe that the assumptions used are appropriate, significant changes in economic or other conditions, employee demographics, retirement and mortality rates, and investment performance may materially impact such costs and obligations.

U.S. Defined Benefit Retirement Plans

We have nonqualified defined benefit retirement plans covering certain current and former U.S. employees that are funded as benefits are incurred. Under the provisions of these plans, we expect to contribute approximately \$1.4 million in 2020 to cover unfunded benefits.

Multi-Employer Plan

The Company is party to a multi-employer pension plan covering certain U.S. employees with union affiliations. The plan is the Western Metal Industry Pension Fund, (“the Plan”). The Plan’s employer identification number is 91-6033499; the Plan number is 001. In 2019, 2018 and 2017 the Plan reported Hexcel Corporation as being an employer that contributed greater than 5% of the Plan’s total contributions. The expiration date of the collective bargaining agreement is September 30, 2020. The Plan has been listed in “critical status” and has been operating in accordance with a Rehabilitation Plan since 2010. The Plan, as amended under the Rehabilitation Plan, reduced the adjustable benefits of the participants and levied a surcharge on employer contributions. The Company contributed \$2.5 million in 2019, \$2.1 million in 2018 and \$1.9 million in 2017. We expect the Company’s contribution to be about \$2.5 million in 2020 and remain at that level over the remaining term.

U.S. Retirement Savings Plan

Under the retirement savings plan, eligible U.S. employees can contribute up to 75% of their annual compensation to an individual 401(k) retirement savings account. The Company makes matching contributions equal to 50% of employee contributions, not to exceed 3% of employee compensation each year. We also contribute an additional 2% to 4% of each eligible U.S. employee’s salary to an individual 401(k) retirement savings account. This increases the maximum contribution to individual U.S. employee savings accounts to between 5% and 7% per year, before any profit sharing contributions that are made when we meet or exceed certain performance targets that are set annually. These profit sharing contributions are made at the Company’s discretion and are targeted at 3% of an eligible U.S. employee’s pay, with a maximum of 4.5%.

U.S. Postretirement Plans

In addition to defined benefit and retirement savings plan benefits, we also provide certain postretirement health care and life insurance benefits to eligible U.S. retirees. Depending upon the plan, benefits are available to eligible employees who retire after meeting certain age and service requirements and were employed by Hexcel as of February 1996. Our funding policy for the postretirement health care and life insurance benefit plans is generally to pay covered expenses as they are incurred. Under the provisions of these plans, we expect to contribute approximately \$0.5 million in 2020 to cover unfunded benefits.

Non-Qualified Deferred Compensation Plan

Under the deferred compensation plan, eligible U.S. employees may make tax-deferred contributions that cannot be made under the 401(k) Plan because of Internal Revenue Service limitations. We match 50% of a participant’s contributions up to 6% of the participants excess compensation pay as well as provide the same fixed and profit-sharing contributions as provided under the 401(k) plan.

We have elected to fund our deferred compensation obligation through a rabbi trust. The rabbi trust is subject to creditor claims in the event of insolvency, but the assets held in the rabbi trust are not available for general corporate purposes. Amounts in the rabbi trust are invested in a number of funds based on the funds available under our 401(k) plan, other than the Hexcel stock fund. The securities are carried at fair value and are included in other assets on the consolidated balance sheets. We record trading gains and losses in general and administrative expenses on the consolidated statements of income, along with the offsetting amount related to the increase or decrease in deferred compensation to reflect our exposure to liabilities for payment under the deferred plan.

European Defined Benefit Retirement Plans

We have defined benefit retirement plans in the United Kingdom, Belgium, France and Austria covering certain employees of our subsidiaries in those countries. The defined benefit plan in the United Kingdom (the “U.K. Plan”), the largest of the European plans, was terminated in 2011 and replaced with a defined contribution plan. The total assets in the U.K. Plan were held in a variety of investments. Equity investments and growth fund investments are made with the objective of achieving a return on plan assets consistent with the funding requirements of the plan, maximizing portfolio return and minimizing the impact of market fluctuations on the fair value of the plan assets. Liability driven investments are made to reduce balance sheet volatility. As a result of an annual review of historical returns and market trends, the expected long-term weighted average rate of return for the U.K. Plan for the 2020 plan year will be 3.2% and 3.0% for the other European plans as a group.

U.K. Defined Contribution Pension Plan

Under the Defined Contribution Plan, eligible U.K. employees can belong to the Deferred Contribution Plan on a non-participatory basis or can elect to contribute 3%, 5% or 7% of their pensionable salary. The Company will contribute 5%, 9% and 13% respectively. The plan also provides life insurance and disability insurance benefits for members.

Retirement and Other Postretirement Plans – France

The employees of our French subsidiaries are entitled to receive a lump-sum payment upon retirement subject to certain service conditions under the provisions of the national chemicals and textile workers collective bargaining agreements. The amounts attributable to the French plans have been included within the total expense and obligation amounts noted for the European plans.

Net Periodic Pension Expense

Net periodic expense for our U.S. and European qualified and nonqualified defined benefit pension plans and our retirement savings plans for the three years ended December 31, 2019 is detailed in the table below.

(In millions)	2019	2018	2017
Defined benefit retirement plans	\$ (1.0)	\$ (1.6)	\$ 0.6
Union sponsored multi-employer pension plan	2.5	2.1	1.9
Retirement savings plans-matching contributions	11.4	10.2	9.7
Retirement savings plans-profit sharing contributions	10.4	10.2	9.2
Net periodic expense	<u>\$ 23.3</u>	<u>\$ 20.9</u>	<u>\$ 21.4</u>

Defined Benefit Retirement and Postretirement Plans

Net periodic cost of our defined benefit retirement and postretirement plans for the three years ended December 31, 2019, were:

(In millions)	U.S. Plans			European Plans		
	2019	2018	2017	2019	2018	2017
Defined Benefit Retirement Plans						
Service cost	\$ 1.2	\$ 1.2	\$ 1.3	\$ 1.0	\$ 1.1	\$ 1.0
Interest cost	0.6	0.6	0.6	4.5	4.4	4.6
Expected return on plan assets	—	—	—	(8.7)	(9.4)	(8.4)
Net amortization	0.1	0.2	0.4	0.3	0.3	0.3
Termination benefits and settlement losses	—	—	0.7	—	—	0.1
Net periodic pension cost (income)	<u>\$ 1.9</u>	<u>\$ 2.0</u>	<u>\$ 3.0</u>	<u>\$ (2.9)</u>	<u>\$ (3.6)</u>	<u>\$ (2.4)</u>

(In millions)	2019	2018	2017
U.S. Postretirement Plans			
Interest cost	\$ 0.1	\$ 0.1	\$ 0.1
Net amortization and deferral	(1.1)	(1.0)	0.1
Net periodic postretirement benefit (income) loss	<u>\$ (1.0)</u>	<u>\$ (0.9)</u>	<u>\$ 0.2</u>

(In millions)	Defined Benefit Retirement Plans				Postretirement Plans	
	U.S. Plans		European Plans		2019	2018
Other Changes in Plan Assets and Benefit Obligations Recognized in Other Comprehensive Income (Loss)	2019	2018	2019	2018	2019	2018
Net loss (gain)	\$ 0.9	\$ (0.7)	\$ 8.3	\$ (5.0)	\$ 0.1	\$ —
Amortization of actuarial (losses) gains	—	(0.3)	(0.3)	(0.4)	1.1	1.0
Prior service cost	—	—	(0.1)	1.3	—	—
Effect of foreign exchange	—	—	0.8	(1.2)	—	—
Total recognized in other comprehensive income (loss), (pre-tax)	<u>\$ 0.9</u>	<u>\$ (1.0)</u>	<u>\$ 8.7</u>	<u>\$ (5.3)</u>	<u>\$ 1.2</u>	<u>\$ 1.0</u>

The Company expects to recognize \$0.6 million of net actuarial loss and \$0.1 million of net prior service cost as a component of net periodic pension cost in 2020 for its defined benefit plans. The amount of net actuarial gain recognized as a component of net periodic postretirement benefit cost in 2020 is expected to be \$0.8 million.

The benefit obligation, fair value of plan assets, funded status, and amounts recognized in the consolidated financial statements for our defined benefit retirement plans and postretirement plans, as of and for the years ended December 31, 2019 and 2018, were:

(In millions)	Defined Benefit Retirement Plans					
	U.S. Plans		European Plans		Postretirement Plans	
	2019	2018	2019	2018	2019	2018
Change in benefit obligation:						
Benefit obligation – beginning of year	\$ 18.2	\$ 21.4	\$ 160.9	\$ 189.5	\$ 3.3	\$ 4.1
Service cost	1.2	1.2	1.0	1.1	—	—
Interest cost	0.6	0.6	4.5	4.4	0.1	0.1
Plan participants’ contributions	—	—	—	1.3	0.3	—
Actuarial loss (gain)	0.9	(0.7)	22.0	(20.4)	0.2	(0.7)
Plan amendments and acquisitions	—	—	—	—	—	—
Curtailements and settlements	—	—	(0.4)	(0.4)	—	—
Benefits and expenses paid	(0.6)	(4.3)	(5.2)	(5.2)	(0.8)	(0.2)
Currency translation adjustments	—	—	5.8	(9.4)	—	—
Benefit obligation – end of year	\$ 20.3	\$ 18.2	\$ 188.6	\$ 160.9	\$ 3.1	\$ 3.3
Change in plan assets:						
Fair value of plan assets – beginning of year	\$ —	\$ —	\$ 184.3	\$ 201.8	\$ —	\$ —
Actual return on plan assets	—	—	22.2	(6.0)	—	—
Employer contributions	0.6	4.3	5.2	5.0	0.5	0.2
Plan participants’ contributions	—	—	—	—	0.3	—
Benefits and expenses paid	(0.6)	(4.3)	(5.2)	(5.2)	(0.8)	(0.2)
Curtailements and settlements	—	—	(0.2)	(0.4)	—	—
Currency translation adjustments	—	—	8.0	(10.9)	—	—
Fair value of plan assets – end of year	\$ —	\$ —	\$ 214.3	\$ 184.3	\$ —	\$ —
Amounts recognized in Consolidated Balance Sheets:						
Non-current assets	\$ —	\$ —	\$ 45.2	\$ 42.6	\$ —	\$ —
Current liabilities	\$ 1.4	\$ 0.9	\$ 0.6	\$ 0.4	\$ 0.5	\$ 0.5
Non-current liabilities	18.9	17.3	18.9	18.8	2.6	2.8
Total liabilities (a)	\$ 20.3	\$ 18.2	\$ 19.5	\$ 19.2	\$ 3.1	\$ 3.3
Amounts recognized in Accumulated Other Comprehensive Loss:						
Actuarial net (loss) gain	\$ (3.0)	\$ (3.1)	\$ (28.8)	\$ (20.0)	\$ 1.8	\$ 3.0
Prior service cost	—	1.0	(1.3)	(1.4)	—	—
Total amounts recognized in accumulated other comprehensive (loss) income	\$ (3.0)	\$ (2.1)	\$ (30.1)	\$ (21.4)	\$ 1.8	\$ 3.0

(a) The current and non-current portions of the accrued benefit costs for the defined benefit retirement plans and postretirement benefit plans are included within “accrued compensation and benefits” and “retirement obligations”, respectively, in the accompanying consolidated balance sheets.

The measurement date used to determine the benefit obligations and plan assets of the defined benefit retirement and postretirement plans was December 31, 2019. All costs related to our pensions are included as a component of operating income in our consolidated statements of operations. For the years ended December 31, 2019, 2018 and 2017, amounts unrelated to service costs were a benefit of \$4.2 million, \$4.8 million and \$1.5 million, respectively.

The total accumulated benefit obligation (“ABO”) for the U.S. defined benefit retirement plans was \$19.9 million and \$17.8 million as of December 31, 2019 and 2018, respectively. Excluding the U.K. Plan, the European plans’ ABO exceeded plan assets as of December 31, 2019 and 2018, by \$14.6 million and \$14.1 million, respectively. These plans’ ABO was \$21.5 million and \$20.3 million as of December 31, 2019 and 2018, respectively. The U.K. Plan is overfunded; the ABO of this plan was \$162.3 million and \$135.5 million at December 31, 2019 and 2018, respectively. The fair value of the U.K. Plan assets was \$207.5 million and \$178.1 million at December 31, 2019 and 2018, respectively.

Benefit payments for the plans are expected to be as follows:

(In millions)	U.S. Plans	European Plans	Postretirement Plans
2020	\$ 1.4	\$ 5.0	\$ 0.5
2021	4.1	6.3	0.5
2022	2.3	5.7	0.4
2023	1.2	6.3	0.4
2024	11.9	8.9	0.3
2025-2029	2.6	37.4	1.0
	<u>\$ 23.5</u>	<u>\$ 69.6</u>	<u>\$ 3.1</u>

Fair Values of Pension Assets

The following table presents pension assets measured at fair value at December 31, 2019 and 2018 utilizing the fair value hierarchy discussed in Note 20:

(In millions) Description	December 31, 2019	Fair Value Measurements at December 31, 2019		
		Level 1	Level 2	Level 3
Equity funds	\$ 28.2	\$ —	\$ 28.2	\$ —
Diversified growth funds	55.6	—	55.6	—
Fixed income gilts	19.9	—	19.9	—
Insurance contracts	4.4	—	—	4.4
Liability driven investments	29.7	—	29.7	—
Index linked gilts	73.5	—	73.5	—
Diversified investment funds	2.4	—	—	2.4
Cash and cash equivalents	0.6	0.6	—	—
Total assets	<u>\$ 214.3</u>	<u>\$ 0.6</u>	<u>\$ 206.9</u>	<u>\$ 6.8</u>

Description	December 31, 2018	Fair Value Measurements at December 31, 2018		
		Level 1	Level 2	Level 3
Equity funds	\$ 44.4	\$ —	\$ 44.4	\$ —
Diversified growth funds	44.5	—	44.5	—
Insurance contracts	4.2	—	—	4.2
Liability driven investments	31.7	—	31.7	—
Index linked gilts	57.0	—	57.0	—
Diversified investment funds	2.0	—	—	2.0
Cash and cash equivalents	0.5	0.5	—	—
Total assets	<u>\$ 184.3</u>	<u>\$ 0.5</u>	<u>\$ 177.6</u>	<u>\$ 6.2</u>

The U.K. plan invests funds which are not exchange listed and are, therefore, classified as Level 2.

(In millions) Reconciliation of Level 3 Assets	Balance at January 1, 2019	Actual return on plan assets	Purchases, sales and settlements	Changes due to exchange rates	Balance at December 31, 2019
Diversified investment funds	\$ 2.0	\$ 0.3	\$ 0.1	\$ —	\$ 2.4
Insurance contracts	4.2	0.1	0.2	(0.1)	4.4
Total level 3 assets	<u>\$ 6.2</u>	<u>\$ 0.4</u>	<u>\$ 0.3</u>	<u>\$ (0.1)</u>	<u>\$ 6.8</u>

Reconciliation of Level 3 Assets	Balance at January 1, 2018	Actual return on plan assets	Purchases, sales and settlements	Changes due to exchange rates	Balance at December 31, 2018
Diversified investment funds	\$ 2.3	\$ —	\$ (0.2)	\$ (0.1)	\$ 2.0
Insurance contracts	4.2	0.2	—	(0.2)	4.2
Total level 3 assets	<u>\$ 6.5</u>	<u>\$ 0.2</u>	<u>\$ (0.2)</u>	<u>\$ (0.3)</u>	<u>\$ 6.2</u>

Plan assets are invested in a number of unit linked pooled funds by an independent asset management group. Equity funds are split 30/70 between U.K. and overseas equity funds (North America, Japan, Asia Pacific and Emerging Markets). The asset management firm uses quoted prices in active markets to value the assets.

Diversified growth funds are invested in a broad spectrum of return seeking asset classes with reduced dependency on any particular asset class. This approach targets growth asset returns with lower risk resulting from the diversification across different asset classes.

The fixed income gilts provide investment in low risk, fixed coupon bonds to reduce the volatility of return on the investments.

Insurance contracts contain a minimum guaranteed return. The fair value of the assets is equal to the total amount of all individual technical reserves plus the non-allocated employer's financing fund reserves at the valuation date. The individual technical and financing fund reserves are equal to the accumulated paid contributions taking into account the insurance tariffication and any allocated profit-sharing return.

The liability driven investments' allocation aims to hedge against the exposure to interest rate risk through the use of interest rate swaps.

The index-linked gilt allocation provides a partial interest rate and inflation rate hedge against the valuation of the liabilities.

The diversified investment funds represent plan assets invested in a Pensionskasse (an Austrian multi-employer pension fund). The main holdings consist of equity, bonds, real estate and bank deposits.

The actual allocations for the pension assets at December 31, 2019 and 2018, and target allocations by asset class, are as follows:

Asset Class	Percentage of Plan Assets 2019	Target Allocations 2019	Percentage of Plan Assets 2018	Target Allocations 2018
	Diversified growth funds	25.9%	22.3%	24.1%
Index linked gilts	34.3	33.4	30.9	12.6
Fixed interest gilts	9.3	9.1	—	—
Liability driven investments	13.8	16.5	17.2	23.2
All other regions equity fund	9.2	10.8	14.4	19.7
U.K. equity fund	4.0	4.7	9.7	13.2
Diversified investment funds	1.1	1.1	1.1	1.1
Insurance contracts	2.0	2.1	2.3	2.2
Cash and cash equivalents	0.4	—	0.3	—
Total	<u>100%</u>	<u>100%</u>	<u>100%</u>	<u>100%</u>

Assumptions

The assumed discount rate for pension plans reflects the market rates for high-quality fixed income debt instruments currently available. A third party provided standard Yield Curve was used for the U.S. non-qualified and postretirement plans. For the U.K. plan, cash flows were not available and therefore we considered the derived yield to market on a representative bond of suitable duration taken from the third party provider's synthetic bond yield curve. We believe that the timing and amount of cash flows related to these instruments is expected to match the estimated defined benefit payment streams of our plans. The assumed discount rate for the U.S. non-qualified plans uses individual discount rates for each plan based on their associated cash flows.

Salary increase assumptions are based on historical experience and anticipated future management actions. For the postretirement health care and life insurance benefit plans, we review external data and our historical trends for health care costs to determine the health care cost trend rates. Retirement rates are based primarily on actual plan experience and on rates from previously mentioned mortality tables. Actual results that differ from our assumptions are accumulated and amortized over future periods and, therefore, generally affect the net periodic costs and recorded obligations in such future periods. While we believe that the assumptions used are appropriate, significant changes in economic or other conditions, employee demographics, retirement and mortality rates, and investment performance may materially impact such costs and obligations.

Assumptions used to estimate the actuarial present value of benefit obligations at December 31, 2019, 2018 and 2017 are shown in the following table. These year-end values are the basis for determining net periodic costs for the following year.

	2019	2018	2017
U.S. defined benefit retirement plans:			
Discount rates	2.1% - 2.8%	2.8% - 3.2%	2.8% - 3.2%
Rate of increase in compensation	3.0%	3.0%	3.0%
European defined benefit retirement plans:			
Discount rates	0.35% - 2.05%	1.25% - 3.05%	1.20% - 2.55%
Rates of increase in compensation	2.75% - 3.0%	2.75% - 3.0%	2.75% - 3.0%
Expected long-term rates of return on plan assets	2.0% - 3.2%	2.0% - 4.75%	2.0% - 4.75%
Postretirement benefit plans:			
Discount rates	2.5%	3.7%	3.0%

The following table presents the impact that a one-percentage-point increase and a one-percentage-point decrease in the expected long-term rate of return and discount rate would have on the 2019 pension expense, and the impact on our retirement obligation as of December 31, 2019 for a one-percentage-point change in the discount rate:

(In millions)	U.S. Non-Qualified Pension Plans	U S Retiree Medical Plans	U.K. Retirement Plan
Periodic pension expense			
One-percentage-point increase:			
Expected long-term rate of return	\$ N/A	\$ N/A	\$ (2.1)
Discount rate	\$ —	\$ —	\$ 0.8
One-percentage-point decrease:			
Expected long-term rate of return	\$ N/A	\$ N/A	\$ 2.1
Discount rate	\$ —	\$ —	\$ —
Retirement obligation			
One-percentage-point increase in discount rate	\$ (0.8)	\$ (0.1)	\$ (26.0)
One-percentage-point decrease in discount rate	\$ 0.9	\$ 0.1	\$ 33.2

The annual rate of increase in the per capita cost of covered health care benefits is assumed to be 7.0% for medical and 5.0% for dental and vision for 2019. The medical rates are assumed to gradually decline to 4.75% by 2029, whereas dental and vision rates are assumed to remain constant at 5.0%. A one-percentage-point increase and a one-percentage-point decrease in the assumed health care cost trend would have an insignificant impact on the total of service and interest cost components, and would have an immaterial impact on the postretirement benefit obligation for both 2019 and 2018.

Note 8 — Income Taxes

Income before income taxes and the provision for income taxes, for the three years ended December 31, 2019, were as follows:

(In millions)	2019	2018	2017
Income before income taxes:			
U.S.	\$ 284.1	\$ 222.9	\$ 155.5
International	95.6	110.6	167.7
Total income before income taxes	<u>\$ 379.7</u>	<u>\$ 333.5</u>	<u>\$ 323.2</u>
Provision for income taxes:			
Current:			
U.S.	\$ 49.1	\$ 18.3	\$ 18.9
International	11.4	14.9	20.3
Current provision for income taxes	<u>60.5</u>	<u>33.2</u>	<u>39.2</u>
Deferred:			
U.S.	3.8	26.8	(1.9)
International	12.5	2.5	5.2
Deferred provision for income taxes	<u>16.3</u>	<u>29.3</u>	<u>3.3</u>
Total provision for income taxes	<u>\$ 76.8</u>	<u>\$ 62.5</u>	<u>\$ 42.5</u>

A reconciliation of the provision for income taxes at the U.S. federal statutory income tax rate of 21% to the effective income tax rate, for the year ended December 31, 2019 and 2018, and 35% for the year ended December 31, 2017, is as follows:

(In millions)	2019	2018	2017
Provision for taxes at U.S. federal statutory rate	\$ 79.7	\$ 70.0	\$ 113.1
State and local taxes, net of federal benefit	3.6	7.2	0.2
Foreign effective rate differential	5.1	4.6	(14.4)
Tax credits	(8.8)	(7.8)	(16.0)
Change in valuation allowance	(1.9)	(3.4)	(9.1)
Remeasurement of deferred taxes	0.4	(9.0)	(67.8)
Transition tax on undistributed foreign earnings	—	1.6	45.7
Excess tax benefits on stock based compensation	(4.9)	(4.6)	(7.6)
Other	1.0	(0.5)	4.9
Increase (decrease) in reserves for uncertain tax positions	1.2	(1.3)	(6.5)
Global intangible low taxed income	1.4	5.7	—
Total provision for income taxes	<u>\$ 76.8</u>	<u>\$ 62.5</u>	<u>\$ 42.5</u>

The U.S. Tax Cuts and Jobs Act (“Act”) was enacted on December 22, 2017. The Act reduced the US federal corporate tax rate from 35% to 21% in 2018 and required companies to pay a one-time transition tax on earnings of certain foreign subsidiaries that were previously tax deferred and created new taxes on certain foreign-sourced earnings.

Deferred tax assets and liabilities: In 2017 a tax benefit of \$67.8 million related to the remeasurement of our deferred tax balance partially, offset by a \$45.7 million increase in income tax expense related to our one-time transition tax liability for all of our controlled foreign corporations, resulted in an increase in provisional tax benefit of \$22.1 million. The tax due on unremitted earnings will be paid over 8 years, as permitted by the Act. As of December 31, 2018, we recorded a benefit of \$7.8 million for the remeasurement of certain deferred tax balances, which is included as a component of income tax expense. The adjustment of our deferred tax balances reduced our effective tax rate for 2018 by 2.3% and 2017 by 6.8%.

We do not provide for additional income or withholding taxes for any undistributed foreign earnings as we do not currently have any specific plans to repatriate funds from our international subsidiaries; however, we may do so in the future if a dividend can be remitted with no material tax impact. As of December 31, 2019, we have approximately \$1,061 million of unremitted foreign earnings that we intend to keep indefinitely reinvested. Additionally, due to withholding tax, basis computations and other tax related considerations, it is not practicable to estimate any taxes to be provided on outside basis differences at this time.

Deferred Income Taxes

Deferred income taxes result from tax attributes including foreign tax credits, net operating loss carryforwards and temporary differences between the recognition of items for income tax purposes and financial reporting purposes. Principal components of deferred income taxes as of December 31, 2019 and 2018 are:

(In millions)	2019	2018
Assets		
Net operating loss carryforwards	\$ 71.6	\$ 67.8
Capital loss carryforward	1.7	1.7
ASC 606 – revenue from contracts with customers	9.9	9.3
Tax credit carryforwards	8.6	8.1
Stock based compensation	7.7	8.4
Other comprehensive income	6.3	4.1
Reserves and other	13.3	15.6
Subtotal	119.1	115.0
Valuation allowance	(44.7)	(48.8)
Total assets	<u>\$ 74.4</u>	<u>\$ 66.2</u>
Liabilities		
Accelerated depreciation	(189.1)	(163.0)
Accelerated amortization	(13.2)	(11.8)
Other	(6.0)	(4.0)
Total liabilities	\$ (208.3)	\$ (178.8)
Net deferred tax liabilities	<u>\$ (133.9)</u>	<u>\$ (112.6)</u>

Deferred tax assets and deferred tax liabilities as presented in the consolidated balance sheets as of December 31, 2019 and 2018 are as follows and are recorded in other assets and deferred income taxes in the consolidated balance sheets:

(In millions)	2019	2018
Long-term deferred tax assets, net	\$ 21.8	\$ 32.1
Long-term deferred tax liability, net	(155.7)	(144.7)
Net deferred tax liabilities	<u>\$ (133.9)</u>	<u>\$ (112.6)</u>

The deferred tax assets for the respective periods were assessed for recoverability and, where applicable, a valuation allowance was recorded to reduce the total deferred tax asset to an amount that will, more likely than not, be realized in the future. The valuation allowance as of December 31, 2019 and 2018 relates primarily to net operating loss carryforwards of our foreign subsidiaries for which we have determined, based upon historical results and projected future book and taxable income levels, that a valuation allowance should continue to be maintained. The net change in the total valuation allowance for the years ended December 31, 2019 and 2018, was a decrease of \$4.1 million and \$6.1 million, respectively.

Although realization is not assured, we have concluded that it is more-likely-than-not that the deferred tax assets, for which a valuation allowance was determined to be unnecessary, will be realized in the ordinary course of operations based on the available positive and negative evidence, including scheduling of deferred tax liabilities and projected income from operating activities. The amount of the net deferred tax assets considered realizable, however, could be reduced in the near term if actual future income or income tax rates are lower than estimated, or if there are differences in the timing or amount of future reversals of existing taxable or deductible temporary differences.

Net Operating Loss & Tax Credit Carryforwards

At December 31, 2019, we had tax credit carryforwards for U.S. tax purposes of \$8.6 million available to offset future income taxes. These credits will begin to expire if not utilized in 2020. We also had net operating loss carryforwards for U.S. state and foreign income tax purposes of \$1.7 million and \$273.7 million, respectively, for which there were foreign valuation allowances of \$174.2 million as of December 31, 2019. Our foreign net operating losses can be carried forward without limitation in Belgium, France, Luxembourg and the U.K. We have a partial valuation allowance against certain foreign net operating losses for which the Company believes it is not more likely than not that the net operating losses will be utilized.

Uncertain Tax Positions

Our unrecognized tax benefits at December 31, 2019, relate to various foreign and U.S. jurisdictions.

The following table summarizes the activity related to our unrecognized tax benefits.

(In millions)	Unrecognized Tax Benefits		
	2019	2018	2017
Balance as of January 1,	\$ 7.5	\$ 12.3	\$ 16.7
Additions based on tax positions related to the current year	11.0	1.1	5.3
(Reductions) additions for tax positions of prior years	(0.1)	(5.7)	(6.1)
Expiration of the statute of limitations for the assessment of taxes	(0.3)	(0.3)	(4.8)
Other, including currency translation	—	0.1	1.2
Balance as of December 31,	\$ 18.1	\$ 7.5	\$ 12.3

Included in the unrecognized tax benefits of \$18.1 million at December 31, 2019 was \$6.0 million of tax benefits that, if recognized, would impact our annual effective tax rate. In addition, we recognize interest accrued related to unrecognized tax benefits as a component of interest expense and penalties as a component of income tax expense in the consolidated statements of operations. We recognized \$0.3 million of interest expense and penalties related to the above unrecognized tax benefits in 2017, and did not recognize any interest expense in 2018 or 2019. During 2018, we reversed \$0.6 million of interest related to unrecognized tax benefits. We had accrued interest of approximately \$0.2 million at both December 31, 2019 and 2018.

We are subject to taxation in the U.S. and various states and foreign jurisdictions. The U.S. tax returns have been audited through 2013. Foreign and U.S. state jurisdictions have statutes of limitations generally ranging from 3 to 5 years. Years that are still open to examination in our major jurisdictions include the U.S. (2015 onward), Austria (2016 onward), Belgium (2013 onward), France (2016 onward), Spain (2013 onward) and the U.K. (2017 onward). We are currently under examination in the U.S. and certain foreign jurisdictions.

As of December 31, 2019, we had uncertain tax positions for which it is reasonably possible that amounts of unrecognized tax benefits could significantly change over the next year. These uncertain tax positions relate to our tax returns from 2010 onward, some of which are currently under examination by certain U.S. and European tax authorities. We believe it is reasonably possible that the total amount of unrecognized tax benefits disclosed as of December 31, 2019 may decrease in the range of approximately \$4.2 million to \$4.4 million in the fiscal year ending December 31, 2020. Such possible decrease primarily relates to audit settlements and the expiration of statutes of limitation.

Note 9 — Capital Stock

Common Stock Outstanding

Common stock outstanding as of December 31, 2019, 2018 and 2017 was as follows:

(Number of shares in millions)	2019	2018	2017
Common stock:			
Balance, beginning of year	108.5	107.8	106.7
Activity under stock plans	0.8	0.7	1.1
Balance, end of year	109.3	108.5	107.8
Treasury stock:			
Balance, beginning of year	23.7	18.2	15.3
Repurchased	2.0	5.5	2.9
Balance, end of year	25.7	23.7	18.2
Common stock outstanding	83.6	84.8	89.6

In May 2018, our Board authorized the repurchase of \$500 million of the Company's stock ("2018 Repurchase Plan"). During 2019, 2018 and 2017, the Company spent \$143.0 million, \$357.7 million and \$150.3 million to repurchase common stock, respectively. At December 31, 2019, we have \$241.8 million remaining under the 2018 Repurchase Plan.

Dividends per share of common stock for 2019, 2018, and 2017, were \$0.64, \$0.55, and \$0.47, respectively.

Note 10 — Revenue

We recognize revenue over time for those agreements that are subject to terms similar, or equal to, the Federal Acquisition Regulation Part 52.249-2, which contains a termination for convenience clause, and where the products being produced have no alternative use. Prior to the adoption date, revenue related to these agreements was recognized when the goods were shipped, however, as a result of the adoption of ASC 606 a portion of our revenue may be earned in periods earlier than it would have been in prior years. The cumulative adjustment to retained earnings upon adoption represents those earnings, which would have been recognized in the previous year had ASC 606 been in effect during that time. As our production cycle is typically six months or less, it is expected that goods related to the revenue represented in that adjustment will be shipped and billed within the next twelve months. Less than half of our agreements contain provisions which would require revenue to be recognized over time.

We disaggregate our revenue based on market for analytical purposes. The following table details our revenue by market for the years ended December 31, 2019 and 2018:

(In millions)	2019	2018
Consolidated Net Sales	\$ 2,355.7	\$ 2,189.1
Commercial Aerospace	1,597.7	1,525.0
Space & Defense	444.7	369.9
Industrial	313.3	294.2

Revenue recognized over time gives rise to contract assets, which represent revenue recognized but unbilled. Contract assets are included in our consolidated balance sheets as a component of current assets. The activity related to contract assets is as follows:

(In millions)	Composite Materials	Engineered Products	Total
Opening adjustment - January 1, 2018	\$ 15.1	\$ 23.0	\$ 38.1
Net revenue billed	(2.2)	14.6	12.4
Balance at December 31, 2018	\$ 12.9	\$ 37.6	\$ 50.5
Net revenue billed	(0.1)	2.3	2.2
Balance at December 31, 2019	\$ 12.8	\$ 39.9	\$ 52.7

Contract assets as of December 31, 2019, will be billed and reclassified to accounts receivable during 2020. Accounts receivable, net includes amounts billed to customers where the right to payment is unconditional.

The financial results were not significantly impacted by the adoption of ASC 606. Under ASC 606 for the years ended December 31, 2019 and 2018 revenue was higher by \$2.2 million and \$12.4 million and gross margin was higher by \$0.4 million and \$0.3 million, respectively, than they would have been under ASC 605. There was not a material impact on earnings per share for the years ended December 31, 2019 or 2018. At December 31, 2019 and 2018 our inventory was \$47.0 million and \$45.8 million lower, respectively, as a result of ASC 606.

Note 11 — Other Operating Expense (Income)

In 2018 we recorded restructuring expenses of \$7.7 million primarily for employee related costs from an action taken at one of our European facilities to improve operational efficiency and productivity. During 2018, we also recorded \$7.3 million related to an environmental insurance recovery which was offset by the write-down of our investment in Carbon Conversions, Inc. (“CCI”), as well as an additional reserve related to the Lower Passaic River environmental matter.

Note 12 — Stock-Based Compensation

The following table details the stock-based compensation expense by type of award for the years ended December 31, 2019, 2018 and 2017:

(In millions)	2019	2018	2017
Non-qualified stock options	\$ 4.5	\$ 3.6	\$ 4.0
Restricted stock, service based	6.4	6.1	6.4
Restricted stock, performance based	6.2	5.8	6.7
Employee stock purchase plan	0.6	0.5	0.4
Stock-based compensation expense	<u>\$ 17.7</u>	<u>\$ 16.0</u>	<u>\$ 17.5</u>
Tax benefit from stock exercised and converted during the period	<u>\$ 9.1</u>	<u>\$ 7.8</u>	<u>\$ 7.6</u>

Non-Qualified Stock Options

Non-qualified stock options (“NQOs”) have been granted to our employees and directors under our stock compensation plan. Options granted generally vest over three years and expire ten years from the date of grant.

A summary of option activity under the plan for the three years ended December 31, 2019 is as follows:

	Number of Options (In millions)	Weighted- Average Exercise Price	Weighted- average Remaining Contractual Life (in years)
Outstanding at December 31, 2016	2.3	\$ 26.08	5.20
Options granted	0.2	\$ 50.50	—
Options exercised	(0.8)	\$ 22.34	—
Outstanding at December 31, 2017	1.7	\$ 31.18	5.19
Options granted	0.2	\$ 68.15	—
Options exercised	(0.4)	\$ 16.06	—
Outstanding at December 31, 2018	1.5	\$ 38.97	5.20
Options granted	0.2	\$ 65.56	—
Options exercised	(0.4)	\$ 25.95	—
Outstanding at December 31, 2019	<u>1.3</u>	<u>\$ 47.92</u>	<u>5.60</u>

(In millions, except weighted average exercise price)	Year Ended December 31,	
	2019	2018
Aggregate intrinsic value of outstanding options	\$ 31.8	\$ 29.1
Aggregate intrinsic value of exercisable options	\$ 28.0	\$ 26.8
Total intrinsic value of options exercised	\$ 22.9	\$ 19.1
Total number of options exercisable	0.9	1.1
Weighted average exercise price of options exercisable	\$ 41.00	\$ 32.86
Total unrecognized compensation cost on nonvested options (a)	\$ 1.5	\$ 1.3

- (a) Unrecognized compensation cost relates to nonvested stock options and is expected to be recognized over the remaining vesting period ranging from one year to three years.

Valuation Assumptions in Estimating Fair Value

We estimated the fair value of stock options at the grant date using the Black-Scholes option pricing model with the following assumptions for the years ended December 31, 2019, 2018 and 2017:

	2019	2018	2017
Risk-free interest rate	2.61%	2.53%	2.41%
Expected option life (in years)	5.99	5.95	5.95
Dividend yield	0.8%	0.7%	0.9%
Volatility	35.05%	35.64%	34.74%
Weighted-average fair value per option granted	\$ 22.90	\$ 24.36	\$ 16.93

The weighted-average expected life is derived from the average midpoint between the vesting and the contractual term and considers the effect of both the inclusion and exclusion of post-vesting cancellations during the ten-year period. Expected volatility is calculated based on a blend of both historic volatility of our common stock and implied volatility of our traded options. We weigh both volatility inputs equally and utilize the average as the volatility input for the Black-Scholes calculation. The risk-free interest rate for the expected term is based on the U.S. Treasury yield curve in effect at the time of grant and corresponding to the expected term.

Restricted Stock Units — Service Based

As of December 31, 2019, a total of 425,472 shares of service based restricted stock units were outstanding, which vest based on years of service under the 2003 and 2013 incentive stock plans. RSUs are granted to key employees, executives and directors of the Company. The fair value of the RSU is based on the closing market price of the Company's common stock on the date of grant and is amortized on a straight line basis over the requisite service period. The stock-based compensation expense recognized is based on an estimate of shares ultimately expected to vest, and therefore it has been reduced for estimated forfeitures. The total compensation expense related to awards granted to retirement-eligible employees is recognized on the grant date.

The table presented below provides a summary of the Company's RSU activity for the years ended December 31, 2019, 2018 and 2017:

	RSUs Number of (In millions)	Weighted- Average Fair Value Grant Date
Outstanding at December 31, 2016	0.5	\$ 33.72
RSUs granted	0.1	\$ 50.97
RSUs issued	(0.1)	\$ 38.17
Outstanding at December 31, 2017	0.5	\$ 36.75
RSUs granted	0.1	\$ 66.63
RSUs issued	(0.1)	\$ 41.46
Outstanding at December 31, 2018	0.5	\$ 41.65
RSUs granted	0.1	\$ 68.85
RSUs issued	(0.2)	\$ 44.75
Outstanding at December 31, 2019	0.4	\$ 48.06

As of December 31, 2019, there was total unrecognized compensation cost related to nonvested RSUs of \$6.1 million, which is to be recognized over the remaining vesting period ranging from one year to three years.

Restricted Stock Units — Performance Based

As of December 31, 2019, a total of 312,691 shares of performance based restricted stock units were outstanding under the 2003 and 2013 incentive stock plans. The total amount of PRSUs that will ultimately vest is based on the achievement of various financial performance targets set forth by the Company's Compensation Committee on the date of grant. PRSUs are based on a three-year performance period. The stock based compensation expense related to awards granted to retirement-eligible employees is expensed on the grant date and is tried up as projections change. The fair value of the PRSU is based on the closing market price of the Company's common stock on the date of grant and is amortized straight-line over the total three year period. A change in the performance measure expected to be achieved is recorded as an adjustment in the period in which the change occurs.

The table presented below provides a summary, of the Company’s PRSU activity, at original grant amounts, for the years ended December 31, 2019, 2018 and 2017:

	Number of PRSUs (In millions)	Weighted- Average Grant Date Fair Value
Outstanding at December 31, 2016	0.4	\$ 42.66
PRsUs granted	0.2	\$ 50.50
PRsUs issued	(0.2)	\$ 42.57
Outstanding at December 31, 2017	0.4	45.35
PRsUs granted	0.1	\$ 68.15
PRsUs issued	(0.2)	\$ 43.96
Outstanding at December 31, 2018	0.3	\$ 51.75
PRsUs granted	0.1	\$ 65.56
PRsUs issued	(0.1)	\$ 41.71
Outstanding at December 31, 2019	0.3	\$ 60.48

As of December 31, 2019, there was total unrecognized compensation cost related to nonvested PRSUs of \$2.1 million, which is to be recognized over the remaining vesting period ranging from one year to three years. The final amount of compensation cost to be recognized is dependent upon our financial performance.

Stock-Based Compensation Cash Activity

During 2019, 2018 and 2017 cash received from stock option exercises was \$10.7 million, \$5.1 million and \$16.2 million, respectively. We used \$6.2 million, \$5.9 million and \$5.7 million in cash related to the shares withheld to satisfy employee tax obligations for RSUs and PRSUs converted during the years ended December 31, 2019, 2018 and 2017, respectively.

We classify the cash flows resulting from these tax benefits as financing cash flows. We either issue new shares of our common stock or utilize treasury shares upon the exercise of stock options or the conversion of stock units.

Shares Authorized for Grant

In January 2019, the Compensation Committee of the Board of Directors of Hexcel Corporation adopted, and stockholders subsequently approved in May 2019, an amendment to the Hexcel Corporation 2013 Incentive Stock Plan (the “Plan”) that increased the number of shares of the Company’s common stock authorized for issuance under the Plan by 3,300,000 shares. As of December 31, 2019, an aggregate of 4.0 million shares were authorized for future grant under our stock plan, which covers stock options, RSUs, PRSUs and at the discretion of Hexcel, could result in the issuance of other types of stock-based awards.

Employee Stock Purchase Plan (“ESPP”)

The Company offers an ESPP, which allows for eligible employees to contribute up to 10% of their base earnings, to a maximum of \$25,000 in a calendar year, toward the quarterly purchase of our common stock at a purchase price equal to 85% of the fair market value of the common stock. There were 48,236 and 57,788 ESPP shares purchased in 2019 and 2018, respectively. This plan will be suspended beginning after the closing of the first quarter 2020 offering period pursuant to the merger agreement between Hexcel and Woodward. The merger agreement also requires Hexcel to terminate the plan no later than immediately prior to the closing date of the merger, contingent upon the closing occurring.

Note 13 — Net Income Per Common Share

Computations of basic and diluted net income per common share for the years ended December 31, 2019, 2018 and 2017, are as follows:

(In millions, except per share data)	2019	2018	2017
Basic net income per common share:			
Net income	\$ 306.6	\$ 276.6	\$ 284.0
Weighted average common shares outstanding	84.9	87.9	90.6
Basic net income per common share	\$ 3.61	\$ 3.15	\$ 3.13
Diluted net income per common share:			
Weighted average common shares outstanding — Basic	84.9	87.9	90.6
<i>Plus incremental shares from assumed conversions:</i>			
Restricted stock units	0.3	0.4	0.4
Stock options	0.6	0.7	0.9
Weighted average common shares outstanding — Dilutive	85.8	89.0	91.9
Dilutive net income per common share	\$ 3.57	\$ 3.11	\$ 3.09
Anti-dilutive shares outstanding, excluded from computation	0.1	0.2	0.2

Note 14 — Derivative Financial Instruments

Interest Rate Swap Agreements

At December 31 2019, we had €45 million of interest rate swaps that swap the EURIBOR on our European term loan for a fixed rate at a weighted average of 0.5%. These interest rate swaps were designated as cash flow hedges to floating rate bank loans. The Euro swaps had final maturities dates between June 2023 and June 2024, in annual installments. The fair value of interest rate swap agreements was recorded in other assets or as a liability with a corresponding amount to other comprehensive income. The fair value of the interest rate swaps was a liability of \$0.6 million and \$0.5 million (\$0.3 million in other non-current liabilities) at December 31, 2019 and December 31, 2018, respectively. We terminated these swaps in January 2020 when we repaid the European term loan.

The Company had treasury lock agreements to protect against unfavorable movements in the benchmark treasury rate related to the issuance of our senior unsecured notes. These hedges were designated as cash flow hedges for hedge accounting purposes thus any change in fair value was recorded as a component of other comprehensive income. As part of the issuance of our senior notes, we net settled these derivatives for \$10 million in cash. As a result of settling these derivatives the previously deferred gains recorded in other comprehensive income will be released to interest expense over the life of the senior notes. The effect of these settled treasury locks will reduce the effective interest rate on the senior notes by approximately 0.25%.

Foreign Currency Forward Exchange Contracts

A number of our European subsidiaries are exposed to the impact of exchange rate volatility between the U.S. dollar and the subsidiaries' functional currencies, being either the Euro or the British pound sterling. We entered into contracts to exchange U.S. dollars for Euros and British pound sterling through June 2022. The aggregate notional amount of these contracts was \$426.9 million at December 31, 2019 and \$416.5 million at December 31, 2018. The purpose of these contracts is to hedge a portion of the forecasted transactions of European subsidiaries under long-term sales contracts with certain customers. These contracts are expected to provide us with a more balanced matching of future cash receipts and expenditures by currency, thereby reducing our exposure to fluctuations in currency exchange rates. The effective portion of the hedges was a loss of \$11.1 million, a loss of \$25.8 million and a gain of \$34.6 million, for the years ended December 31, 2019, 2018 and 2017, respectively, and are recorded in other comprehensive income. At December 31, 2019, \$3.7 million of the carrying amount of these contracts was classified in other assets (\$1.3 million of which was recorded in prepaid expenses and other current assets) and \$15.5 million as liabilities (\$2.9 million of which is in other non-current liabilities) on the consolidated balance sheets and \$1.3 million classified in other assets and \$15.3 million (\$7.5 million of which is in other non-current liabilities) as liabilities at December 31, 2018. During the years ended December 31, 2019 and 2017 the net impact for the hedges recognized in sales was a loss of \$13.1 million and \$11.3 million, respectively. During the year ended December 31, 2018 the net impact on sales was not significant. For the three years ended December 31, 2019, 2018 and 2017, hedge ineffectiveness was immaterial.

In addition, we enter into foreign exchange forward contracts which are not designated as hedges. These are used to provide an offset to transactional gains or losses arising from the remeasurement of non-functional monetary assets and liabilities such as accounts receivable. The change in the fair value of the derivatives is recorded in the statement of operations. There are no credit contingency features in these derivatives. During the years ended December 31, 2019, 2018 and 2017, we recognized net foreign exchange gains of \$0.4 million, losses of \$4.3 million and gains of \$17.1 million, respectively, in the consolidated statements of

operations. The carrying amount of the contracts for asset and liability derivatives not designated as hedging instruments was \$0.6 million classified in prepaid expenses and other current assets and less than \$0.1 million of current liabilities on our consolidated balance sheets.

The activity, net of tax, in accumulated other comprehensive loss related to foreign currency forward exchange contracts for the years ended December 31, 2019, 2018 and 2017 was as follows:

(In millions)	2019	2018	2017
Unrealized (losses) gains at beginning of period, net of tax	\$ (10.6)	\$ 8.6	\$ (25.9)
Losses reclassified to net sales	10.1	0.9	8.9
(Decrease) increase in fair value	(7.9)	(20.1)	25.6
Unrealized (losses) gains at end of period, net of taxes	<u>\$ (8.4)</u>	<u>\$ (10.6)</u>	<u>\$ 8.6</u>

Unrealized loss of \$6.7 million recorded in accumulated other comprehensive loss, net of tax of \$2.4 million, as of December 31, 2019 are expected to be reclassified into earnings over the next twelve months as the hedged sales are recorded. The impact of credit risk adjustments was immaterial for the three years.

Commodity Swap Agreements

On occasion we enter into commodity swap agreements to hedge against price fluctuations of raw materials, including propylene (the principal component of acrylonitrile). As of December 31, 2019, the Company had commodity swap agreements with a notional value of \$20.4 million. The swaps mature monthly from January 2020 through December 2021. The swaps are accounted for as a cash flow hedge of our forward raw material purchases. The fair value of the commodity swap agreements was a liability of \$5.4 million (\$1.1 million of which is in other non-current liabilities) and \$2.5 million (\$0.8 million of which is in other non-current liabilities) at December 31, 2019 and 2018, respectively.

Note 15 — Commitments and Contingencies

We are involved in litigation, investigations and claims arising out of the normal conduct of our business, including those relating to commercial transactions, environmental, employment and health and safety matters. While it is impossible to predict the ultimate resolution of litigation, investigations and claims asserted against us, we believe, based upon our examination of currently available information, our experience to date, and advice from legal counsel, that, after taking into account our existing insurance coverage and amounts already provided for, the currently pending legal proceedings against us will not have a material adverse impact on our consolidated results of operations, financial position or cash flows.

Environmental Matters

We have been named as a potentially responsible party (“PRP”) with respect to the below hazardous waste disposal sites that we do not own or possess, which are included on, or proposed to be included on, the Superfund National Priority List of the U.S. Environmental Protection Agency (“EPA”) or on equivalent lists of various state governments. Because the Federal Comprehensive Environmental Response, Compensation and Liability Act (“CERCLA” or “Superfund”) allows for joint and several liability in certain circumstances, we could be responsible for all remediation costs at such sites, even if we are one of many PRPs. We believe, based on the amount and nature of our waste, and the number of other financially viable PRPs, that our liability in connection with such environmental matters will not be material.

Lower Passaic River Study Area

Hexcel together with approximately 48 other PRPs that comprise the Lower Passaic Cooperating Parties Group (the “CPG”) are subject to a May 2007 Administrative Order on Consent (“AOC”) with the EPA requiring the CPG to perform a Remedial Investigation/Feasibility Study of environmental conditions of a 17-mile stretch of the Passaic River in New Jersey (the “Lower Passaic River”). We were included in the CPG based on our operations at our former manufacturing site in Lodi, New Jersey.

In March 2016, the EPA issued a Record of Decision (“ROD”) setting forth the EPA’s selected remedy for the lower eight miles of the Lower Passaic River at an expected cost ranging from \$0.97 billion to \$2.07 billion. This estimate does not include any costs related to a future remedy for the upper nine miles of the Lower Passaic River. In August 2017, the EPA appointed an independent third party allocation expert to make recommendations on the relative liability of approximately 120 identified non-government PRP’s, which may be completed as early as 2020.

In October 2016, pursuant to a settlement agreement with the EPA, Occidental Chemical Corporation (“OCC”), one of the PRPs commenced performance of the remedial design required by the ROD, reserving its right of cost contribution from all other PRPs. In

June 2018, OCC filed suit against approximately 120 parties, including Hexcel, in the U.S. District Court of the District of New Jersey seeking cost recovery and contribution under CERCLA related to the Lower Passaic River. In July 2019, the court granted in part and denied in part the defendants' motion to dismiss. Discovery for the remaining claims is ongoing. We do not know whether this litigation will impact the EPA's allocation process or the ultimate outcome of the matter.

The accrual balance related to the Lower Passaic River site was \$2.0 million as of December 31, 2019 and \$2.1 million at December 2018. Given the uncertainty associated with the many elements of the Superfund process for the Lower Passaic River, the amounts accrued may not be indicative of the amounts for which we will ultimately be responsible.

Omega Chemical Corporation Superfund Site

We are a PRP at a former Omega Chemical Corporation ("Omega") chemical waste site in Whittier, California. The PRPs at the Omega site have established the Omega Chemical Site a PRP Organized Group (the "OPOG"), and are currently investigating and remediating soil and groundwater at the site pursuant to a Consent Decree with the EPA. OPOG has attributed approximately either 1.2% or 2.18% of the waste tonnage sent to the site to Hexcel based on different sections within the Omega site. In addition, the EPA is investigating the scope of regional groundwater contamination in the vicinity of the Omega site and issued a ROD finding that the OPOG members will be required to remediate the regional groundwater contamination in that vicinity as well. As a member of OPOG, Hexcel will incur costs associated with the investigation and remediation of the Omega site and the regional groundwater remedy, though our ultimate liability, if any, in connection with this matter cannot be determined at this time. The total accrued liability relating to potential liability for both the Omega site and regional groundwater remedies was \$0.3 million at both December 31, 2019 and 2018.

Environmental remediation reserve activity for the three years ended December 31, 2019 was as follows:

(In millions)	2019	2018	2017
Beginning remediation accrual balance	\$ 2.7	\$ 2.8	\$ 3.2
Current period expenses	—	0.3	0.1
Cash expenditures	(0.2)	(0.4)	(0.5)
Ending remediation accrual balance	<u>\$ 2.5</u>	<u>\$ 2.7</u>	<u>\$ 2.8</u>

Environmental Summary

Our estimate of liability as a PRP and our remaining costs associated with our responsibility to remediate the Lower Passaic River, New Jersey and other sites are accrued in the consolidated balance sheets. As of December 31, 2019 and 2018, our aggregate environmental related accruals were \$2.5 million and \$2.7 million, respectively. As of December 31, 2019 and 2018, \$0.6 million and \$0.8 million, respectively, were included in current other accrued liabilities with the remainder included in other non-current liabilities. As related to certain environmental matters, the accruals were estimated at the low end of a range of possible outcomes since no amount within the range is a better estimate than any other amount. If we had accrued, for those sites where we are able to estimate our liability, at the high end of the range of possible outcomes, our accrual would have been \$16 million higher at December 31, 2019 and 2018.

These accruals can change significantly from period to period due to such factors as additional information on the nature or extent of contamination, the methods of remediation required, changes in the apportionment of costs among responsible parties and other actions by governmental agencies or private parties, or the impact, if any, of being named in a new matter.

Product Warranty

Warranty expense for the years ended December 31, 2019, 2018 and 2017, and accrued warranty cost, included in “other accrued liabilities” in the consolidated balance sheets were as follows:

(In millions)	Product Warranties
Balance as of December 31, 2016	\$ 5.5
Warranty expense	3.0
Deductions and other	(4.9)
Balance as of December 31, 2017	\$ 3.6
Warranty expense	4.6
Deductions and other	(3.4)
Balance as of December 31, 2018	\$ 4.8
Warranty expense	2.9
Deductions and other	(2.2)
Balance as of December 31, 2019	<u>\$ 5.5</u>

Note 16 — Supplemental Cash Flow

Supplemental cash flow information, for the years ended December 31, 2019, 2018 and 2017, consisted of the following:

(In millions)	2019	2018	2017
Cash paid for:			
Interest	\$ 44.7	\$ 37.2	\$ 22.6
Taxes	\$ 56.9	\$ 36.5	\$ 22.4

Note 17 — Accumulated Other Comprehensive Loss

Comprehensive income represents net income and other gains and losses affecting stockholders’ equity that are not reflected in the consolidated statements of operations. The components of accumulated other comprehensive loss as of December 31, 2019 and 2018 were as follows:

(In millions)	Unrecognized Net Defined Benefit Plan Costs	Change in Fair Value of Derivatives Products	Foreign Currency Translation	Total
Balance at December 31, 2017	\$ (18.5)	\$ 14.8	\$ (41.3)	\$ (45.0)
Other comprehensive loss before reclassifications	3.6	(22.1)	(45.5)	(64.0)
Amounts reclassified from accumulated other comprehensive loss	(0.5)	1.5	—	1.0
Other comprehensive loss	3.1	(20.6)	(45.5)	(63.0)
Balance at December 31, 2018	\$ (15.4)	\$ (5.8)	\$ (86.8)	\$ (108.0)
Other comprehensive loss before reclassifications	(6.2)	(12.8)	(2.6)	(21.6)
Amounts reclassified from accumulated other comprehensive loss	(0.8)	11.7	—	10.9
Other comprehensive loss	(7.0)	(1.1)	(2.6)	(10.7)
Balance at December 31, 2019	<u>\$ (22.4)</u>	<u>\$ (6.9)</u>	<u>\$ (89.4)</u>	<u>\$ (118.7)</u>

The amounts reclassified to earnings from the unrecognized net defined benefit plan costs component of accumulated other comprehensive loss for the year ended December 31, 2019 were net gains of \$1.0 million less taxes of \$0.2 million. The amounts reclassified to earnings from the change in fair value of the derivatives component of accumulated other comprehensive loss for the year ended December 31, 2019 were net losses of \$13.1 million less taxes of \$3.0 million related to foreign currency forward exchange contracts, net gains of \$1.3 million less taxes of \$0.2 million related to interest swaps and net losses of \$3.5 million less taxes of \$0.8 million related to commodity swaps.

The amounts reclassified to earnings from the unrecognized net defined benefit plan costs component of accumulated other comprehensive loss for the year ended December 31, 2018 were \$0.7 million less taxes of \$0.2 million. Amounts reclassified to earnings from the change in fair value of the derivatives component of accumulated other comprehensive loss for the year ended December 31, 2018 were not significant. The 2018 amounts include \$1.6 million for the reclass to retained earnings as a result of the adoption of ASU No. 2018-02, *Income Statement-Reporting Comprehensive Income*.

Note 18 — Segment Information

The financial results for our segments are prepared using a management approach, which is consistent with the basis and manner in which we internally segregate financial information for the purpose of assisting in making internal operating decisions. We evaluate the performance of our segments based on operating income, and generally account for intersegment sales based on arm's length prices. We report two segments, Composite Materials and Engineered Products. Corporate and certain other expenses are not allocated to the segments, except to the extent that the expense can be directly attributable to the segment. Corporate & Other is shown to reconcile to Hexcel's consolidated results.

In addition to the product line-based segmentation of our business, we also monitor sales into our principal end markets as a means to understanding demand for our products.

The following table presents financial information on our segments as of December 31, 2019, 2018 and 2017, and for the years then ended.

(In millions)	Composite Materials	Engineered Products	Corporate & Other	Total
Third-party sales				
2019	\$ 1,863.1	\$ 492.6	\$ —	\$ 2,355.7
2018	1,770.5	418.6	—	2,189.1
2017	1,597.1	376.2	—	1,973.3
Intersegment sales				
2019	\$ 83.4	\$ 0.8	\$ (84.2)	\$ —
2018	74.6	0.1	(74.7)	—
2017	63.6	0.4	(64.0)	—
Operating income (loss)				
2019	\$ 411.3	\$ 72.0	\$ (58.1)	\$ 425.2
2018	373.8	50.6	(53.2)	371.2
2017	359.4	48.7	(57.5)	350.6
Depreciation and amortization				
2019	\$ 126.5	\$ 15.1	\$ 0.1	\$ 141.7
2018	113.9	9.1	0.1	123.1
2017	96.8	7.5	0.2	104.5
Equity in earnings from affiliated companies				
2019	\$ (0.3)	\$ 4.3	\$ (0.3)	\$ 3.7
2018	—	5.6	—	5.6
2017	—	3.3	—	3.3
Other expense (income), net				
2018	\$ —	\$ 7.7	\$ —	\$ 7.7
Segment assets				
2019	\$ 2,669.6	\$ 465.2	\$ (6.2)	\$ 3,128.6
2018	2,501.9	272.9	49.3	2,824.1
2017	2,415.5	279.1	86.3	2,780.9
Investments in affiliated companies				
2019	\$ 2.2	\$ 36.1	\$ 8.2	\$ 46.5
2018	2.4	32.1	14.2	48.7
2017	—	26.5	21.2	47.7
Accrual basis additions to property, plant and equipment				
2019	\$ 185.8	\$ 5.2	\$ —	\$ 191.0
2018	173.5	5.6	—	179.1
2017	270.3	14.1	—	284.4

Geographic Data

Net sales and long-lived assets, by geographic area, consisted of the following for the three years ended December 31, 2019, 2018 and 2017:

(In millions)	2019	2018	2017
Net Sales by Geography (a):			
United States	\$ 1,246.9	\$ 1,055.9	\$ 937.3
International			
France	364.3	369.8	335.7
Spain	166.6	189.5	187.0
Germany	221.3	216.0	206.0
United Kingdom	168.9	167.3	160.4
Austria	110.1	111.4	86.1
Other	77.6	79.2	60.8
Total international	1,108.8	1,133.2	1,036.0
Total consolidated net sales	<u>\$ 2,355.7</u>	<u>\$ 2,189.1</u>	<u>\$ 1,973.3</u>
Net Sales to External Customers (b):			
United States	\$ 1,083.3	\$ 909.8	\$ 806.6
International			
Germany	212.8	233.1	217.7
France	191.9	201.7	161.5
Spain	188.0	194.1	199.4
United Kingdom	77.4	79.0	80.1
Other	602.3	571.4	508.0
Total international	1,272.4	1,279.3	1,166.7
Total	<u>\$ 2,355.7</u>	<u>\$ 2,189.1</u>	<u>\$ 1,973.3</u>
Long-lived Assets (c):			
United States	\$ 1,609.2	\$ 1,332.1	\$ 1,304.4
International			
France	387.1	397.7	402.7
United Kingdom	151.9	146.1	151.6
Spain	57.2	56.6	61.7
Other	84.3	86.3	94.6
Total international	680.5	686.7	710.6
Total consolidated long-lived assets	<u>\$ 2,289.7</u>	<u>\$ 2,018.8</u>	<u>\$ 2,015.0</u>

- (a) Net sales by geography based on the location in which the product sold was manufactured.
(b) Net sales to external customers based on the location to which the product sold was delivered.
(c) Long-lived assets primarily consist of property, plant and equipment, net and goodwill at December 31, 2019, 2018 and 2017. Also included at December 31, 2019 are right of use assets related to operating leases.

Significant Customers and Suppliers

Approximately 39%, 41% and 44% of our 2019, 2018 and 2017 net sales, respectively, were to Airbus and its subcontractors. Of the 39% of overall sales to Airbus and its subcontractors in 2019, 36% related to Commercial Aerospace market applications and 3% related to Space & Defense market applications. Approximately 25% of our net sales for 2019, 2018 and 2017 were to Boeing and related subcontractors. Of the 25% of overall sales to Boeing and its subcontractors in 2019, 23% related to Commercial Aerospace market applications and 2% related to Space & Defense market applications. In the Composite Materials segment approximately 17% of sales for 2019 and 16% for 2018 and 2017, were to Boeing and its subcontractors. Approximately 44%, 46% and 50% of sales for 2019, 2018 and 2017, respectively were to Airbus and its subcontractors. In the Engineered Products segment approximately 55%, 63% and 64% of sales for 2019, 2018 and 2017, respectively were to Boeing and its subcontractors.

A significant decline in business with Airbus or Boeing could materially impact our business, operating results, prospects and financial condition.

Certain key raw materials we consume are available from relatively few sources, and in many cases the cost of product qualification makes it impractical to develop multiple sources of supply. The lack of availability of these materials could under certain circumstances materially impact our consolidated results of operations.

Note 19 — Acquisitions

During the first quarter of 2019, we acquired all of the outstanding equity interests in ARC, a leading supplier of custom RF/EMI and microwave absorbing composite materials for military, aerospace and industrial applications, for \$163.2 million. This acquisition was accounted for as a business combination in accordance with ASC 805, *Business Combinations*. In connection with the acquisition, the Company recognized \$82.1 million of goodwill, and approximately \$63.0 million of intangible assets which are included in our Engineered Products segment.

During 2017, we completed two acquisitions, which were accounted for as business combinations in accordance with ASC 805, *Business Combinations*. We acquired all of the outstanding shares of Structil SA (“Structil”), which further enhances our technology portfolio with new adhesives prepreg and pultrusion technology. We also acquired the aerospace and defense business of Oxford Performance Materials (“OPM”), bringing thermoplastic, carbon fiber reinforced 3D printed parts to our product portfolio.

In connection with the acquisitions, the Company paid \$64.1 million in cash, and returned shares previously purchased approximately valued at \$20.0 million. In addition, the Company recognized a \$2.9 million liability for contingent consideration, which represents the present value of certain earn-out payment obligations tied to future results. These transactions combined resulted in the recognition of approximately \$38 million of goodwill, and approximately \$32 million of intangible assets, as well as certain assets and liabilities. We also made an additional investment in CCI.

Note 20— Fair Value Measurements

The fair values of our financial instruments are classified into one of the following categories:

- Level 1: Quoted prices (unadjusted) in active markets that are accessible at the measurement date for identical assets or liabilities. The fair value hierarchy gives the highest priority to Level 1 inputs.
- Level 2: Observable inputs other than quoted prices in active markets, but corroborated by market data.
- Level 3: Unobservable inputs are used when little or no market data is available. The fair value hierarchy gives the lowest priority to Level 3 inputs.

In determining fair value, we utilize valuation techniques that maximize the use of observable inputs and minimize the use of unobservable inputs to the extent possible as well as consider our own and counterparty credit risk. At December 31, 2019 and 2018, we had one liability which utilized level 3 inputs.

For derivative assets and liabilities that utilize Level 2 inputs, we prepare estimates of future cash flows of our derivatives, which are discounted to a net present value. The estimated cash flows and the discount factors used in the valuation model are based on observable inputs, and incorporate non-performance risk (the credit standing of the counterparty when the derivative is in a net asset position, and the credit standing of Hexcel when the derivative is in a net liability position). The fair value of these assets and liabilities was approximately \$4.3 million and \$21.7 million, and approximately \$2.2 million and \$18.4 million, respectively, at December 31, 2019 and 2018. In addition, the fair value of these derivative contracts, which are subject to a master netting arrangement under certain circumstances, is presented on a gross basis in the consolidated balance sheet.

Below is a summary of valuation techniques for all Level 2 financial assets and liabilities:

- Interest rate swap — valued using LIBOR yield curves at the reporting date. The fair value of the liabilities were \$0.6 million at December 31, 2019. The fair value of assets and liabilities were both \$0.6 million at December 31, 2018.
- Foreign exchange derivative assets and liabilities — valued using quoted forward foreign exchange prices at the reporting date. The fair value of assets and liabilities at December 31, 2019 was \$4.3 million and \$15.7 million, respectively. The fair value of assets and liabilities at December 31, 2018 was \$1.6 million and \$15.3 million, respectively.
- Commodity swap agreements — valued using quoted forward commodity prices at the reporting date. The fair value of liabilities at December 31, 2019 and 2018 was \$5.4 million and \$2.5 million, respectively.

Counterparties to the above contracts are highly rated financial institutions, none of which experienced any significant downgrades in 2019 that would reduce the receivable amount owed, if any, to the Company.

Liabilities classified as Level 3- during 2017 we recorded a contingent consideration liability related to our OPM acquisition for \$2.9 million, of which the balance was \$3.1 million and \$3.0 million at December 31, 2019 and 2018, respectively. Changes to the initial amount recorded relates to interest accretion only. This amount was estimated based on certain contractual stipulations which requires us to make payments to the seller in the future based upon the achievement of certain results. We used our current forecasted results of the acquired operations and discounted these future amounts using an internally derived discount rate. Future amounts payable may differ from this estimate by the difference between the actual and forecasted results.

Note 21 - Quarterly Financial and Market Data (Unaudited)

Quarterly financial and market data for the years ended December 31, 2019 and 2018 were:

(In millions, except per share data)	First Quarter	Second Quarter	Third Quarter	Fourth Quarter
2019				
Net sales	\$ 609.9	\$ 609.0	\$ 572.5	\$ 564.3
Gross margin	167.2	168.8	157.9	146.5
Operating income	102.8	115.1	109.9	97.4
Net income	72.2	80.9	80.3	73.2
Net income per common share:				
Basic	\$ 0.85	\$ 0.95	\$ 0.94	\$ 0.87
Diluted	\$ 0.84	\$ 0.94	\$ 0.93	\$ 0.86
Market price:				
High	\$ 72.65	\$ 80.88	\$ 85.33	\$ 80.29
Low	\$ 56.18	\$ 68.00	\$ 77.01	\$ 73.31
2018				
Net sales	\$ 540.1	\$ 547.5	\$ 540.5	\$ 561.0
Gross margin	142.6	144.8	143.0	150.4
Operating income	82.4	96.5	96.5	95.8
Net income	61.6	68.8	80.1	66.1
Net income per common share:				
Basic	\$ 0.68	\$ 0.77	\$ 0.92	\$ 0.78
Diluted	\$ 0.68	\$ 0.76	\$ 0.91	\$ 0.76
Market price:				
High	\$ 69.08	\$ 73.26	\$ 69.92	\$ 67.44
Low	\$ 61.67	\$ 63.37	\$ 65.30	\$ 53.76

Note 22 — Subsequent Event

On January 12, 2020, we entered into a definitive merger agreement with Woodward, Inc. (“Woodward”) to combine in an all stock merger of equals where Hexcel shareholders will receive a fixed exchange ratio of 0.625 shares of Woodward common stock for each share of Hexcel common stock, and Woodward shareholders will continue to own the same number of shares of common stock in the combined company as they do immediately prior to the closing. The exchange ratio is consistent with the 30-day average share prices of both companies. Upon completion of the merger, existing Woodward shareholders will own approximately 55% and existing Hexcel shareholders will own approximately 45% of the combined company on a fully diluted basis. The transaction is subject to approval by Woodward and Hexcel shareholders and the satisfaction of customary closing conditions and regulatory approvals. Woodward and Hexcel expect to complete the transaction in the third quarter of 2020.

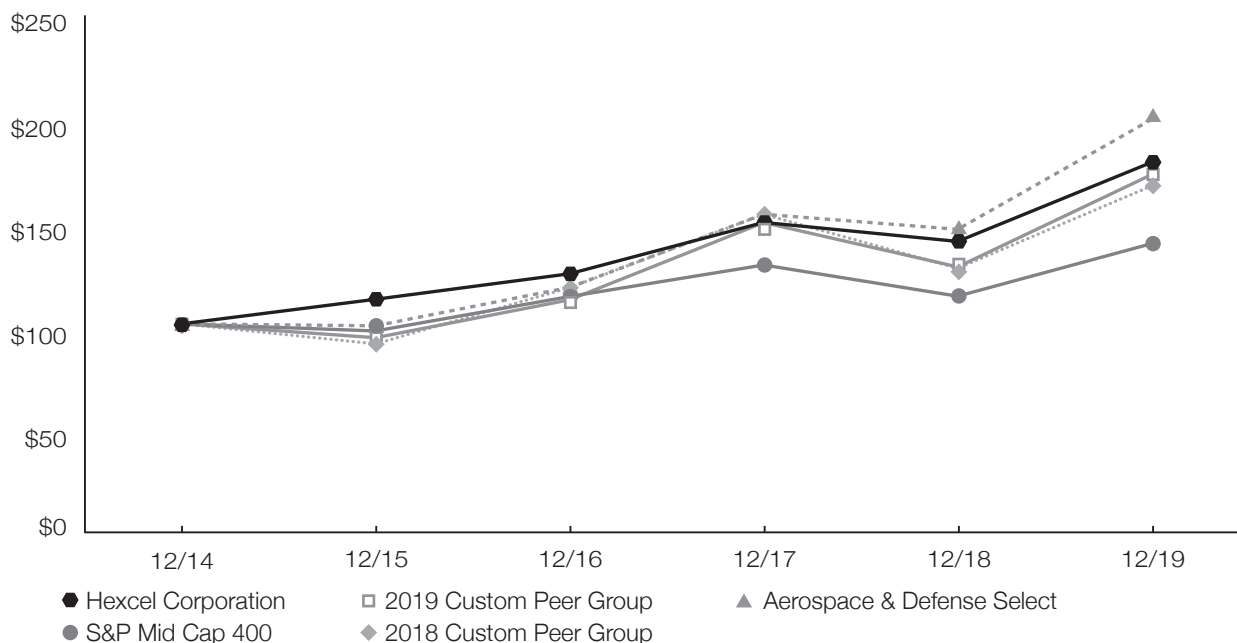
Schedule II

Hexcel Corporation and Subsidiaries
Valuation and Qualifying Accounts

(In millions)	Balance at beginning of year	Charged to expense/(recovery)	Deductions and other	Balance at end of year
Year ended December 31, 2019				
Allowance for doubtful accounts	\$ 0.3	\$ 0.3	\$ —	\$ 0.6
Valuation allowance for deferred tax assets	48.8	(4.1)	—	44.7
Year ended December 31, 2018				
Allowance for doubtful accounts	\$ 0.3	\$ 1.4	\$ (1.4)	\$ 0.3
Valuation allowance for deferred tax assets	54.9	(3.2)	(2.9)	48.8
Year ended December 31, 2017				
Allowance for doubtful accounts	\$ 0.4	\$ 1.5	\$ (1.6)	\$ 0.3
Valuation allowance for deferred tax assets	58.9	(10.6)	6.6	54.9

Comparison of Five-Year Cumulative Total Shareholder¹ Return—December 2014 through December 2019

Hexcel Corporation, S&P Aerospace and Defense Select Index, S&P MidCap 400, and the 2019 and 2018 Custom Peer Group



Date	Hexcel Corporation	S&P Aerospace & Defense Select Index	S&P MidCap 400	2019 Custom Peer Group	2018 Custom Peer Group
December 2014	\$100.00	\$100.00	\$100.00	\$100.00	\$100.00
December 2015	\$112.89	\$98.99	\$96.29	\$92.74	\$89.50
December 2016	\$126.26	\$119.14	\$114.33	\$112.61	\$118.97
December 2017	\$153.15	\$157.44	\$130.85	\$153.09	\$157.38
December 2018	\$143.20	\$149.53	\$114.50	\$129.85	\$129.11
December 2019	\$184.67	\$207.17	\$142.04	\$178.23	\$172.30

(1) Total shareholder return assuming \$100 invested on December 31, 2014 and reinvestment of dividends on daily basis.

Peer Group

2019 CUSTOM PEER GROUP

AAR Corp.
 Albemarle Corporation
 AMETEK, Inc.
 Barnes Group Inc.
 Cabot Corporation
 Crane Co.
 Curtiss-Wright Corporation
 Esterline Technologies Corp.
 HB Fuller Co.
 ITT Inc.
 Moog Inc.
 Teledyne Technologies Inc.
 Triumph Group Inc.
 Woodward, Inc.

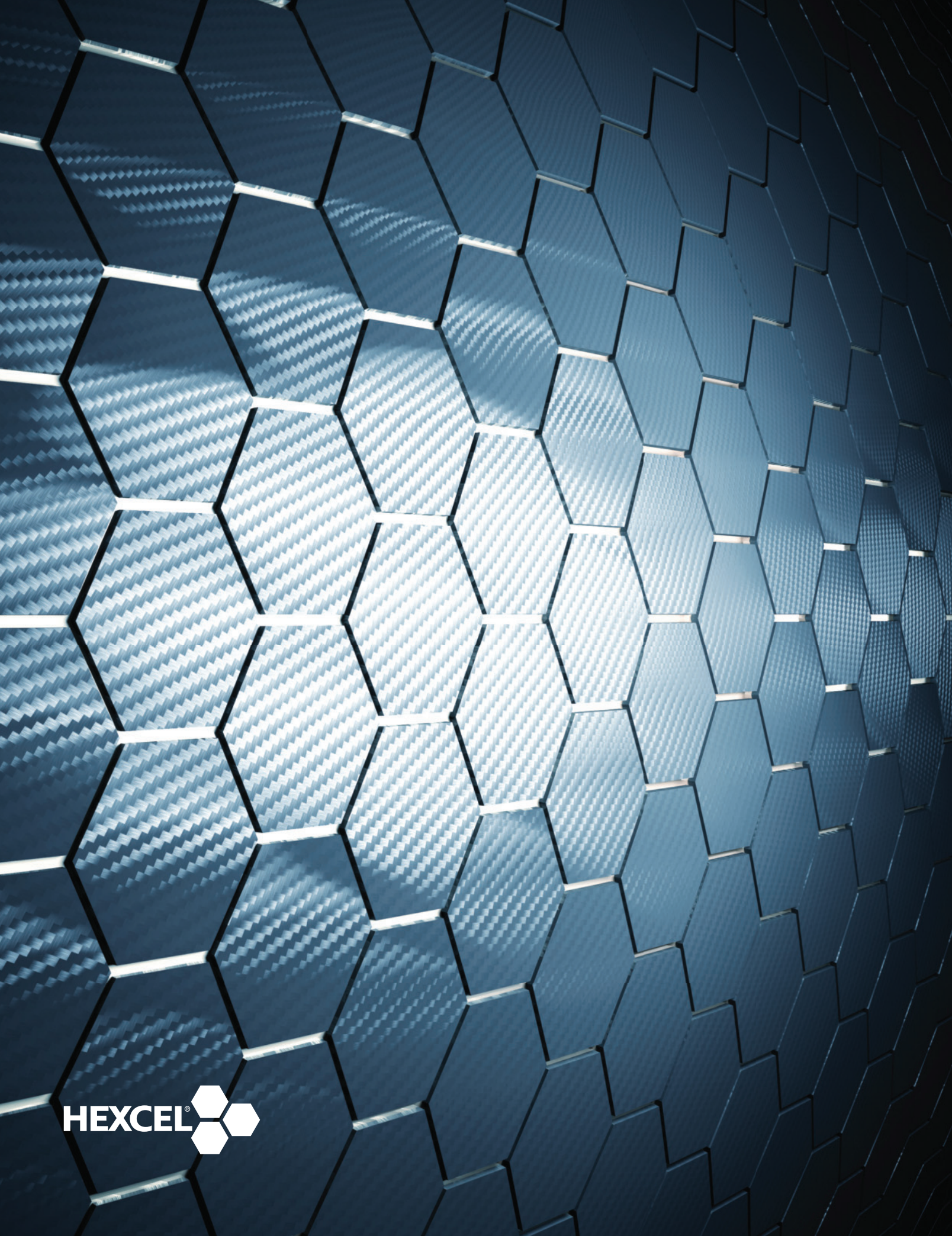
2018 CUSTOM PEER GROUP

A. Schulman, Inc²
 AAR Corp.
 Albemarle Corporation
 Barnes Group Inc.
 Cabot Corporation
 Crane Co.
 Curtiss-Wright Corporation
 Esterline Technologies Corp.
 HB Fuller Co.
 ITT Inc.
 Moog Inc.
 Orbital ATK, Inc³
 Rockwell Collins, Inc⁴
 Teledyne Technologies Inc.
 Triumph Group Inc.
 Woodward, Inc.

(2) As of August 21, 2018, A. Schulman, Inc. operates as a subsidiary of LyondellBasell Industries N.V.

(3) As of June 6, 2018, Orbital ATK, Inc. operates as a subsidiary of Northrop Grumman Innovation Systems, Inc.

(4) As of February 11, 2019, a Business Unit of Rockwell Collins, Inc. was acquired by Safran SA.



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