

HEXCEL CORP /DE/
Form 10-K
February 09, 2017

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, 2016

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 94-1109521
(State of Incorporation) (I.R.S. Employer Identification No.)

281 Tresser Boulevard

Stamford, Connecticut 06901

(Address of principal executive offices and zip code)

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

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

Title of each class	Name of each exchange on which registered
COMMON STOCK	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 if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K.

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes No

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

Large accelerated filer

Accelerated filer

Non-accelerated filer

Smaller reporting company

(Do not check if a smaller reporting company)

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

The aggregate market value of the registrant's common stock held by non-affiliates was \$3,823,178,724 based on the reported last sale price of common stock on June 30, 2016, 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.

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Class	Outstanding as of January 31, 2017
COMMON STOCK	91,508,774

Documents Incorporated by Reference:

Proxy Statement for Annual Meeting of Stockholders (to the extent specified herein) — Part III.

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, 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, Russia and Africa.

We are also a partner in a joint venture in Malaysia, which manufactures composite structures for Commercial Aerospace applications.

On January 5, 2016, we acquired the remaining 50% interest in Formax, which specializes in lightweight multi-axial fabrics. In 2016, we also made \$30 million of investments including acquiring an interest in Oxford Performance Materials (“OPM”) for \$15.0 million. OPM produces thermoplastic, carbon fiber reinforced 3D printed parts primarily for Commercial Aerospace and Space and Defense applications. We also issued an 8% convertible secured promissory note to Luminati Aerospace LLC (“Luminati”), in the amount of \$10 million. Luminati is an aerospace technology company focusing on research, development, testing, and manufacturing of next generation solar-electric unmanned aerial vehicles, or UAVs. Lastly, we invested \$5 million in Carbon Conversions Incorporated (“CCI”). CCI is a leader in carbon fiber recycling and repurposing.

Narrative Description of Business and Segments

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. The Engineered Products segment is comprised of lightweight high strength composite structures, molded components, engineered core and 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, 2016.

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, transport (cars, boats, 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	Raw materials for prepregs, fabrics and specialty reinforcements Filament winding for various aerospace, defense and industrial applications
	Fabrics, Multi-axials and Specialty Reinforcements	Raw materials for prepregs and honeycomb Composites and components used in aerospace, defense, wind energy, automotive, recreation, marine and other industrial applications
	Prepregs, Other Fiber-Reinforced Matrix Materials and Resins	Composite structures Commercial and military aircraft components Satellites and launchers Aero-engines Wind turbine and helicopter blades Cars, boats and trains Skis, snowboards, bicycles and hockey sticks
	Structural Adhesives	Bonding of metals, honeycomb and composite materials
	Honeycomb	Composite structures and interiors Impact and shock absorption systems Helicopter blades

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, multiaxials 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 (“RTM”), resin film infusion (“RFI”) or vacuum assisted resin transfer molding (“VARTM”) 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 Redux® 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. Honeycomb is also used in Acousti-Cap® where a non-metallic, permeable cap material is embedded into honeycomb core that is used in aircraft engine nacelles to dramatically reduce noise during takeoff and landing without adding a structural weight penalty. Aerospace is the largest market for honeycomb products. In addition, we produce honeycomb for our Engineered Products segment for use in manufacturing finished parts for airframe Original Equipment Manufacturers (“OEMs”).

In September 2014, the Company announced it would expand its carbon fiber capacity through the addition of new precursor and carbon fiber lines in Roussillon, France. Construction will be completed by the end of 2017 and qualifications will be completed in 2018. The following table identifies the key customers and the major manufacturing facilities of the Composite Materials segment:

COMPOSITE MATERIALS

KEY CUSTOMERS

Aernnova	Daher	Sikorsky, a Lockheed Martin Company
Airbus	Embraer	Solvay
AVIC	FACC	Spirit Aerosystems
Bell	General Electric	Textron
BMW	GKN	Toray
The Boeing Company	Leonardo	Trek
Bombardier	Nordam	Triumph
CFAN	Northrop Grumman	United Technologies
CFM International	Orbital ATK	Vestas
CTRM Aero Composites	Safran	Zodiac

MAJOR MANUFACTURING FACILITIES

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

Net sales for the Composite Materials segment to third-party customers were \$1,610 million in 2016, \$1,459 million in 2015 and \$1,421 million in 2014, which represented about 78% to 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, about 5% of our total production of composite materials in 2016 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, structural adhesives and advanced molding materials, using such manufacturing processes as autoclave processing, multi-axis numerically controlled machining, heat forming, compression molding and other composite manufacturing techniques.

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

SEGMENT	PRODUCTS	PRIMARY END-USES
ENGINEERED PRODUCTS	Composite Structures	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	Aircraft structural sub-components and semi-finished components used in helicopter blades, engine nacelles, and aircraft surfaces (flaps, wings, elevators and fairings)
	HexMC® molded composite parts	Complex geometric parts for commercial aircraft to replace traditionally metal parts including window frames, primary structure brackets and fittings as well as for certain industrial applications
	HexTool® Tooling	•Mold tools made from carbon fiber and high temperature resistant BMI or epoxy resin. Used in the manufacture of composite aircraft structures, providing a lower weight, easier to handle alternative to traditional metal tooling.

Net sales for the Engineered Products segment to third-party customers were \$394 million in 2016, \$403 million in 2015, and \$435 million in 2014, which represented about 19% to 22% of our net sales each year.

The Engineered Products segment has a 50% ownership interest in a Malaysian joint venture, Aerospace Composites Malaysia Sdn. Bhd. (“ACM”) with Boeing Worldwide Operations Limited. Under the terms of the joint venture agreement, Hexcel and The Boeing Company (“Boeing”) have transferred the manufacture of certain semi-finished composite components to this joint venture. Hexcel purchases the semi-finished composite components from the joint venture, and inspects and performs additional skilled assembly work before delivering them to Boeing. The joint venture also manufactures composite components for other aircraft component manufacturers. ACM had revenue of \$58 million in 2016, and \$69 million and \$64 million in 2015 and 2014, respectively.

In January 2016, the Company announced it would expand its global engineered honeycomb capacity by building a manufacturing plant in Casablanca, Morocco. The facility should be operational in the second half of 2017.

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	Burlington, Washington
Bombardier	Kent, Washington
CTRM Aero Composites	Pottsville, Pennsylvania
General Electric	Welkenraedt, Belgium
GKN	Alor Setar, Malaysia (JV)
Sikorsky, a Lockheed Martin Company	
Spirit Aerosystems	
United Technologies	

Financial Information About Segments and Geographic Areas

Financial information and further discussion of our segments and geographic areas, including external sales and long-lived assets, are contained under the caption “Management’s Discussion and Analysis of Financial Condition and Results of Operations” and in Note 16 to the accompanying consolidated financial statements of this Annual Report on Form 10-K.

Significant Customers

Approximately 41%, 35% and 31% of our 2016, 2015 and 2014 net sales, respectively, were to Airbus and its subcontractors. Of the 41% of overall sales to Airbus and its subcontractors in 2016, 37% related to Commercial Aerospace market applications and 4% related to Space & Defense market applications. Approximately 28%, 31% and 32% of our 2016, 2015 and 2014 net sales, respectively, were to Boeing and related subcontractors. Of the 28% of overall sales to Boeing and its subcontractors in 2016, 26% 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. 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:

	2016	2015	2014
Net Sales by Market			
Commercial Aerospace	71 %	69 %	66 %
Space & Defense	16	18	20
Industrial	13	13	14
Total	100 %	100 %	100 %
Net Sales by Geography (a)			
United States	48 %	51 %	50 %
Europe and China	52	49	50
Total	100 %	100 %	100 %

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

	2016	2015	2014
Net Sales to External Customers (b)			
United States	42 %	46 %	45 %
Europe	41	37	39
All Others	17	17	16
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 71% of our 2016 net sales. Approximately 89% of these revenues can be identified as sales to Airbus, Boeing and their subcontractors for the production of commercial aircraft. The remaining 11% of these revenues were for regional and business 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, have caused the industry to be the leader in the 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. The aftermarket for these products is very small as many of these materials are designed to last for the life of the aircraft. 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 2016 revenue passenger miles were 6.3% higher than 2015. 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 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. In 2011, both Airbus and Boeing announced new versions of their narrow body aircraft which will have new engines. Airbus's A320neo had its first customer delivery in January 2016, with 68 planes delivered in 2016 and 4,876 orders in backlog at December 31, 2016. Boeing's B737 MAX had its first flight on January 29, 2016 and is expected to enter service in 2017. In 2014, Airbus announced a new version of its A330, the A330neo, which will have new engines, and Boeing announced the B777X, a new version of the B777 with composite wings and new engines. It is expected that these 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. 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's 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, such as the B737 MAX, A330neo and the B777X, 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 11.1% (11.3% in constant currency) in 2016 and 6% in 2015 and 12% in 2014.

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

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Airbus	303	305	320	378	434	453	483	498	510	534	588	626	629	635	688

Boeing	381	281	285	290	398	441	375	481	462	477	601	648	723	762	748
Total	684	586	605	668	832	894	858	979	972	1,011	1,189	1,274	1,352	1,397	1,436

Approximately 89% 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 2016 were 1,436 aircraft, surpassing the previous high of 1,397 in 2015. Based on Airbus and Boeing public estimates, the combined deliveries in 2017 are expected to be just above 2016 levels. In 2016, the combined net orders reported by Airbus and Boeing were for 1,399 planes, bringing their backlog at December 31, 2016 to 12,589 planes or about nine years based on 2016 deliveries. 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 by the United States and certain European governments, including both commercial and military helicopters. We are currently qualified to supply materials to a broad range of helicopter, military aircraft and space programs, including the V-22 (Osprey) tilt rotor aircraft, A400M military transport, F-35 (joint strike fighter or JSF), and Blackhawk. No one program accounts for more than 12% 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 providing positive 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 reliance on 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.

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 for this market includes wind turbine blades, automotive, a wide variety of recreational products 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 over 50% of the sales and our primary customer is Vestas Wind Systems A/S. The Industrial markets also include sales to major end user sub-markets, in order of size based on our 2016 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” 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, 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. 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 63% of our total 2016 sales, and they have backlogs of 12,589 airplanes, or nearly nine years based on 2016 deliveries.

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 more than 80% 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, we have tripled our PAN and carbon fiber capacity since 2007 to serve the growing needs of our customers and our own downstream products and we are continuing to expand our capacity to meet our customers’ forecasted

requirements. 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. 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. We have over 1,450 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 \$46.9 million, \$44.3 million and \$47.9 million for R&T in 2016, 2015 and 2014, respectively. Our spending, on a constant currency basis, in 2016 was more than 10% higher than 2015 and in 2015 was about the same as 2014. 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 federal, state, local and foreign laws and regulations designed to protect the environment and to regulate the discharge of materials into the environment. 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, 2016 and 2015 were \$3.2 million and \$2.9 million, respectively. As of December 31, 2016 and December 31, 2015, \$1.4 million and \$1.1 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, 2016 and 2015. Environmental remediation spending charged directly to our reserve balance for 2016, 2015 and 2014, was \$0.8 million, \$2.6 million and \$4.9 million, respectively. In addition, our operating costs relating to environmental compliance were \$10.1 million, \$10.7 million and \$14.2 million, for 2016, 2015, and 2014, respectively, and were charged directly to expense. Capital expenditures for environmental matters approximated \$13.2 million, \$7.1 million and \$7.3 million for 2016, 2015 and 2014 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 13 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, Russia 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, 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, 2016, we employed 6,155 full-time employees and contract workers, 3,346 in the United States and 2,809 in other countries. Of the 6,155 full-time employees, approximately 17% 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, 2015 and 2014 was 5,897 and 5,663, 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 the Securities and Exchange Commission.

ITEM 1A. Risk Factors

An investment in our common stock or debt securities involves risks and uncertainties. You should consider the following risk factors carefully, in addition to the other information contained in this Annual Report on Form 10-K, before deciding to purchase any of our securities.

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, 2016, Airbus and Boeing had a combined backlog of 12,589 aircraft or nearly nine years of production at 2016 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 71% of our net sales for 2016 were derived from sales to the Commercial Aerospace industry, which includes 89% from Airbus and Boeing aircraft and 11% 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, changes in the propensity for the general public to travel by air (including as a result of terrorist events and any subsequent military response), 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.

The A350 had its first customer delivery in December 2014. Our content per plane is approximately \$5 million and it is our largest program. We expect sales of \$600 million per year when Airbus reaches its projected buildrates of 120 per year. 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, currency hedging and other actions.

A significant decline in business with Airbus, Boeing, Vestas, or other significant 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 89%, and in the Space & Defense market, approximately 33%, of our 2016 net sales were made to Airbus and Boeing and their related subcontractors. For the years ended December 31, 2016 and December 31, 2015, approximately 41% and 35% of our total consolidated net sales, respectively, were to Airbus, and its related subcontractors and approximately 28% and 31% of our total consolidated net sales were to Boeing and its related subcontractors, respectively. 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 and Vestas or any of our other significant 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.

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, 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 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 16% of our net sales in 2016 were to the Space & Defense market of which about 85% were related to military programs in the United States and other countries.

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 2016, 49% of our production and 58% 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 and political 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; (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; 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.

In addition, fluctuations in currency exchange rates may influence the profitability and cash flows of our business. For example, our European operations sell a portion 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 exchange and 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.

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 the U.S. Superfund law or similar state laws at several 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 13 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 retake 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

may in the future emit amounts of greenhouse gas that could 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 by the Company may entail certain operational and financial risks.

Over the past several years we have completed the strategic acquisition of a complementary manufacturing company, Formax (UK) Limited, as well as strategic investments in companies like Oxford Performance Materials and Carbon Conversions Inc. We expect to continue to explore complementary 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. From time to time, we have evaluated, and we expect that we will continue to evaluate, possible acquisition, investment, joint venture and/or divestiture transactions. At any given time we may be engaged in discussions or negotiations with respect to these types of activities or may have entered into non-

binding letters of intent. However, 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 such transactions or that such transactions will not present risks that could result in increased expenditures and could materially adversely affect our revenues and profitability.

Our forward-looking statements and projections may turn out to be inaccurate.

This Form 10-K includes 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”, “could”, “estimate”, “expect”, “intend”, “may”, “plan”, “predict”, “project”, “should”, “would”, “will” 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 has been completed; (d) expectations of composite content on new commercial aircraft programs and our share of those requirements; (e) expectations of growth in revenues from space and defense applications, including whether certain programs might be curtailed or discontinued; (f) expectations regarding growth in sales for wind energy, recreation, automotive and other industrial applications; (g) expectations regarding working capital trends and expenditures; (h) expectations as to the level of capital expenditures and when we will complete the construction and qualification of capacity expansions; (i) our ability to maintain and improve margins in light of the ramp-up of capacity and new facilities and the current economic environment; (j) the outcome of legal matters; (k) our projections regarding the realizability of net operating loss and tax credit carryforwards; and (l) the impact of various market risks, including fluctuations in interest rates, currency exchange rates, environmental regulations and tax codes, fluctuations in commodity prices, and fluctuations in the market price of our common stock, the impact of work stoppages or other labor disruptions and the impact of the above factors on our expectations of 2017 financial results and beyond. In addition, actual results may differ materially from the results anticipated in the forward looking statements due to a variety of factors, including but not limited to changing market conditions, increased competition, product mix, inability to achieve planned manufacturing improvements or to meet customer specifications, cost reductions and capacity additions, and conditions in the financial markets.

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: changes in general economic and business conditions; changes in current pricing and cost levels; changes in political, social and economic conditions and local regulations; foreign currency fluctuations; changes in aerospace delivery rates; reductions in sales to any significant customers, particularly Airbus, Boeing or Vestas; changes in sales mix; changes in government defense procurement budgets; changes in military aerospace programs technology; industry capacity; competition; disruptions of established supply channels, particularly where raw materials are obtained from a single or limited number of sources and cannot be substituted by unqualified alternatives; manufacturing capacity constraints; uncertainty regarding the likely exit of the U.K. from the European Union; and unforeseen vulnerability of our network and systems to interruptions or failures.

If one or more of these risks or uncertainties materialize, or if underlying assumptions prove incorrect, actual results may vary materially from those expected, estimated or projected. In addition to other factors that affect our operating

results and financial position, neither past financial performance nor our expectations should be considered reliable indicators of future performance. Investors should not use historical trends to anticipate results or trends in future periods. Further, our stock price is subject to volatility. Any of the factors discussed above could have an adverse impact on the price of our securities. In addition, failure of sales or income in any quarter to meet the investment community's expectations, as well as broader market trends, can have an adverse impact on the price of our securities. We do not undertake an obligation to update our forward-looking statements or risk factors to reflect future events or circumstances.

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 Avenieres, 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 our joint venture.

Manufacturing Facilities

Facility Location	Segment	Principal Products
United States:		
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
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 Avenieres, 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
Welkenraedt, Belgium	Engineered Products	Engineered Honeycomb Parts

The Casablanca and Roussillon facilities are currently under construction and both facilities should be operational in 2017, with qualifications for the Roussillon facility to be completed in 2018. We lease the land and buildings in Nantes, France and Tianjin, China; and the land on which the Burlington, Washington facility is located. We also lease portions of the facilities located in Casa Grande, Arizona, Pottsville, Pennsylvania, Kent, Washington 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. We estimate and accrue our liabilities resulting from such matters based on 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. Such estimates are not discounted to reflect the time value of money due to the uncertainty in estimating the timing of the expenditures, which may extend over several years.

While it is impossible to ascertain the ultimate legal and financial liability with respect to certain contingent liabilities and claims, we believe, based upon our examination of currently available information, our experience to date, and advice from legal counsel, that the individual and aggregate liabilities resulting from the ultimate resolution of these contingent matters, after taking into consideration our existing insurance coverage and amounts already provided for, will not have a material adverse impact on our consolidated results of operations, financial position or cash flows.

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 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 have been named as a potentially responsible party (“PRP”) with respect to several hazardous waste disposal sites that we do not own or control, 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 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 matters will not be material.

Lodi, New Jersey Site

Pursuant to the New Jersey Industrial Site Recovery Act, Hexcel entered into an Administrative Consent Order for the environmental remediation of a manufacturing facility we own and formerly operated in Lodi, New Jersey. Hexcel has completed all active investigation and remediation activities, including restoration of the river embankment and installation of a barrier to prevent contaminant migration and have received a Response Action Outcome. Hexcel is in the process of monitoring contaminant levels to support a Monitored Natural Attenuation program and therefore we believe the spending on this program is largely complete.

Lower Passaic River Study Area

Hexcel and a group of approximately 52 other PRPs comprise the Lower Passaic Cooperating Parties Group (the “CPG”). Hexcel and the CPG are subject to a May 2007 Administrative Order on Consent (“AOC”) to perform a Remedial Investigation/Feasibility Study (“RI/FS”) of environmental conditions in the Lower Passaic River watershed. 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 river. in addition to a “no action” option. The ROD calls for capping and dredging of the lower eight miles of the Passaic River, with the placement of an engineered cap over the entire eight miles, at an expected cost ranging from \$0.97 billion to \$2.07 billion, according to the EPA. Because the EPA has not yet selected a remedy for the upper nine miles of the Lower Passaic River, this estimate range does not include any costs related to a future remedy for the upper portion of the river. Now that it has issued the final ROD, the EPA will seek to hold some combination of the PRPs liable to perform the work selected through the ROD. At this point, we have not yet determined our allocable share of performing the selected remedy. However, based on a review of the Company’s position, and as no point within the range is a more probable outcome than any other point, the Company has

determined that its accrual is sufficient at this time. The total accrued liability related to this matter was \$2.1 million at December 31, 2016 and \$1.9 million at December 31, 2015. Despite the issuance of the final ROD, there continue to be many uncertainties associated with the selected remedy and the Company's allocable share of the remediation. Given those uncertainties, the amounts accrued may not be indicative of the amounts for which the Company is ultimately responsible and will be refined as events in the remediation process develop.

Kent, Washington Site

We were party to a cost-sharing agreement regarding the operation of certain environmental remediation systems necessary to satisfy a post-closure care permit issued to a previous owner of our Kent, Washington site by the EPA. Under the terms of the cost-sharing agreement, we were obligated to reimburse the previous owner for a portion of the cost of the required remediation activities. The previous owner, who also continues to own an adjacent site, has installed certain remediation and isolation technologies and is operating those in accordance with an order agreed with the State of Washington. This isolation is expected to ultimately prevent further migration of contaminants to our site and enable us to perform a cleanup of our site. We and the Washington Department of Ecology have reached an agreed order to perform certain cleanup activities on our site by certain deadlines, and we are in full compliance with the order as modified. The Department of Ecology has recently approved a reduced number of monitoring wells, to cease operation of the extraction wells and agreed with a plan for more active remediation going forward. The total accrued liability related to this matter was \$0.3 million and \$0.5 million at December 31, 2016 and December 31, 2015, respectively.

Omega Chemical Corporation Superfund Site, Whittier, California

We are a PRP at a former chemical waste site in Whittier, California. The PRPs at Omega have established a PRP Group, the “Omega PRP Group”, and are currently investigating and remediating soil and groundwater at the site pursuant to a Consent Decree with the EPA. The Omega PRP Group has attributed approximately 1.07% of the waste tonnage sent to the site to Hexcel. In addition to the Omega site specifically, the EPA is investigating the scope of regional groundwater contamination in the vicinity of the Omega site and issued a Record of Decision; the Omega PRP Group members have been noticed by the EPA as PRPs who will be required to be involved in the remediation of the regional groundwater contamination in that vicinity as well. As a member of the Omega PRP Group, Hexcel will incur costs associated with the investigation and remediation of the Omega site and the regional groundwater remedy, although 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 \$0.6 million at December 31, 2016 and \$0.3 million at December 31, 2015.

Environmental remediation reserve activity for the three years ended December 31, 2016 was as follows:

(In millions)	For the year ended December 31,		
	2016	2015	2014
Beginning remediation accrual balance	\$ 2.9	\$ 5.0	\$ 3.9
Current period expenses	1.2	0.5	6.0
Cash expenditures	(0.9)	(2.6)	(4.9)
Ending remediation accrual balance	\$ 3.2	\$ 2.9	\$ 5.0
Capital expenditures for environmental matters	\$ 13.2	\$ 7.1	\$ 7.3

Environmental Summary

Our estimate of liability as a PRP and our remaining costs associated with our responsibility to remediate the Lower Passaic River in New Jersey; Kent, Washington; and other sites are accrued in the consolidated balance sheets. As of December 31, 2016 and 2015, our aggregate environmental related accruals were \$3.2 million and \$2.9 million, respectively. As of December 31, 2016 and 2015, \$1.4 million and \$1.1 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, 2016 and 2015.

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 spending charged directly to our reserve balance was \$0.9 million and \$2.6 million for the years ended December 31, 2016 and 2015, respectively. In addition, our operating costs relating to environmental compliance charged directly to expense were \$10.1 million and \$10.7 million for the years ended December 31, 2016 and 2015.

ITEM 4. Mine Safety Disclosure

Not applicable.

PART II

ITEM 5. Market for Registrant's Common Equity and Related Stockholder Matters

Hexcel common stock is traded on the New York Stock Exchange. The range of high and low sales prices of our common stock on the New York Stock Exchange is contained in Note 20 to the accompanying consolidated financial statements of this Annual Report on Form 10-K and is incorporated herein by reference.

On January 25, 2017, the Board of Directors declared a \$0.11 quarterly dividend. The dividend will be payable to stockholders of record as of February 8, 2017, with a payment date of February 15, 2017. The Company announced programs to repurchase common stock of \$250 million in 2015 and \$150 million in each of the years 2014 and 2013. During 2016, 2015 and 2014 the Company repurchased a total of \$111 million, \$146 million and \$160 million of shares, respectively. There was \$93 million remaining under the authorized 2015 share repurchase program at December 31, 2016. On February 9, 2017, the Board of Directors authorized an additional \$300 million share repurchase program.

On January 31, 2017, there were 658 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, 2016	607,483	\$ 43.16	607,483	\$ 92,776,000
November 1 — November 30, 2016	—	\$ —	—	\$ 92,776,000
December 1 — December 31, 2016	—	\$ —	—	\$ 92,776,000
Total	607,483	(1) \$ 43.16	607,483	\$ 92,776,000

1) In October 2015, our Board authorized us to repurchase an additional \$250 million of our outstanding common stock. The Company repurchased \$26.2 million of common stock during the fourth quarter of 2016. There was \$92.8 million remaining under the current authorized share repurchase program at December 31, 2016. On February 9, 2017, our Board authorized us to repurchase an additional \$300 million of our outstanding common stock.

ITEM 6. Selected Financial Data

The information required by Item 6 is contained on page 25 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 26 to 36 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 36 to 38 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 44 to 78 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 41 to 43 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, 2016 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 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 contained in our definitive proxy statement for the 2017 Annual Meeting of Stockholders, which will be filed with the Securities and Exchange Commission within 120 days after the close of the fiscal year ended December 31, 2016. Such information is incorporated herein by reference.

ITEM 11. Executive Compensation

The information required by Item 11 will be contained in our definitive proxy statement for the 2017 Annual Meeting of Stockholders, which will be filed with the Securities and Exchange Commission within 120 days after the close of the fiscal year ended December 31, 2016. Such information is incorporated herein by reference.

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

The information required by Item 12 will be contained in our definitive proxy statement for the 2017 Annual Meeting of Stockholders, which will be filed with the Securities and Exchange Commission within 120 days after the close of the fiscal year ended December 31, 2016. Such information is incorporated herein by reference.

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

The information required by Item 13 will be contained in our definitive proxy statement for the 2017 Annual Meeting of Stockholders, which will be filed with the Securities and Exchange Commission within 120 days after the close of the fiscal year ended December 31, 2016. Such information is incorporated herein by reference.

ITEM 14. Principal Accountant Fees and Services

The information required by Item 14 will be contained in our definitive proxy statement for the 2017 Annual Meeting of Stockholders, which will be filed with the Securities and Exchange Commission within 120 days after the close of the fiscal year ended December 31, 2016. Such information is incorporated herein by reference.

PART IV

ITEM 15. Exhibits and 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, 2016 and 2015

Consolidated Statements of Operations for each of the three years ended December 31, 2016, 2015, and 2014

Consolidated Statements of Comprehensive Income for each of the three years ended December 31, 2016, 2015 and 2014

Consolidated Statements of Stockholders' Equity for each of the three years ended December 31, 2016, 2015 and 2014

Consolidated Statements of Cash Flows for each of the three years ended December 31, 2016, 2015 and 2014

Notes to the Consolidated Financial Statements

(2) Financial Statement Schedule for the three years ended December 31, 2016, 2015 and 2014:

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.

Exhibit No.	Description
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 Form of Indenture between Hexcel Corporation and U.S. Bank National Association (incorporated by reference to Exhibit 4.1 to the Company's Registration Statement on Form S-3 dated October 21, 2014, Registration No. 333-199500).

- 4.2 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).
- 4.3 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).
- 4.4 Form of Note for 4.700% Senior Notes due 2025 (incorporated by reference to Exhibit 4.3 to the Company's Current Report on Form 8-K dated August 3, 2015).
- 10.1 Credit Agreement, dated as of September 24, 2014, by and among Hexcel Corporation, Hexcel Holdings Luxembourg S.à.r.l., the financial institutions from time to time party thereto, Citizens Bank, National

Association, as
administrative agent
for the lenders,
Citizens Bank,
National
Association, HSBC
Bank USA, National
Association, Merrill
Lynch, Pierce,
Fenner & Smith
Incorporated and
Wells Fargo
Securities, LLC, as
joint book managers
and joint lead
arrangers, Bank of
America, N.A.,
HSBC Bank USA,
National Association
and Wells Fargo
Bank, National
Association, as
syndication agents,
and Fifth Third
Bank, SunTrust
Bank, TD Bank,
N.A. and U.S. Bank
National
Association, as
documentation
agents (incorporated
by reference to
Exhibit 99.1 to the
Company's Current
Report on Form 8-K
dated September 29,
2014).

Exhibit No.	Description
10.2	Company Guaranty, dated as of September 24, 2014, by Hexcel Corporation in favor of and for the benefit of Citizens Bank, National Association, as administrative agent for each of the Lender Group (as defined in the Credit Agreement) (incorporated by reference to Exhibit 99.2 to the Company's Current Report on Form 8-K dated September 29, 2014).
10.3*	Hexcel Corporation 2013 Incentive Stock Plan (incorporated herein by reference to Exhibit 4.4 to the Company's Registration Statement on Form S-8 (Registration No. 333-188292), filed on May 2, 2013).
10.4*	Hexcel Corporation 2003 Incentive Stock Plan (incorporated herein by reference to Exhibit 10.3 to the Company's Annual Report on Form 10-K/A for the fiscal year ended December 31, 2002, filed on March 31, 2003).
10.5(a)*	Hexcel Corporation 2003 Incentive Stock Plan as amended and restated December 11, 2003 (incorporated herein by reference to Exhibit 10.3(a) to the Company's Annual Report

on Form 10-K for the fiscal year ended December 31, 2003).

10.5(b)* Hexcel Corporation 2003 Incentive Stock Plan as amended and restated May 19, 2005 (incorporated herein by reference to Exhibit 99.2 to the Company's Current Report on Form 8-K dated May 24, 2005).

10.5(c)* Hexcel Corporation 2003 Incentive Stock Plan as amended and restated December 31, 2008 (incorporated herein by reference to Exhibit 99.12 to the Company's Current Report on Form 8-K dated January 7, 2009).

10.5(d)* 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).

10.6* Hexcel Corporation Management Incentive Compensation Plan, as Amended and Restated on December 8, 2016.

10.7* Hexcel Corporation Long-Term Incentive Plan (incorporated herein by reference to Exhibit 10.7 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2001).

10.8*

- Form of Employee Option Agreement (2014 - 2017).
- 10.9* 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).
- 10.10* Form of Employee Option Agreement (2010) (incorporated herein by reference to Exhibit 10.10 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2009).
- 10.11* Form of Employee Option Agreement (2009) (incorporated herein by reference to Exhibit 10.10 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2008).
- 10.12* Modification to Option Agreements (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, 2008).
- 10.13* Form of Employee Option Agreement (2008) (incorporated herein by reference to Exhibit 10.9 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2007).
- 10.14*

- Form of Employee Option Agreement (2007) (incorporated herein by reference to Exhibit 10.9 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2006).
- 10.15* Form of Restricted Stock Unit Agreement (2014 - 2017) (incorporated herein by reference to Exhibit 99.1 to the Company's Current Report on Form 8-K dated January 27, 2014).
- 10.16* Form of Performance Based Award Agreement (2017) (incorporated by reference to Exhibit 99.1 to the Company's Current Report on Form 8-K dated January 30, 2017).
- 10.17* Form of Performance Based Award Agreement (2015 and 2016) (incorporated by reference to Exhibit 99.1 to the Company's Current Report on Form 8-K dated January 26, 2015).
- 10.18* 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).
- 10.19* Offer of Employment between Hexcel

Corporation and Nick L.
Stanage 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).

Exhibit No.	Description
10.20*	Supplemental Executive Retirement Agreement dated October 28, 2009, between Nick L. Stanage 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).
10.21*	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).
10.22*	Amended and Restated Executive Severance Agreement between Hexcel Corporation and Wayne C. Pensky, dated December 31, 2008 (incorporated herein by reference to Exhibit 99.4 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 Wayne C. Pensky, dated December 31, 2007 (incorporated herein by reference to Exhibit 99.3 to the Company's Current Report on Form 8-K dated January 7, 2008).
10.24*	Amended and Restated Executive Severance Agreement between Hexcel Corporation and Ira J. Krakower, dated December 31, 2008 (incorporated herein by

- reference to Exhibit 99.5 to the Company's Current Report on Form 8-K dated January 7, 2009).
- 10.25* Amended and Restated Supplemental Executive Retirement Agreement dated December 31, 2008, between Ira J. Krakower and Hexcel Corporation (incorporated herein by reference to Exhibit 99.3 to the Company's Current Report on Form 8-K dated January 7, 2009).
- 10.26* 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).
- 10.27* 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).
- 10.28* Separation and Consulting Agreement between Hexcel Corporation and Ira J. Krakower, dated September 7, 2016 (incorporated by reference to Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q for the quarter ended September 30, 2016).
- 10.29*

- Director Compensation Program, as adopted on May 8, 2014 (incorporated herein by reference to Exhibit 10.37 to the Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 2014).
- 10.30* Form of Restricted Stock Unit Agreement for Non-Employee Directors (incorporated herein by reference to Exhibit 99 to the Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 2013).
- 10.31* Hexcel Corporation 2016 Employee Stock Purchase Plan (incorporated herein by reference to Annex B to the Company's Proxy Statement dated March 17, 2016).
- 21 Subsidiaries of the Company.
- 23.1 Consent of Ernst & Young LLP.
- 23.2 Consent of PricewaterhouseCoopers 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 The following materials from the Hexcel Corporation Annual Report on Form 10-K for the year ended December 31, 2016, formatted in Extensible Business Reporting Language (XBRL): (i) the Consolidated Statements of Operations, (ii) Consolidated Statements of Comprehensive Income (iii), Consolidated Balance Sheets, (iv) Consolidated Statements of Cash Flows, and (v) related notes.

* Indicates management contract or compensatory plan or arrangement.

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 9, 2017 /s/ NICK L. STANAGE

(Date) 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, Wayne C. Pensky and Gail Lehman, individually, his attorney-in-fact, with the power of substitution, for him 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 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
/s/ NICK L. STANAGE (Nick L. Stanage)	Chairman of the Board of Directors, Chief Executive Officer and President (Principal Executive Officer)	February 9, 2017
/s/ WAYNE PENSKY (Wayne Pensky)	Executive Vice President and Chief Financial Officer (Principal Financial Officer)	February 9, 2017
/s/ KIMBERLY HENDRICKS (Kimberly Hendricks)	Senior Vice President, Corporate Controller and Chief Accounting Officer (Principal Accounting Officer)	February 9, 2017
/s/ JOEL S. BECKMAN (Joel S. Beckman)	Director	February 9, 2017
/s/ LYNN BRUBAKER (Lynn Brubaker)	Director	February 9, 2017
/s/ JEFFREY C. CAMPBELL (Jeffrey C. Campbell)	Director	February 9, 2017
/s/ CYNTHIA EGNOTOVICH (Cynthia Egnotovich)	Director	February 9, 2017
/s/ W. KIM FOSTER (W. Kim Foster)	Director	February 9, 2017
/s/ THOMAS A. GENDRON (Thomas A. Gendron)	Director	February 9, 2017
/s/ JEFFREY A. GRAVES (Jeffrey A. Graves)	Director	February 9, 2017
/s/ GUY HACHEY (Guy Hachey)	Director	February 9, 2017
/s/ DAVID C. HILL (David C. Hill)	Director	February 9, 2017
/s/ DAVID L. PUGH (David L. Pugh)	Director	February 9, 2017

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)	2016	2015	2014	2013	2012
Results of Operations:					
Net sales	\$2,004.3	\$1,861.2	\$1,855.5	\$1,678.2	\$1,578.2
Cost of sales	1,439.7	1,328.4	1,346.7	1,224.2	1,171.5
Gross margin	564.6	532.8	508.8	454.0	406.7
Selling, general and administrative expenses	157.6	156.1	149.1	141.4	130.7
Research and technology expenses	46.9	44.3	47.9	41.7	36.7
Other expense (income), net	—	—	6.0	—	(9.5)
Operating income	360.1	332.4	305.8	270.9	248.8
Interest expense, net	22.1	14.2	8.0	7.3	10.0
Non-operating expense, net	0.4	—	0.5	1.0	1.1
Income before income taxes and equity in earnings	337.6	318.2	297.3	262.6	237.7
Provision for income taxes	90.3	83.0	89.3	76.0	74.1
Income before equity in earnings	247.3	235.2	208.0	186.6	163.6
Equity in earnings from affiliated companies	2.5	2.0	1.4	1.3	0.7
Net income	\$249.8	\$237.2	\$209.4	\$187.9	\$164.3
Basic net income per common share	\$2.69	\$2.48	\$2.16	\$1.88	\$1.64
Diluted net income per common share	\$2.65	\$2.44	\$2.12	\$1.84	\$1.61
Weighted-average shares outstanding:					
Basic	92.8	95.8	96.8	100.0	100.2
Diluted	94.2	97.2	98.7	102.1	102.0
Financial Position:					
Total assets	\$2,400.6	\$2,187.4	\$2,036.4	\$1,836.1	\$1,603.1
Working capital	\$335.1	\$341.2	\$371.1	\$387.7	\$340.4
Long-term notes payable and capital lease obligations	\$684.4	\$576.5	\$415.0	\$292.0	\$240.0
Dividends per share of common stock	\$0.44	\$0.40	\$—	\$—	\$—
Stockholders' equity	\$1,244.9	\$1,179.6	\$1,149.9	\$1,160.4	\$994.1
Other Data:					
Depreciation	\$93.3	\$76.4	\$71.2	\$59.3	\$57.2
Accrual basis capital expenditures	\$320.2	\$289.0	\$270.2	\$206.5	\$241.3
Shares outstanding at year-end, less treasury stock	91.4	93.5	95.5	98.9	99.9

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

Business Overview

(In millions, except per share data)	Year Ended December 31,		
	2016	2015	2014
Net sales	\$2,004.3	\$1,861.2	\$1,855.5
Gross margin %	28.2 %	28.6 %	27.4 %
Other expense, net	\$—	\$—	\$6.0
Operating income	\$360.1	\$332.4	\$305.8
Operating income %	18.0 %	17.9 %	16.5 %
Interest expense, net	\$22.1	\$14.2	\$8.0
Non-operating expense	\$0.4	\$—	\$0.5
Provision for income taxes	\$90.3	\$83.0	\$89.3
Equity in earnings from investments in affiliated companies	\$2.5	\$2.0	\$1.4
Net income	\$249.8	\$237.2	\$209.4
Diluted net income per common share	\$2.65	\$2.44	\$2.12

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

(In millions)	Year Ended December 31,		
	2016	2015	2014
GAAP operating income	\$360.1	\$332.4	\$305.8
Other expense, net (1)	—	—	6.0
Adjusted operating income (Non-GAAP)	\$360.1	\$332.4	\$311.8
Adjusted operating income % of sales (Non-GAAP)	18.0 %	17.9 %	16.8 %

(In millions)	Year Ended December 31,		
	2016	2015	2014
GAAP net income	\$249.8	\$237.2	\$209.4
Other expense, net of tax (1)	—	—	3.9
Non-operating expense, net of tax (2)	0.3	—	0.3
Discrete tax benefits (3)	(6.6)	(11.6)	—
Adjusted net income (Non-GAAP)	\$243.5	\$225.6	\$213.6
Adjusted diluted net income per share (Non-GAAP)	\$2.58	\$2.32	\$2.16

(In millions)	Year Ended December 31,		
	2016	2015	2014
Net cash provided by operating activities	\$401.4	\$301.0	\$318.0

Less: Capital expenditures	(327.9)	(305.3)	(260.1)
Free cash flow (Non-GAAP)	\$73.5	\$(4.3)	\$57.9

- (1) Other expense, net for the year ended December 31, 2014 included expense of \$6.0 million (\$3.9 million after tax) for the increase in environmental reserves primarily for remediation of a former manufacturing facility.
- (2) Non-operating expense, net of tax, in 2016 and 2014 was primarily for the accelerated amortization of deferred financing costs related to repaying the term loan and refinancing our revolving credit facility in June 2016 and September 2014.
 - (3) The year ended December 31, 2016 and 2015 included benefits of \$6.6 million and \$11.6 million, respectively, primarily related to the release of reserves for uncertain tax positions.

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 adjusted for items included in other expense, net; net income and earnings per share adjusted for items included in non-operating expenses; the effective tax rate adjusted for certain out of period items; and free cash flow. Management believes these non-GAAP measurements 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 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 as an alternative to GAAP measures of performance.

Business Trends

The Company had another record year, with total sales in 2016 reaching \$2.0 billion, a 7.9% increase in constant currency as compared to 2015. In constant currency and by market, our Commercial Aerospace sales increased 11.3%, Space & Defense sales were down 4.6% and our Industrial sales were up 7.4% from 2015. The Commercial Aerospace market represents 71% of our sales, followed by Space & Defense at 16% and Industrial at 13%.

In 2016, our Commercial Aerospace sales increased by 11.3% on a constant currency basis. Sales to Airbus and Boeing and their subcontractors, which comprised 89% of our Commercial Aerospace sales, were up more than 11% with new program sales (A350, B787, A320neo and B737 MAX) increasing more than 40% with the A350 and A320neo shipments leading the growth. Sales for the Airbus and Boeing legacy aircraft declined 8% driven by declines in legacy wide-body 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 2016 were a record 1,436 aircraft, compared to the previous record of 1,397 aircraft in 2015. 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 International Air Transport Association (IATA) estimates 2016 revenue passenger miles were 6.3% higher than 2015. Combined orders for Airbus and Boeing in 2016 were 1,399 planes, compared to 1,804 orders for 2015. Backlog at the end of 2016 increased to a record 12,589 planes, or nearly nine years of backlog at the 2016 delivery pace. Based on Airbus and Boeing announced projections, 2017 deliveries are estimated to be just above 2016.

Overall the Commercial Aerospace industry continues to utilize a greater proportion of advanced composite materials with each new generation of aircraft. These new programs include the A350, B787, A320neo and B737 MAX. Hexcel has been awarded a contract to supply carbon fiber composite materials for the major primary structures for the A350 and has total content of about \$5 million per plane. The A350 has about 53% composite content by weight. As of December 31, 2016, Airbus has 754 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, 2016, Boeing had a backlog of 700 orders for its B787 aircraft and has delivered 500 planes. Both Airbus and Boeing have announced new versions of their narrowbody planes that will have new engines. Airbus's A320neo had its first customer delivery in January 2016, with 68 planes delivered in 2016 and 4,876 orders in backlog at December 31, 2016. Hexcel's content on the A320neo is approximately \$450,000 per plane or about 50% higher than the prior derivative of the A320. Boeing's B737 MAX had its first flight on January 29, 2016 and is expected to enter service in 2017. Hexcel's content on the B737 MAX is approximately \$400,000 per aircraft or about 33% higher than the B737. In 2014, Airbus announced a new version of its A330, the A330neo, which will have new engines, and Boeing announced the B777X, a new version of the B777 with composite wings and new engines. Our content on the A330neo is estimated at \$1.05 million as compared to \$900,000 for the A330. Our content on the B777X is expected to be higher than the \$1 million per shipset for the B777. Our sales on these new programs represent an increasing percent of our Commercial Aerospace sales.

The regional and business aircraft market sales, which account for 11% of Commercial Aerospace sales, were down 3.7% compared to 2015 of which currency made up about 2% of the decline.

Our Space & Defense constant currency sales were down about 4.6%, the same in constant currency, from 2015. The decline in 2016 comes from lower rotorcraft sales. Rotorcraft, with about 85% coming from military programs, account for just more than 50% of our Space & Defense sales. 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 V-22 (Osprey) tilt rotor aircraft, A400M military transport, F-35 (joint strike fighter or JSF), and Blackhawk. No one program accounts for more than 12% of our revenues in this market.

Our Industrial sales were up 6.4% (7.4% in constant currency). Industrial sales include wind energy, recreation, transportation and general industrial applications, with wind energy accounting for more than half of the total Industrial sales. About 70% of our Industrial sales are outside of the U.S. The wind energy submarket sales were in line as compared to 2015. The rest of Industrial sales were up about 20%, in constant currency, as the benefit from the Formax acquisition was partially offset by weakness in recreation and other industrial submarkets.

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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 16 to the accompanying consolidated financial statements of this Annual Report on Form 10-K.

Net Sales: Consolidated net sales of \$2,004.3 million for 2016 were \$143.1 million, or 7.7%, higher than the \$1,861.2 million of net sales for 2015. Consolidated net sales in 2015 increased 0.3% from the \$1,855.5 million of sales in 2014. The sales increase in both 2016 and 2015 reflect increased volume in Commercial Aerospace driven by new aircraft programs and increased build rates. The increase in 2016 sales was led by the ramp up of the A350 and the A320neo. Had the same U.S. dollar, British Pound sterling and Euro exchange rates applied in 2015 as in 2016 (“constant currency”), consolidated net sales for 2016 would have been 7.9% higher than 2015. In constant currency, consolidated net sales for 2015 would have been 3.6%, higher than 2014 net sales.

Composite Materials: Net sales of \$1,610.0 million for 2016 increased \$151.3 million from the \$1,458.7 million for 2015 driven by an increase in Commercial Aerospace sales as a result of new programs, primarily the A350 and the A320neo. Space & Defense were 3.1% lower than 2015 and Industrial sales increased 8.0%. The increase in Industrial sales was driven the Formax acquisition partially offset by weakness in recreation and other industrial submarkets. In 2015, net sales of \$1,458.7 million increased \$37.8 million from the \$1,420.9 million for 2014 driven by an increase in Commercial Aerospace sales. Space & Defense sales remained at essentially the same level as 2014 and Industrial sales decreased 10.4%. The decrease in Industrial sales was driven by unfavorable foreign exchange, as on a constant currency basis sales were relatively flat with 2014.

Engineered Products: Net sales of \$394.3 million for 2016 decreased \$8.2 million from the \$402.5 million for 2015 driven by a more than 10% decrease in Space & Defense sales. The decline in Space & Defense sales in 2016 was driven by lower commercial rotorcraft sales. Net sales of \$402.5 million for 2015 decreased \$32.1 million from the \$434.6 million for 2014 driven by a 30% decrease in Space & Defense sales. The decline in Space & Defense sales in 2015 was across all regions and reflects the C-17 program coming to an end combined with a 25% decline in commercial rotorcraft. 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 2016, 2015 and 2014:

(In millions)	Commercial Aerospace	Space & Defense	Industrial	Total
2016 Net Sales				
Composite Materials	\$1,100.5	\$256.4	\$253.1	\$1,610.0
Engineered Products	328.8	65.3	0.2	394.3
Total	\$1,429.3	\$321.7	\$253.3	\$2,004.3
	71	% 16	% 13	% 100
2015 Net Sales				
Composite Materials	\$959.7	\$264.6	\$234.4	\$1,458.7
Engineered Products	326.2	72.7	3.6	402.5
Total	\$1,285.9	\$337.3	\$238.0	\$1,861.2

	69	%	18	%	13	%	100	%
2014 Net Sales								
Composite Materials	\$887.6		\$271.6		\$261.7		\$1,420.9	
Engineered Products	327.7		104.2		2.7		434.6	
Total	\$1,215.3		\$375.8		\$264.4		\$1,855.5	
	66	%	20	%	14	%	100	%

Commercial Aerospace: Net sales to the Commercial Aerospace market increased \$143.4 million or 11.1% to \$1,429.3 million for 2016 as compared to net sales of \$1,285.9 million for 2015; 2015 net sales increased by \$70.6 million as compared to net sales of \$1,215.3 million for 2014. In constant currency, net sales to the Commercial Aerospace market increased \$145.3 million or 11.3% in 2016 and increased \$90.7 million or 7.6% in 2015 compared to 2014.

Sales for Airbus and Boeing programs, in 2016, were up 11% with new program sales (A350, B787, A320neo and B737 MAX) increasing more than 40% and legacy aircraft related sales decreasing 8%, driven by declines in legacy wide-body production and the transition from legacy narrowbodies to new programs (A320neo and B737MAX). Sales for the regional and business aircraft market were down slightly for the full year as compared to 2015.

In 2015, sales for Airbus and Boeing programs increased 6% with new program sales (A350, B787, A320neo and B737 MAX) increasing about 40% and legacy aircraft related sales decreasing 5%, driven by declines in legacy wide-body production. Sales for the regional and business aircraft market were down 9.7% as compared to 2014 but were about the same on a constant currency basis.

Space & Defense: Net sales of \$321.7 million were \$15.6 million lower than 2015; net sales of \$337.3 million in 2015 decreased \$38.5 million from 2014. The decline in 2016 sales was driven by lower commercial rotorcraft sales. In 2015, constant currency sales were down about 7% from 2014. The decline in 2015 was across all regions and included the end of the C17 program and a 25% decline in commercial rotorcraft, the planned decline in Eurofighter buildrates, lumpiness from new helicopter programs such as the CH53K, and unanticipated softness in several mature rotorcraft programs. For all of Space & Defense sales, our top 10 programs accounted for about 56% of total Space & Defense sales and in aggregate were slightly higher for the full year of 2015 than for the comparable 2014 period. In 2016, rotorcraft accounted for just above 50% of Space & Defense sales, with about 85% coming from military sales. Hexcel participates in a wide range of programs, in the U.S., Europe and Asia, including rotorcraft, transport, fixed wing and satellite programs.

Industrial: Net sales of \$253.3 million for 2016 increased by \$15.3 million, or 6%, compared to 2015; net sales of \$238.0 in 2015 decreased by \$26.4 million or 10% from 2014. Our Industrial constant currency sales were about the same in 2015 as in 2014. Industrial sales include wind energy, recreation, transportation and general industrial applications, with wind energy accounting for more than half of the total Industrial sales. About 70% of our Industrial sales are outside of the U.S. The wind energy submarket sales were stable for all three years. In 2016, the rest of Industrial sales were up about 20% in constant currency as the benefit from the Formax acquisition was partially offset by weakness in recreation and other industrial submarkets. The rest of Industrial sales were down about 2% in constant currency in 2015.

Gross Margin: Gross margin for 2016 was \$564.6 million or 28.2% of net sales as compared to \$532.0 million or 28.6% of net sales in 2015. Exchange rates had a nominal impact on 2016 gross margin percentages and in 2015 exchange rates contributed just under half of the percentage increase. Higher volume and continued improvements in operating performance also contributed to margin growth in 2015. Gross margin for 2014 was \$508.8 million, or 27.4% of net sales.

Selling, General and Administrative (“SG&A”) Expenses: SG&A expenses were \$157.6 million or 7.9% of net sales for 2016, \$156.1 million or 8.4% of net sales for 2015 and \$149.1 million or 8.0% of net sales for 2014. The increase in 2015 SG&A from 2014 reflects added infrastructure to support our growth, including almost \$10 million more than 2014 on information technology expenses as we completed the implementation of a new ERP system and we continued to invest in other systems. The small decrease in 2016 information technology expenses helped keep the total 2016 spend to just a modest level as compared to 2015.

Research and Technology (“R&T”) Expenses: R&T expenses for 2016 were \$46.9 million or 2.3% of net sales; \$44.3 million or 2.4% of net sales in 2015 and \$47.9 million or 2.6% of net sales in 2014. On a constant currency basis, the expenses in 2016 were more than 10% above 2015 and about the same for 2015 as compared to 2014. We continued to invest in new products and technology to support our growth and productivity initiatives.

Other Income, Net: Other operating income, net for the year ended December 31, 2014, included other expense of \$6.0 million for the increase in environmental reserves primarily for remediation related to a former manufacturing facility.

Operating Income: Operating income for 2016 was \$360.1 million compared with operating income of \$332.4 million for 2015 and \$305.8 million for 2014. Operating income as a percent of sales was 18.0%, 17.9% and 16.5% in 2016,

2015, and 2014, respectively. Improved gross margin and the benefits from exchange rates (discussed below) drove the increase in operating margin in 2015.

One of the Company's performance measures is operating income adjusted for other expense, which is a non-GAAP measure. Adjusted operating income for the year ended December 31, 2014 was \$311.8 million or 16.8%. There were no adjustments to the 2016 and 2015 operating income of \$360.1 million or 18.0% of net sales and \$332.4 million or 17.9% of net sales, respectively. A reconciliation from operating income to adjusted operating income is provided on page 26.

Almost all of the Company's sales and costs are either in U.S. dollars, Euros or British Pound sterling, with approximately one-quarter 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 had a 40 basis point and 90 basis point favorable impact on 2016 and 2015 operating margin, respectively, and a nominal impact on our operating margin in 2014.

Operating income for the Composite Materials segment increased \$32.1 million to \$368.3 million from \$336.2 million in 2015. Operating income for Composite Materials was \$308.8 million in 2014. The consistent growth in operating income for the Composite Materials segment was driven primarily by higher commercial aerospace sales volume. Operating income for the year ended December 31, 2016 for the Engineered Products segment decreased \$5.8 million to \$50.0 million. Operating income for the Engineered Products segment in 2015 decreased by \$11.2 million compared with 2014 to \$55.8 million. The decline in profitability over the three years was driven by the decline in sales, primarily rotorcraft. Also, 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 in the 12% –14% range for Engineered Products will produce very good returns on invested capital.

We did not allocate corporate net operating expenses of \$58.2 million, \$59.6 million and \$70.0 million to segments in 2016, 2015, and 2014, respectively. Corporate and Other in 2014 included \$6.0 million of other expenses, as discussed above.

Interest Expense: Interest expense was \$22.1 million for 2016, \$14.2 million for 2015 and \$8.0 million for 2014. Interest expense increased in both periods due to a higher average interest rate on debt outstanding as a result of the Company issuing, in August 2015, \$300 million in aggregate principal amount of 4.7% Senior Unsecured Notes due in 2025. In addition, debt increased as we completed \$111 million of share buybacks and paid a total of \$39.8 million of dividends in 2016 and \$146 million of share buybacks and paid a total of \$38.3 million of dividends in 2015.

Non-operating Expense: As a result of the refinancing of the Senior Credit Facility in 2016 and 2014, we accelerated the unamortized deferred financing costs related to the previous borrowings, incurring a cost of \$0.4 million (\$0.3 million after tax) and \$0.5 million (\$0.3 million after tax), respectively.

Provision for Income Taxes: Our 2016, 2015 and 2014 tax provision was \$90.3 million, \$83.0 million and \$89.3 million for an effective tax rate of 26.8%, 26.1% and 30.0%, respectively. The 2016 and 2015 effective tax rates included a \$6.6 million and a \$11.6 million benefit primarily related to the release of reserves for uncertain tax positions as well as other benefits recorded during the year, respectively. Excluding the impact of these and other discrete items, the 2016, 2015 and 2014 effective tax rates were 30.0%, 30.9% and 30.6%, 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 represents our portion of the earnings from our joint venture in Malaysia. Equity in earnings in 2015 also included our portion of the earnings from our former joint venture in the United Kingdom which we acquired in January 2016.

Net Income: Net income was \$249.8 million, or \$2.65 per diluted share, for the year ended December 31, 2016, compared to \$237.2 million, or \$2.44 per diluted common share for 2015 and \$209.4 million, or \$2.12 per diluted common share for 2014. Strong sales volume, particularly in the Commercial Aerospace market, coupled with good cost control led the growth in earnings from 2014 through 2016. Also see the table on page 26 for a reconciliation of GAAP net income from continuing operations to our adjusted “Non-GAAP” measure.

Significant Customers

Approximately 41%, 35% and 31% of our 2016, 2015 and 2014 net sales, respectively, were to Airbus and its subcontractors. Of the 41% of overall sales to Airbus and its subcontractors in 2016, 37% related to Commercial Aerospace market applications and 4% related to Space & Defense market applications. Approximately 28%, 31%

and 32% of our 2016, 2015 and 2014 net sales, respectively, were to Boeing and related subcontractors. Of the 28% of overall sales to Boeing and its subcontractors in 2016, 26% related to Commercial Aerospace market applications and 2% related to Space & Defense market applications.

Financial Condition

In 2016, we ended the year with total debt, net of cash, of \$653.5 million and generated \$73.5 million of free cash flow (cash provided by operating activities less cash paid for capital expenditures). In 2016, the Company bought back \$111 million of shares, and as of December 31, 2016, has \$93 million remaining under its currently authorized share repurchase program. We also paid \$39.8 million of dividends in 2016. In 2017, we expect our capital spending to be in the range of \$270 million to \$290 million as we expand capacity in line with our outlook, resulting in expected positive free cash flow of more than \$100 million. We expect our typical use of cash in the first half of 2017, which will be funded by our available borrowings under our Facility.

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

Liquidity

Our cash on hand at December 31, 2016 was \$35.2 million and we had \$332.9 million borrowings available under our credit facility. Our total debt as of December 31, 2016 was \$688.7 million, an increase of \$112.2 million from the December 31, 2015 balance. The increase in debt primarily reflects \$111 million of stock repurchases, \$40 million of dividend payments and \$39 million of investments and the assumption of approximately \$8 million of debt from the Formax acquisition, partially offset by \$74 million of free cash flow.

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

In August 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%. The rate at December 31, 2016 was 4.7%. The net proceeds of approximately \$296.4 million were initially used to repay, in part, our Senior Unsecured Revolving Credit Facility (the "Facility").

Short-term liquidity requirements consist primarily of normal recurring operating expenses and working capital needs, capital expenditures, 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 revolving credit facility. As of December 31, 2016, 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 2021 when the Facility expires.

Credit Facilities: In June 2016, the Company amended and extended its \$700 Facility. The maturity of the Facility was extended from September 2019 to June 2021. The amendment also provided for a modest reduction in interest costs, as well as less restrictive covenants. The interest rate for the revolver at year-end was LIBOR + 1.125%. The interest rate ranges from LIBOR + 0.875% to a maximum of LIBOR + 1.875%, depending upon the Company's leverage ratio. At December 31, 2016, total borrowings under our \$700 million Facility were \$365 million. The Facility permits us to issue letters of credit up to an aggregate amount of \$40 million. Outstanding letters of credit reduce the amount available for borrowing under our revolving loan. As of December 31, 2016, we had issued letters of credit under the Facility totaling \$2.1 million, resulting in undrawn availability under the Facility as of December 31, 2016 of \$332.9 million.

The Facility contains financial and other covenants, including, but not limited to, restrictions on the incurrence of debt and the granting of liens, as well as the maintenance of an interest coverage ratio and a leverage ratio. In accordance with the terms of the Facility, we are required to maintain a minimum interest coverage ratio of 3.50 (based on the ratio of EBITDA, as defined in the credit agreement, to interest expense) and may not exceed a maximum leverage ratio of 3.50 (based on the ratio of total debt to EBITDA) throughout the term of the Facility. In addition, the Facility contains other terms and conditions such as customary representations and warranties, additional covenants and customary events of default. The conditions and covenants related to the senior notes are less restrictive than those of our Facility. As of December 31, 2016, we were in compliance with all debt covenants and expect to remain in compliance.

In June 2016, we also entered into a €60 million (\$67.4 million) term loan (“Euro loan”). The loan has two tranches of which the first tranche for €25 million has a six-month availability period at a rate of Euribor +1.2% and a final maturity date of June 30, 2023. The second tranche for €35 million has a one-year availability period at a rate of Euribor +1.25% and a final maturity date of June 30, 2024. There is a zero percent floor on the Euribor. The loans are payable in annual installments, beginning on June 30, 2017 and June 30, 2019, respectively. We had \$26.4 million (€25 million) outstanding under this loan at December 31, 2016.

We have a \$10.0 million borrowing facility for working capital needs of our Chinese entity with no outstanding balance at December 31, 2016. These funds can only be used locally and, accordingly, we do not include this facility in our borrowing capacity disclosures. The facility is guaranteed by Hexcel Corporation but is uncommitted and can be cancelled at any time.

Operating Activities: We generated \$401.4 million in cash from operating activities during 2016, an increase of \$100.4 million from 2015 reflecting higher earnings and lower working capital usage. Cash generated from operating activities during 2015 was \$301.0 million, a decrease of \$17.0 million from 2014 as higher earnings were offset by higher working capital usage.

Investing Activities: Cash used for investing activities, primarily for capital expenditures, was \$366.5 million in 2016 compared to \$305.3 million in 2015 and \$270.4 million in 2014. 2016 also includes \$30 million of investments in affiliates and \$8.6 million for the Formax acquisition as discussed below.

In 2016, we acquired an interest in Oxford Performance Materials (“OPM”) for \$15.0 million. OPM produces thermoplastic, carbon fiber reinforced 3D printed parts for Commercial Aerospace and Space and Defense applications. In addition, if OPM achieves certain milestones within an 18-month period or at Hexcel’s discretion, the Company will invest an additional \$10 million. The additional \$10 million investment was made on January 31, 2017. We issued an 8% convertible secured promissory note to Luminati Aerospace LLC (“Luminati”), in the amount of \$10 million. Luminati is an aerospace technology company focusing on research, development, testing, and manufacturing of next generation solar-electric unmanned aerial vehicles, or UAVs. The note matures in 2023 and the principal and interest are convertible into Luminati stock. The note will convert upon Luminati achieving certain milestones or at Hexcel’s discretion. We also invested \$5 million in Carbon Conversions Incorporated (“CCI”). CCI is a leader in carbon fiber recycling and repurposing. We account for these three investments using the cost method.

In January 2016 the Company acquired the remaining 50% ownership of Formax (UK) Limited (“Formax”). The Company previously acquired a 50% interest in the privately-owned company in December 2014. Located in Leicester, U.K., Formax is a leading manufacturer of composite reinforcements, specializing in the production of lightweight carbon multi-axials and highly engineered glass fiber and aramid fiber fabrics.

The Company is in the process of expanding capacity over a multi-year period, primarily for the manufacture of carbon fiber and prepregs to support aerospace growth. These capital projects require large expenditures and long lead times, some taking more than two years to complete. We are also constructing a \$250 million facility in Roussillon, France that is expected to be completed in 2017 and qualified in 2018. More than 85% of the \$454 million in construction in progress as of December 31, 2016 represents spending on expansion projects primarily at our Roussillon, France; Decatur, Alabama; Salt Lake City, Utah; and Duxford England facilities. We expect a majority of these projects to be placed in service during 2017.

Financing Activities: Financing activities were a use of cash of \$46.8 million in 2016 as compared to \$10.9 million in 2015 and \$36.9 million in 2014. In 2016 and 2014 we had borrowings, net of repayments, from our Facility of \$85 million and \$123 million, respectively. In 2015 we had Facility repayments, net of borrowings, of \$135.0. We also had \$26 million of borrowings from our Euro loan in 2016. We paid \$39 million in dividends in 2016 and \$38 million in 2015.

In August 2015, the Company issued \$300 million aggregate principle 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, 2016 remains at 4.7%. The net proceeds of approximately \$296.4 million were initially used to repay, in part, our Facility. The Company also repurchased stock as described below.

In October 2015, our Board authorized the repurchase of an additional \$250 million of the Company’s stock (“2015 Repurchase Plan”). During 2016 and 2015, the Company spent \$111.1 million and \$146.1 million to repurchase common stock. This included \$100 million to complete the 2014 Repurchase Plan and \$157.2 million under the 2015 Repurchase Plan to repurchase common stock.

In June 2014, our Board authorized a plan to repurchase \$150 million of our outstanding common stock (“2014 Repurchase Plan”). In July 2013, our Board authorized us to repurchase \$150 million of our outstanding common stock (“2013 Repurchase Plan”), which was completed during the second quarter of 2014. During 2014, the Company spent \$160.0 million to repurchase shares of common stock under the approved plans.

Financial Obligations and Commitments: We have \$4.3 million of current debt maturities as of December 31, 2016. The next significant scheduled debt maturity will not occur until 2021, the year the Facility matures. In addition, certain sales and administrative offices, data processing equipment and manufacturing equipment and facilities are leased under operating leases.

Total letters of credit issued and outstanding under the Facility were \$2.1 million as of December 31, 2016.

The following table summarizes the scheduled maturities as of December 31, 2016 of financial obligations and expiration dates of commitments for the years ended 2017 through 2021 and thereafter.

(In millions)	2017	2018	2019	2020	2021	Thereafter	Total
Capital lease	\$0.5	\$—	\$—	\$—	\$—	\$—	\$0.5
Senior unsecured credit facility due 2021	—	—	—	—	365.0	—	365.0
4.7% senior notes due 2025	—	—	—	—	—	300.0	300.0
Euro term loan	3.8	3.7	3.8	3.7	3.8	7.6	26.4
Subtotal	4.3	3.7	3.8	3.7	368.8	307.6	691.9
Operating leases	8.6	6.2	3.8	2.1	1.5	2.8	25.0
Total financial obligations	\$12.9	\$9.9	\$7.6	\$5.8	\$370.3	\$310.4	\$716.9
Letters of credit	\$2.1	\$—	\$—	\$—	\$—	\$—	\$2.1
Interest payments	24.9	24.9	24.8	24.2	19.3	62.6	180.7
Estimated benefit plan contributions	5.9	6.6	6.4	9.7	12.8	25.1	66.5
Other (a)	1.4	0.4	0.4	0.4	0.4	0.2	3.2
Total commitments	\$47.2	\$41.8	\$39.2	\$40.1	\$402.8	\$398.3	\$969.4

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

As of December 31, 2016, we had \$16.7 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. We are unable to make a reliable estimate of the eventual cash flows of the \$16.7 million of unrecognized tax benefits.

For further information regarding our financial obligations and commitments, see Notes 5, 6, 7, 12 and 13 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, 2016, we had \$113.7 million in net deferred tax liabilities consisting of deferred tax assets of \$119.1 million offset by deferred tax liabilities of \$173.9 million and a valuation allowance of \$58.9 million. As of December 31, 2015, we had \$1.6 million in net deferred tax assets consisting of deferred tax assets of \$181.9 million offset by deferred tax liabilities of \$119.8 million and a valuation allowance of \$60.5 million.

The valuation allowance as of December 31, 2016 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 \$16.7 million at December 31, 2016 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. The Company recognized \$1.1 million, \$0.6 million, \$1.5 million of interest expense and penalties related to the above unrecognized tax benefits in 2016, 2015 and 2014, respectively. The Company had accrued interest of approximately \$2.1 million and \$2.2 million as of December 31, 2016 and 2015, respectively. During 2016 we reversed \$1.1 million of 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 still open to examination by U.S. (2013 onward) and foreign tax authorities in major jurisdictions include Austria (2012 onward), Belgium (2014 onward), France (2014 onward), Spain (2004 onward) and the U.K. (2014 onward). We are currently under examination in the U.S. and certain foreign tax jurisdictions.

As of December 31, 2016, 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 2004 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, 2016 may decrease approximately \$2 to \$3 million in the fiscal year ending December 31, 2017. Such 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 and replaced with a defined contribution plan. As of December 31, 2016, 32% of the total assets in the U.K. Plan were invested in equities and 24% of the total assets were invested in diversified growth funds. Equity 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. 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 2017 plan year will be 4.75% and for the other European plans as a group will be 3.0%.

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 3.63% for 2016, 3.45% for 2015 and 4.40% in 2014. 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 2016, the Company performed a qualitative assessment 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 the currently prescribed two-step goodwill impairment test.

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, 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 (“PRP”) and our remaining costs associated with our responsibility to remediate the Lower Passaic River in New Jersey; Kent, Washington; and other sites are accrued in the consolidated balance sheets. As of December 31, 2016 and 2015, our aggregate environmental related accruals were \$3.2 million and \$2.9 million, respectively. As of December 31, 2016 and 2015, \$1.4 million and \$1.1 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, 2016 and 2015.

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 three years ended December 31, 2016 was as follows:

(In millions)	For the year ended		
	December 31, 2016	December 31, 2015	December 31, 2014
Beginning remediation accrual balance	\$2.9	\$ 5.0	\$ 3.9
Current period expenses	1.2	0.5	6.0
Cash expenditures	(0.9)	(2.6)	(4.9)
Ending remediation accrual balance	\$3.2	\$ 2.9	\$ 5.0
Capital expenditures for environmental matters	\$13.2	\$ 7.1	\$ 7.3

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, cross-currency swap agreements and foreign currency forward exchange contracts for the purpose of hedging certain specifically identified interest rates 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 2016 of \$22.1 million would have decreased to \$21.5 million and increased to \$22.7 million, respectively.

Interest Rate Swaps

At December 31, 2016, we have approximately \$100 million of interest rate swaps that swap the LIBOR on our bank loan for a fixed rate at a weighted average rate of 0.982%. In December 2016, we entered into a new transaction for €25.0 million to swap EURIBOR on our French Term Loan for a fixed rate of 0.365%. These interest rate swaps are designated as cash flow hedges to floating rate bank loans. The U.S. dollar swaps will expire between March 2017 and September 2019, and the Euro swap will have a final maturity of June 2023. The fair value of interest rate swap

agreements is recorded in other assets or other non-current liabilities with a corresponding amount to Other Comprehensive Income.

The Company has a \$150 million interest rate treasury lock agreement to protect against unfavorable movements in the benchmark treasury rate related to a 2017 forecasted debt issuance, in order to increase available debt capacity. We account for this interest rate treasury lock as a cash flow hedge so any change in fair value is recorded into other comprehensive income and then amortized into interest expense over the life of the debt upon issuance.

Foreign Currency Exchange Risks

We operate ten manufacturing facilities in Europe, which generated approximately 51% of our 2016 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. We also have a small manufacturing facility in China. Currency risk for these locations is not considered material.

In 2016, our European subsidiaries had third-party sales of \$1,041 million of which approximately 69% were denominated in U.S. dollars, 27% were denominated in Euros and 4% 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, 2016 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 \$2.6 million impact on our 2016 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 2016, a 10% adverse movement would have reduced our operating income by about \$23.0 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 2019. The aggregate notional amount of these contracts was \$423.8 million and \$417.5 million at December 31, 2016 and 2015, 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, 2016, 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, 2016, 2015 and 2014 was as follows:

(In millions)	2016	2015	2014
Unrealized (losses) gains at beginning of period	\$(15.0)	\$(9.2)	\$7.2
Losses (gains) reclassified to net sales	14.4	11.8	(3.2)
Decrease in fair value	(25.3)	(17.6)	(13.2)
Unrealized losses at end of period	\$(25.9)	\$(15.0)	\$(9.2)

Unrealized losses of \$18.7 million recorded in “accumulated other comprehensive income,” net of tax of \$3.3 million, as of December 31, 2016 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.

In addition, non-designated foreign exchange forward contracts are used to hedge balance sheet exposures. The notional amounts outstanding at December 31, 2016 were U.S. \$157.0 million against Euro and at December 31, 2015 were U.S. \$125.7 million against Euro and British pound sterling 4.5 million against Euro. Changes in fair value of these forward contracts are recorded in the

consolidated statements of operations and were losses of \$0.9 million, \$14.9 million and \$16.3 million in 2016, 2015, and 2014 respectively.

Utility Price Risks

We have exposure to utility price risks as a result of volatility in the cost and supply of energy and in natural gas. To minimize the risk, from time to time we enter into fixed price contracts at certain of our manufacturing locations for a portion of our energy usage. Although these contracts would reduce the risk to us during the contract period, future volatility in the supply and pricing of energy and natural gas could have an impact on our future consolidated results of operations.

Recently Issued Accounting Standards

New Accounting Pronouncements

In February 2016, the Financial Accounting Standards Board (“FASB”) issued Accounting Standards Update No. 2016-02 (ASU 2016-02), Leases. This ASU requires lessees to recognize a right of use asset and lease liability on the balance sheet for all leases, with the exception of short-term leases. The Company will adopt this ASU on January 1, 2019. We are currently evaluating the impact of adopting this guidance on our consolidated balance sheets, results of operations and financial condition.

In March of 2016, the FASB issued Accounting Standards Update No. 2016-09 (ASU 2016-09) "Compensation—Stock Compensation (Topic 718): Improvements to Employee Share-Based Payment Accounting" intended to simplify the accounting for employee share-based payments. Under this guidance all excess tax benefits (“windfalls”) and deficiencies (“shortfalls”) related to employee stock compensation are recognized within income tax expense. Under prior guidance windfalls were recognized to Additional paid-in capital (“APIC”) and shortfalls were only recognized to the extent they exceed the pool of windfall tax benefits.

The Company early adopted ASU 2016-09 effective for the quarter ended March 31, 2016. As a result of the adoption, tax benefits of \$2.7 million were recorded in 2016 reflecting the excess tax benefits. The adoption was on a prospective basis and therefore had no impact on prior years. The Company also recorded an adjustment to opening retained earnings of \$0.3 million to recognize U.S. net operating loss carryforwards attributable to excess tax benefits on stock compensation that had not been previously recognized to APIC because they did not reduce income taxes payable

In August of 2016, the FASB issued Accounting Standards Update No. 2016-15 (ASU 2016-15) "Classification of Certain Cash Receipts and Cash Payments" which clarifies the classification of certain types of cash flows. The standard is effective for financial statements issued for fiscal years beginning after December 15, 2017. Early adoption beginning in 2016 is permitted. Retrospective application is required. The Company is not early adopting and expects this ASU to have minimal to no impact on the Company’s Statements of Cash Flows.

In May 2014, the FASB issued Accounting Standard Update No. 2014-09 (ASU 2014-09), Revenue from Contracts with Customers. The update clarifies the principles for recognizing revenue and develops a common revenue standard for all industries. The new guidance is effective for the first quarter of 2018. Early application is permitted in 2017 for calendar year entities. We are currently evaluating the impact of adopting this prospective guidance on our consolidated results of operations and financial condition.

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) and 15d-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, 2016. 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, 2016, our internal control over financial reporting was effective.

The effectiveness of Hexcel's internal control over financial reporting, as of December 31, 2016, has been audited by Ernst & Young LLP, an independent registered public accounting firm, as stated in their report that appears on page 42.

Report of Independent Registered Public Accounting Firm

The Board of Directors and Stockholders of Hexcel Corporation

We have audited the accompanying consolidated balance sheet of Hexcel Corporation and subsidiaries as of December 31, 2016, and the related consolidated statement of operations, comprehensive income, stockholders' equity and cash flows for the year ended December 31, 2016. Our audit also included the financial statement schedule, Schedule II — Valuation and Qualifying Accounts, listed in the Index at Item 15(a)(2) for the year ended December 31, 2016. These financial statements and schedule are the responsibility of the Company's management. Our responsibility is to express an opinion on these financial statements based on our audit.

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

In our opinion, the financial statements referred to above present fairly, in all material respects, the consolidated financial position of Hexcel Corporation and subsidiaries at December 31, 2016, and the consolidated results of its operations and its cash flows for the year ended December 31, 2016, in conformity with U.S. generally accepted accounting principles. Also, in our opinion, the related financial statement schedule for the year ended December 31, 2016, when considered in relation to the basic financial statements taken as a whole, presents fairly in all material respects the information set forth therein.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), Hexcel Corporation's internal control over financial reporting as of December 31, 2016 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 9, 2017 expressed an unqualified opinion thereon.

/s/ Ernst & Young LLP

Stamford, Connecticut

February 9, 2017

Report of Independent Registered Public Accounting Firm

The Board of Directors and Stockholders of Hexcel Corporation

We have audited Hexcel Corporation's and subsidiaries internal control over financial reporting as of December 31, 2016, 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). Hexcel Corporation's and subsidiaries management is responsible for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting included in the accompanying Management's Report on Internal Control over Financial Reporting. Our responsibility is to express an opinion on the company's internal control over financial reporting based on our audit.

We conducted our audit in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, 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.

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

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

In our opinion, Hexcel Corporation and subsidiaries maintained, in all material respects, effective internal control over financial reporting as of December 31, 2016, based on the COSO criteria.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), the consolidated balance sheet of Hexcel Corporation and subsidiaries as of December 31, 2016, and the related consolidated statement of operations, comprehensive income, stockholders' equity and cash flows for the year ended December 31, 2016 and our report dated February 9, 2017 expressed an unqualified opinion thereon.

/s/ Ernst & Young LLP

Stamford, Connecticut

February 9, 2017

Report of Independent Registered Public Accounting Firm

To the Board of Directors and

Stockholders of Hexcel Corporation

In our opinion, the consolidated balance sheet as of December 31, 2015 and the related consolidated statements of operations, of comprehensive income, of stockholders' equity and of cash flows for each of the two years in the period ended December 31, 2015 present fairly, in all material respects, the financial position of Hexcel Corporation and its subsidiaries at December 31, 2015, and the results of their operations and their cash flows for each of the two years in the period ended December 31, 2015 in conformity with accounting principles generally accepted in the United States of America. In addition, in our opinion, the financial statement schedule for each of the two years in the period ended December 31, 2015 presents fairly, in all material respects, the information set forth therein when read in conjunction with the related consolidated financial statements. These financial statements and financial statement schedule are the responsibility of the Company's management. Our responsibility is to express an opinion on these financial statements and financial statement schedule based on our audit. We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, assessing the accounting principles used and significant estimates made by management, and evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinions.

/s/ PricewaterhouseCoopers LLP

Stamford, Connecticut

February 4, 2016

Hexcel Corporation and Subsidiaries

Consolidated Balance Sheets

As of December 31,

(In millions)	2016	2015
Assets		
Current assets:		
Cash and cash equivalents	\$35.2	\$51.8
Accounts receivable, net	245.6	234.0
Inventories	291.0	307.2
Prepaid expenses and other current assets	35.2	40.8
Total current assets	607.0	633.8
Property, plant and equipment	2,378.4	2,099.4
Less accumulated depreciation	(752.8)	(673.8)
Property, plant and equipment, net	1,625.6	1,425.6
Goodwill and other intangible assets	72.2	58.9
Investments in affiliated companies	53.1	30.4
Other assets	42.7	38.7
Total assets	\$2,400.6	\$2,187.4
Liabilities and Stockholders' Equity		
Current liabilities:		
Short-term borrowings	\$4.3	\$—
Accounts payable	137.3	148.9
Accrued compensation and benefits	66.8	62.8
Accrued liabilities	63.5	80.9
Total current liabilities	271.9	292.6
Commitments and contingencies (see Note 13)		
Long-term debt	684.4	576.5
Retirement obligations	40.0	38.6
Other non-current liabilities	159.4	100.1
Total liabilities	1,155.7	1,007.8
Stockholders' equity:		
Common stock, \$0.01 par value, 200.0 shares authorized, 106.7 shares and 106.0 shares		
issued at December 31, 2016 and 2015, respectively	1.1	1.1
Additional paid-in capital	738.8	715.8
Retained earnings	1,254.7	1,044.4

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Accumulated other comprehensive loss	(174.4)	(123.9)
	1,820.2	1,637.4
Less – Treasury stock, at cost, 15.3 shares and 12.5 shares		
at December 31, 2016 and 2015, respectively	(575.3)	(457.8)
Total stockholders' equity	1,244.9	1,179.6
Total liabilities and stockholders' equity	\$2,400.6	\$2,187.4

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)	2016	2015	2014
Net sales	\$2,004.3	\$1,861.2	\$1,855.5
Cost of sales	1,439.7	1,328.4	1,346.7
Gross margin	564.6	532.8	508.8
Selling, general and administrative expenses	157.6	156.1	149.1
Research and technology expenses	46.9	44.3	47.9
Other operating expense	—	—	6.0
Operating income	360.1	332.4	305.8
Interest expense, net	22.1	14.2	8.0
Non-operating expense	0.4	—	0.5
Income before income taxes, and equity in earnings of			
affiliated companies	337.6	318.2	297.3
Provision for income taxes	90.3	83.0	89.3
Income before equity in earnings of affiliated companies	247.3	235.2	208.0
Equity in earnings from affiliated companies	2.5	2.0	1.4
Net income	\$249.8	\$237.2	\$209.4
Basic net income per common share:	\$2.69	\$2.48	\$2.16
Diluted net income per common share:	\$2.65	\$2.44	\$2.12
Weighted-average common shares:			
Basic	92.8	95.8	96.8
Diluted	94.2	97.2	98.7

Hexcel Corporation and Subsidiaries

Consolidated Statements of Comprehensive Income

For the Years Ended December 31,

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(In millions)	2016	2015	2014
Net Income	\$249.8	\$237.2	\$209.4
Currency translation adjustments	(54.5)	(53.8)	(59.5)
Net unrealized pension and other benefit actuarial			
losses and prior service credits (net of tax)	8.1	4.9	(3.4)
Net unrealized losses on financial instruments (net			
of tax)	(4.1)	(5.3)	(17.5)
Total other comprehensive loss	(50.5)	(54.2)	(80.4)
Comprehensive income	\$199.3	\$183.0	\$129.0

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, 2016, 2015 and 2014

(In millions)	Common Stock		Accumulated Retained Earnings	Accumulated Other Comprehensive Income (Loss)		Treasury Stock	Total Stockholders' Equity
	Par	Additional Paid-In Capital					
Balance, December 31, 2013	\$ 1.0	\$ 642.3	\$ 636.1	\$ 10.7		\$(129.7)	\$ 1,160.4
Net income			209.4				209.4
Change in other comprehensive income – net of tax					(80.4)		(80.4)
Stock based compensation		36.2					36.2
Acquisition of treasury stock						(175.7)	(175.7)
Balance, December 31, 2014	\$ 1.0	\$ 678.5	\$ 845.5	\$ (69.7)		\$(305.4)	\$ 1,149.9
Net income			237.2				237.2
Dividends paid on common stock			(38.3)				(38.3)
Change in other comprehensive income – net of tax					(54.2)		(54.2)
Stock based compensation	0.1	37.3					37.4
Acquisition of treasury stock						(152.4)	(152.4)
Balance, December 31, 2015	\$ 1.1	\$ 715.8	\$ 1,044.4	\$ (123.9)		\$(457.8)	\$ 1,179.6
Net income			249.8				249.8
Dividends paid on common stock			(39.8)				(39.8)
Change in other comprehensive income – net of tax					(50.5)		(50.5)
Stock based compensation		23.0					23.0
Adoption of ASU 2016-09			0.3				0.3
Acquisition of treasury stock						(117.5)	(117.5)
Balance, December 31, 2016	\$ 1.1	\$ 738.8	\$ 1,254.7	\$ (174.4)		\$(575.3)	\$ 1,244.9

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)	2016	2015	2014
Cash flows from operating activities			
Net income	\$249.8	\$237.2	\$209.4
Reconciliation to net cash provided by operating activities:			
Depreciation and amortization	93.3	76.4	71.2
Amortization of deferred financing costs and debt discount	1.7	1.1	1.6
Deferred income taxes	62.8	53.2	39.7
Stock-based compensation	16.1	17.9	17.2
Equity in earnings from affiliated companies	(2.5)	(2.0)	(1.4)
Excess tax benefits on stock-based compensation	—	(9.2)	(5.8)
Changes in assets and liabilities:			
Increase in accounts receivable	(17.4)	(18.4)	(15.4)
Decrease (increase) in inventories	10.8	(25.0)	(38.8)
(Increase) decrease in prepaid expenses and other current assets	(4.1)	(2.9)	4.1
(Increase) decrease in other non-current assets	(13.7)	(11.6)	40.1
Decrease in accounts payable/accrued liabilities	(7.9)	(10.4)	(0.8)
Increase (decrease) in other non-current liabilities	8.1	4.3	(2.0)
Other – net	4.4	(9.6)	(1.1)
Net cash provided by operating activities	401.4	301.0	318.0
Cash flows from investing activities			
Capital expenditures	(327.9)	(305.3)	(260.1)
Investments in affiliated companies	(30.0)	—	(10.3)
Acquisition	(8.6)	—	—
Net cash used for investing activities	(366.5)	(305.3)	(270.4)
Cash flows from financing activities			
Proceeds from issuance of senior notes	—	300.0	—
Proceeds from senior unsecured credit facility	78.0	—	481.0
Repayment of senior unsecured credit facility	—	(135.0)	(66.0)
Proceeds from Euro facility	26.4	—	—
Proceeds from previous senior secured credit facility	—	—	189.0
Repayment of previous senior secured credit facility	—	—	(481.0)
Proceeds (repayment) of other debt, net	1.1	(1.2)	(1.7)
Deferred financing costs and discount related to long-term debt	(1.7)	(3.6)	(1.4)
Dividends paid	(39.8)	(38.3)	—
Repurchase of stock	(111.1)	(146.1)	(160.0)
Activity under stock plans	0.3	13.3	3.2

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Net cash used for financing activities	(46.8)	(10.9)	(36.9)
Effect of exchange rate changes on cash and cash equivalents	(4.7)	(3.9)	(5.3)
Net (decrease) increase in cash and cash equivalents	(16.6)	(19.1)	5.4
Cash and cash equivalents at beginning of period	51.8	70.9	65.5
Cash and cash equivalents at end of period	\$35.2	\$51.8	\$70.9
Supplemental data:			
Accrual basis additions to property, plant and equipment	\$320.2	\$289.0	\$270.2

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, 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, and Africa. We are also a partner in a joint venture in Malaysia, 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. We have a 50% equity ownership investment in an Asian joint venture Aerospace Composites Malaysia Sdn. Bhd. (“ACM”). We also had a 50% equity investment in Formax U.K. Limited (“Formax”) in 2015. These investments were accounted for using the equity method of accounting. We acquired the remaining 50% of Formax in January 2016, as discussed in Note 21.

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 market, 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.

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 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.

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, or when events or changes in circumstances indicate that goodwill might be impaired. The Company's annual test for goodwill impairment was performed in the fourth quarter of 2016. The Company performed a qualitative assessment 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 the currently prescribed two-step goodwill impairment test.

We amortize the cost of other intangibles over their estimated useful lives unless such lives are deemed indefinite. The Company has indefinite-lived intangible assets, consisting of purchased emissions credits. These indefinite lived intangibles are tested annually for impairment as of November 30th, 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, the intangible asset is written down to its fair value. Fair value is calculated using discounted cash flows.

Impairment of Long-Lived Assets

The Company reviews long-lived assets, including property, plant and equipment and identifiable 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. The amortization of capitalized costs commences when the computer software is ready for its intended use.

Debt Financing Costs

Debt financing costs are deferred and amortized to interest expense over the life of the related debt. At December 31, 2016 and 2015, deferred debt financing costs, net of accumulated amortization, were \$4.0 million and \$6.4 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 value compensation expense for all option-based payment awards made to employees and directors based on estimated fair values on the grant date. The value of the portion of the award that is ultimately expected to vest is recognized as expense on a straight-line basis over the requisite service periods in our consolidated statements of operations. The value of RSU's, PRSU's 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. Gains and losses from foreign currency transactions are not material.

Revenue Recognition

Our revenue is predominately derived from sales of inventory, and is recognized when persuasive evidence of an arrangement exists, title and risk of loss passes to the customer, the sales price is fixed or determinable, and collectability is reasonably assured. However, from time to time we enter into contractual arrangements for which other specific revenue recognition guidance is applied.

Revenues derived from design and installation services are recognized when the service is provided. Revenues derived from long-term construction-type contracts are accounted for using the percentage-of-completion method, and progress is measured on a cost-to-cost basis. If at any time expected costs exceed the value of the contract, the loss is recognized immediately.

Shipping and handling fees and costs incurred in connection with products sold are recorded in cost of sales in our Consolidated Statements of Operations.

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 more than 65% our annual net sales in 2016, 2015 and 60% in 2014. Refer to Note 16 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, 2016 and 2015, the allowance for doubtful accounts was \$0.4 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 and interest rate swap 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. The change in the fair value is recorded in gross margin in current period earnings. 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 effective portions of changes in fair value of the instruments in “accumulated other comprehensive loss” until the underlying hedged transactions affect income. We designate our interest rate swap 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 balance sheet 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 Pronouncements

In February 2016, the Financial Accounting Standards Board ("FASB") issued Accounting Standards Update No. 2016-02 (ASU 2016-02), Leases. This ASU requires lessees to recognize a right of use asset and lease liability on the balance sheet for all leases, with the exception of short-term leases. The Company will adopt this ASU on January 1, 2019. We are currently evaluating the impact of adopting this guidance on our consolidated balance sheets, results of operations and financial condition.

In March of 2016, the FASB issued Accounting Standards Update No. 2016-09 (ASU 2016-09) "Compensation—Stock Compensation (Topic 718): Improvements to Employee Share-Based Payment Accounting" intended to simplify the accounting for employee share-based payments. Under this guidance all excess tax benefits ("windfalls") and deficiencies ("shortfalls") related to employee stock compensation are recognized within income tax expense. Under prior guidance windfalls were recognized to Additional paid-in capital ("APIC") and shortfalls were only recognized to the extent they exceed the pool of windfall tax benefits.

The Company early adopted ASU 2016-09 effective for the quarter ended March 31, 2016. As a result of the adoption, tax benefits of \$2.4 million were recorded in 2016 reflecting the excess tax benefits. The adoption was on a prospective basis and therefore had no impact on prior years. The Company also recorded an adjustment to opening retained earnings of \$0.3 million to recognize U.S. net operating loss carryforwards attributable to excess tax benefits on stock compensation that had not been previously recognized to APIC because they did not reduce income taxes payable.

In August of 2016, the FASB issued Accounting Standards Update No. 2016-15 (ASU 2016-15) "Classification of Certain Cash Receipts and Cash Payments" which clarifies the classification of certain types of cash flows. The standard is effective for financial statements issued for fiscal years beginning after December 15, 2017. Early adoption beginning in 2016 was permitted. Retrospective application is required. The Company is not early adopting and expects this ASU to have a minimal impact on the Company's Statements of Cash Flows.

In May 2014, the FASB issued Accounting Standard Update No. 2014-09 (ASU 2014-09), "Revenue from Contracts with Customers". The update clarifies the principles for recognizing revenue and develops a common revenue standard for all industries. The new guidance is effective for the first quarter of 2018. Early application is permitted in 2017 for calendar year entities. We are currently evaluating the impact of adopting this prospective guidance on our consolidated results of operations and financial condition. The Company plans to adopt the new guidance on January 1, 2018.

Note 2 — Inventories

(In millions)	December 31,	
	2016	2015
Raw materials	\$120.6	\$120.7
Work in progress	53.7	54.7
Finished goods	116.7	131.8
Total inventory	\$291.0	\$307.2

Note 3 — Net Property, Plant and Equipment

(In millions)	December 31,	
	2016	2015
Land	\$63.8	\$51.7
Buildings	523.2	405.5
Equipment	1,336.9	1,094.1
Construction in progress	454.4	548.1
Capital lease	0.1	—
Property, plant and equipment	2,378.4	2,099.4
Less accumulated depreciation	(752.8)	(673.8)
Net property, plant and equipment	\$1,625.6	\$1,425.6

Depreciation expense related to property, plant and equipment for the years ended December 31, 2016, 2015 and 2014, was \$93.3 million, \$76.4 million and \$71.2 million, respectively. Capitalized interest of \$1.9 million and \$2.1 million for 2016 and 2015, respectively, was included in construction in progress and is associated with our carbon fiber expansion programs. Capitalized costs associated with software developed for internal use were not material for 2016 and were \$8.9 million for 2015.

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, 2016 and 2015, by segment, are as follows:

(In millions)	Composite	Engineered	Total
	Materials	Products	
Balance as of December 31, 2014	\$43.7	\$ 16.1	\$59.8
Amortization expense	(0.3)	—	(0.3)
Currency translation adjustments and other	(0.6)	—	(0.6)
Balance as of December 31, 2015	\$42.8	\$ 16.1	\$58.9
Amortization expense	(0.3)	—	(0.3)
Additions	18.1	—	18.1
Currency translation adjustments and other	(4.5)	—	(4.5)
Balance as of December 31, 2016	\$56.1	\$ 16.1	\$72.2

We performed our annual impairment review of goodwill as of November 30, 2016 and determined that it was more likely than not that the fair values of our reporting units are above their carrying values. The goodwill and intangible asset balances as of December 31, 2016 include \$3.5 million of indefinite-lived intangible assets, \$2.1 million of a definitive-lived intangible asset and \$66.6 million of goodwill. The increase in goodwill is primarily due to the Formax acquisition in early 2016.

Note 5 - Debt

(In millions)	December 31, 2016	December 31, 2015
Current portion of capital lease	\$ 0.5	\$ —
Current portion of Euro term loan	3.8	—
Current portion of debt	4.3	—
Senior unsecured credit facility — due 2021	365.0	280.0
Euro term loan	22.6	—
4.7% senior notes — due 2025	300.0	300.0
Senior notes – original issue discount	(0.7)	(0.8)
Senior notes – deferred financing costs	(2.5)	(2.7)
Long-term debt	684.4	576.5
Total debt	\$ 688.7	\$ 576.5

Senior Credit Facility

In June 2016, the Company amended and extended its \$700 million senior unsecured credit facility (“the Facility”). The maturity of the Facility was extended from September 2019 to June 2021. The amendment provided for a modest reduction in interest costs, as well as less restrictive covenants. The interest rate for the revolver at December 31, 2016 is LIBOR + 1.125%. The interest rate ranges from LIBOR + 0.875% to a maximum of LIBOR + 1.875%, depending upon the Company’s leverage ratio. At December 31, 2016 total borrowings under the Facility were \$365 million, which approximates fair value using level 2 inputs under the market approach. During 2016, the Company utilized its Facility at various borrowing levels with \$524 million representing the highest amount borrowed within the year. The Facility permits us to issue letters of credit up to an aggregate amount of \$40 million. Outstanding letters of credit reduce the amount available for borrowing under our revolving loan. As of December 31, 2016, we had issued letters of credit under the Facility totaling \$2.1 million, resulting in undrawn availability under the Facility as of December 31, 2016 of \$332.9 million.

The Facility contains financial and other covenants, including, but not limited to, restrictions on the incurrence of debt and the granting of liens, as well as the maintenance of an interest coverage ratio and a leverage ratio. In accordance with the terms of the Facility, we are required to maintain a minimum interest coverage ratio of 3.50 (based on the ratio of EBITDA, as defined in the Credit Agreement, to interest expense) and may not exceed a maximum leverage ratio of 3.50 (based on the ratio of total debt to EBITDA) throughout the term of the Facility. In addition, the Facility contains other terms and conditions such as customary representations and warranties, additional covenants and customary events of default.

In 2014, we entered into the original \$700 million Facility which was scheduled to mature in September 2019. The Facility replaced the Company’s previous senior secured credit facility (a \$600 million revolving loan). As a result of the refinancing, the Company accelerated certain unamortized financing costs of the credit facility being replaced incurring a pretax charge of \$0.5 million in the third quarter of 2014. At December 31, 2015, the outstanding borrowings of \$280 million from the Facility approximates fair value using level 2 inputs under the market approach.

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, 2016 remained at 4.7%. The net proceeds of approximately \$296.4 million were initially used to repay, in part, our Facility. The conditions and covenants related to the senior notes are less restrictive than those of our Facility. The effective interest rate for 2016 was 4.76%. The fair value of the senior notes based on quoted prices utilizing level 2 inputs was \$307.9 million at December 31, 2016. The balance for unamortized deferred financing costs and debt discount related to the senior notes was \$3.2 million at December 31, 2016 and \$3.5 million at December 31, 2015.

Other Credit Facilities

In June 2016 we also entered into a €60 million (\$67.4 million) term loan. The loan has two tranches of which the first tranche for €25 million has a six-month availability period at a rate of Euribor +1.2% and a final maturity date of June 30, 2023. The second tranche for €35 million has a one-year availability period at a rate of Euribor +1.25% and a final maturity date of June 30, 2024. There is a zero percent floor on the Euribor. The loans are payable in annual

installments, beginning on June 30, 2017 and June 30, 2019, respectively. We had \$26.3 million (€25 million) outstanding under this loan at December 31, 2016, which approximates fair value using level 2 inputs under the market approach. The facility is guaranteed by Hexcel Corporation.

We have a \$10.0 million revolving credit line for working capital needs of our Chinese entity with no outstanding balance at December 31, 2016. These funds can only be used locally. The facility is guaranteed by Hexcel Corporation, but is uncommitted and cancellable by the lender at any time.

Aggregate Maturities of Debt

We have \$365 million of debt maturing in 2021 and another \$300 million of debt maturing in 2025. The Euro term loan is repayable in seven equal installments of \$3.76 million each June 30 beginning June 30, 2017 with a final maturity on June 30, 2023.

Note 6 — Leasing Arrangements

Certain sales and administrative offices, data processing equipment and manufacturing facilities are leased under operating leases. We recognize rental expense on operating leases straight-line over the term of a lease. Total rental expense was \$11.4 million in 2016, \$10.2 million in 2015 and \$12.7 million in 2014.

Scheduled future minimum lease payments as of December 31, 2016 were:

(In millions)

Payable during the years ending December 31: Operating Leases

2017	\$ 8.6
2018	6.2
2019	3.8
2020	2.1
2021	1.5
Thereafter	2.8
Total minimum lease payments	\$ 25.0

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-2015 and for the U.K. Plan the S2PXA table with future improvements in line with the CMI 2014 projection model with a long term trend rate of 1.5% 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 \$1.1 million in 2017 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 2016, 2015 and 2014 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 \$2.1 million in 2016, \$2.2 million in 2015 and approximately \$1.8 million in 2014. We expect the Company’s contribution to be about \$2.0 million in 2017 and remain at that level over the next few years.

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 2017 to cover unfunded benefits.

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. As of December 31, 2016, 32% of the total assets in the U.K. Plan were invested in equities and 24% of the total assets were invested in diversified growth funds and 21% were invested in liability driven 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 2017 plan year will be 4.75% and 3.0% for the other European plans as a group.

U.K. Defined Contribution Pension Plan

Under the Defined Contribution Section, 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, 2016 is detailed in the table below.

(In millions)	2016	2015	2014
Defined benefit retirement plans	\$1.6	\$2.7	\$5.4
Union sponsored multi-employer pension plan	2.1	2.2	1.8
Retirement savings plans-matching contributions	7.9	4.2	2.9
Retirement savings plans-profit sharing contributions	10.6	9.7	6.0
Net periodic expense	\$22.2	\$18.8	\$16.1

Defined Benefit Retirement and Postretirement Plans

Net periodic cost of our defined benefit retirement and postretirement plans for the three years ended December 31, 2016, were:

(In millions)	U.S. Plans			European Plans		
	2016	2015	2014	2016	2015	2014
Defined Benefit Retirement Plans						
Service cost	\$1.2	\$1.1	\$1.1	\$0.8	\$0.8	\$0.8
Interest cost	0.6	0.5	0.7	5.4	6.1	7.0
Expected return on plan assets	—	—	—	(7.6)	(8.4)	(9.6)
Net amortization	0.3	1.0	2.0	0.6	0.8	0.7
Termination benefits and settlement losses	0.2	0.8	2.7	0.1	—	—
Net periodic pension cost (income)	\$2.3	\$3.4	\$6.5	\$(0.7)	\$(0.7)	\$(1.1)

(In millions)

U.S. Postretirement Plans	2016	2015	2014
Interest cost	\$0.2	\$0.2	\$0.2
Net amortization and deferral	(0.7)	(0.6)	(0.7)
Net periodic postretirement benefit income	\$(0.5)	\$(0.4)	\$(0.5)

(In millions)	Defined Benefit Retirement Plans					
	U.S. Plans		European Plans		Postretirement Plans	
	2016	2015	2016	2015	2016	2015
Other Changes in Plan Assets and Benefit Obligations Recognized in Other Comprehensive Income						
Net loss (gain)	\$0.1	\$1.9	\$(5.0)	\$(4.6)	\$(0.9)	\$(1.0)
Amortization of actuarial (losses) gains	(0.3)	(1.7)	(0.7)	(0.8)	0.7	0.7
Effect of foreign exchange	—	—	(4.0)	(2.1)	—	—
Total recognized in other comprehensive income (pre-tax)	\$(0.2)	\$0.2	\$(9.7)	\$(7.5)	\$(0.2)	\$(0.3)

The Company expects to recognize \$0.7 million of net actuarial loss and an immaterial net prior service cost as a component of net periodic pension cost in 2017 for its defined benefit plans. The amount of net actuarial gain recognized as a component of net periodic postretirement benefit cost in 2017 is expected to be \$1.1 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, 2016 and 2015, were:

(In millions)	Defined Benefit Retirement Plans					
	U.S. Plans		European Plans		Postretirement Plans	
	2016	2015	2016	2015	2016	2015
Change in benefit obligation:						
Benefit obligation - beginning of year	\$ 17.7	\$ 19.1	\$ 162.8	\$ 179.8	\$ 5.3	\$ 6.3
Service cost	1.2	1.1	0.8	0.8	—	—
Interest cost	0.6	0.5	5.4	6.1	0.2	0.2
Plan participants' contributions	—	—	—	—	0.1	0.1
Actuarial loss (gain)	0.2	1.9	27.7	(10.0)	(1.0)	(1.0)
Termination benefits and settlements	0.2	(4.7)	(0.2)	—	—	—
Benefits and expenses paid	(0.2)	(0.2)	(5.1)	(4.6)	(0.2)	(0.3)
Currency translation adjustments	—	—	(27.3)	(9.3)	—	—
Benefit obligation - end of year	\$ 19.7	\$ 17.7	\$ 164.1	\$ 162.8	\$ 4.4	\$ 5.3
Change in plan assets:						
Fair value of plan assets - beginning of year	\$—	\$—	\$ 160.4	\$ 165.6	\$ —	\$ —
Actual return on plan assets	—	—	40.3	3.0	—	—
Employer contributions	0.2	4.9	6.3	4.3	0.1	0.2
Plan participants' contributions	—	—	—	—	0.1	0.1
Benefits and expenses paid	(0.2)	(0.2)	(5.1)	(4.6)	(0.2)	(0.3)
Termination benefits and settlements	—	(4.7)	(0.2)	—	—	—
Currency translation adjustments	—	—	(30.3)	(7.9)	—	—
Fair value of plan assets - end of year	\$—	\$—	\$ 171.4	\$ 160.4	\$ —	\$ —
Amounts recognized in Consolidated Balance Sheets:						
Noncurrent Assets	\$—	\$—	\$ 23.9	\$ 13.6	\$ —	\$ —
Current liabilities	\$ 1.1	\$ 0.7	\$ 0.4	\$ 0.4	\$ 0.5	\$ 0.6
Non-current liabilities	18.6	17.0	16.2	15.6	3.9	4.7
Total Liabilities	\$ 19.7	\$ 17.7	\$ 16.6	\$ 16.0	\$ 4.4	\$ 5.3

Amounts recognized in Accumulated Other Comprehensive

Loss:

Actuarial net (loss) gain	\$(3.8)	\$(4.0)	\$(22.1)	\$(31.8)	\$ 4.3	\$ 4.1
Prior service cost	—	—	(0.1)	(0.1)	—	—
Total amounts recognized in accumulated other comprehensive loss	\$(3.8)	\$(4.0)	\$(22.2)	\$(31.9)	\$ 4.3	\$ 4.1

The measurement date used to determine the benefit obligations and plan assets of the defined benefit retirement and postretirement plans was December 31, 2016.

The total accumulated benefit obligation (“ABO”) for the U.S. defined benefit retirement plans was \$17.9 million and \$16.4 million as of December 31, 2016 and 2015, respectively. Excluding the U.K. Plan, the European plans’ ABO exceeded plan assets as of December 31, 2016 and 2015, by \$12.0 million and \$11.5 million, respectively. These plans’ ABO was \$17.7 million and \$17.1 million as of December 31, 2016 and 2015, respectively. The U.K. Plan is overfunded; the ABO of this plan was \$141.8 million and \$141.2 million at December 31, 2016 and 2015, respectively. The fair value of the U.K. Plan assets was \$165.7 million and \$154.8 million at December 31, 2016 and 2015, respectively.

As of December 31, 2016 and 2015, the accrued benefit costs for the defined benefit retirement plans and postretirement benefit plans included within “accrued compensation and benefits” was \$2.0 million and \$1.7 million, respectively, and within “other non-current liabilities” was \$38.8 million and \$37.3 million, respectively, in the accompanying consolidated balance sheets.

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

(In millions)	U.S. Plans	European Plans	Postretirement Plans
2017	\$ 1.1	\$ 5.1	\$ 0.5
2018	1.5	4.3	0.6
2019	1.0	4.5	0.5
2020	2.7	4.9	0.5
2021	5.8	6.5	0.5
2022-2026	15.3	35.2	1.8
	\$ 27.4	\$ 60.5	\$ 4.4

Fair Values of Pension Assets

The following table presents pension assets measured at fair value at December 31, 2016 and 2015 utilizing the fair value hierarchy discussed in Note 19:

(In millions) Description	December 31, 2016	Fair Value Measurements at December 31, 2016		
		Level 1	Level 2	Level 3
Equity funds	\$ 53.8	\$—	\$53.8	\$ —
Diversified growth funds	41.2	—	41.2	—
Index linked gilts	36.1	—	36.1	—
Liability driven investments	34.4	—	34.4	—
Insurance contracts	3.6	—	—	3.6
Diversified investment funds	2.1	—	—	2.1
Cash and cash equivalents	0.2	0.2	—	—
Total assets	\$ 171.4	\$0.2	\$ 165.5	\$ 5.7

Description	December 31, 2015	Fair Value Measurements at December 31, 2015		
		Level 1	Level 2	Level 3
Equity funds	\$ 51.9	\$51.9	\$—	\$ —
Diversified growth funds	44.2	22.3	21.9	—
Liability driven investments	35.9	35.9	—	—
Active corporate bond fund	14.0	14.0	—	—
Index linked gilts	8.4	8.4	—	—
Insurance contracts	3.5	—	—	3.5
Diversified investment funds	2.1	—	—	2.1
Cash and cash equivalents	0.4	0.4	—	—
Total assets	\$ 160.4	\$ 132.9	\$ 21.9	\$ 5.6

The pooled fund that the U.K. plan invests in is structured as unit-linked life assurance vehicles which are not exchange listed. As the prices for these are not quoted in an active market at the reporting date, the investment managers advised they believe these funds cannot be classified as Level I investments. The investment managers have deemed its pooled funds as being most suitably classified as Level 2 given its valuation methodology and pricing. This is a change from the prior year where the investment managers classified them as level 1.

(In millions)	Balance at January 1, 2016	Actual return on plan assets	Purchases, sales and settlements	Changes due to exchange rates	Balance at December 31, 2016
Reconciliation of Level 3 Assets					
Diversified investment funds	\$ 2.1	\$ 0.1	\$ —	\$ (0.1)	\$ 2.1
Insurance contracts	3.5	0.2	—	(0.1)	3.6
Total level 3 assets	\$ 5.6	\$ 0.3	\$ —	\$ (0.2)	\$ 5.7

Reconciliation of Level 3 Assets	Balance at January 1, 2015	Actual return on plan assets	Purchases, sales and settlements	Changes due to exchange rates	Balance at December 31, 2015
Diversified investment funds	\$ 2.5	\$ 0.1	\$ (0.2)	\$ (0.3)	\$ 2.1
Insurance contracts	3.2	0.3	0.3	(0.3)	3.5
Total level 3 assets	\$ 5.7	\$ 0.4	\$ 0.1	\$ (0.6)	\$ 5.6

Plan assets are invested in a number of unit linked pooled funds by an independent asset management group. Equity funds are split 40/60 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 index-linked gilt allocation provides a partial interest rate and inflation rate hedge against the valuation of the liabilities.

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

The Bond Allocation is invested in a number of Active Corporate Bond funds which are pooled funds. The Corporate Bond funds primarily invest in corporate fixed income securities denominated in British pounds sterling with credit ratings of BBB- and above. We use quoted prices in active markets to value the assets.

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 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, 2016 and 2015, and target allocations by asset class, are as follows:

Asset Class	Percentage Of Plan Assets 2016	Target Allocations 2016	Percentage Of Plan Assets 2015	Target Allocations 2015
Diversified growth funds	24.1	% 29.0	% 27.6	% 27.0
Index linked gilts	21.1	13.0	5.3	5.0
Liability driven investments	20.1	24.0	22.3	22.0
All Other Regions Equity Fund	18.7	34.0	19.3	20.0
U.K. Equity Fund	12.6	—	13.0	15.0
Diversified Investment Funds	1.2	—	1.3	—
Insurance Contracts	2.1	—	2.2	2.0
Active Corporate Bond Funds	—	—	8.7	9.0
Cash and cash equivalents	0.1	—	0.3	—

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, 2016, 2015 and 2014 are shown in the following table. These year-end values are the basis for determining net periodic costs for the following year.

	2016	2015	2014
U.S. defined benefit retirement plans:			
Discount rates	3.1% - 3.6%	3.2% - 3.7%	3.2% - 3.4%
Rate of increase in compensation	3.0%	3.0%	3.0%
Expected long-term rate of return on plan assets	N/A	N/A	N/A
European defined benefit retirement plans:			
Discount rates	1.25% - 2.95%	1.8% - 3.9%	1.9% - 3.7%
Rates of increase in compensation	2.75% - 3.0%	2.8% - 3.0%	2.8% - 3.0%
Expected long-term rates of return on plan assets	3.0% - 4.75%	3.0% - 5.25%	3.25% - 5.2%
Postretirement benefit plans:			
Discount rates	3.3%	3.4%	3.2%

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 2017 pension expense, and the impact on our retirement obligation as of December 31, 2016 for a one-percentage-point change in the discount rate:

(In millions)	Retiree U.K.		
	Non-Qualified Pension Plans	Medical Plans	Retirement Plan
Periodic pension expense			
One-percentage-point increase:			
Expected long-term rate of return	\$ N/A	\$ N/A	\$ (1.7)
Discount rate	\$ (0.1)	\$ —	\$ 0.5
One-percentage-point decrease:			
Expected long-term rate of return	\$ N/A	\$ N/A	\$ 1.7
Discount rate	\$ 0.2	\$ —	\$ 0.2
Retirement obligation			
One-percentage-point increase in discount rate	\$ (1.1)	\$ (0.2)	\$ (22.3)
One-percentage-point decrease in discount rate	\$ 1.2	\$ 0.3	\$ 28.5

The annual rate of increase in the per capita cost of covered health care benefits is assumed to be 7.5% for medical and 5.0% for dental and vision for 2016. The medical rates are assumed to gradually decline to 4.75% by 2028, 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 2016 and 2015.

Note 8 — Income Taxes

Income before income taxes and the provision for income taxes, for the three years ended December 31, 2016, were as follows:

(In millions)	2016	2015	2014
Income before income taxes:			
U.S.	\$149.1	\$164.3	\$163.8
International	188.5	153.9	133.5
Total income before income taxes	\$337.6	\$318.2	\$297.3
Provision for income taxes:			
Current:			
U.S.	\$(9.5)	\$(0.3)	\$21.5
International	37.1	30.1	28.1
Current provision for income taxes	27.6	29.8	49.6
Deferred:			
U.S.	54.3	48.6	34.4
International	8.4	4.6	5.3
Deferred provision for income taxes	62.7	53.2	39.7
Total provision for income taxes	\$90.3	\$83.0	\$89.3

A reconciliation of the provision for income taxes at the U.S. federal statutory income tax rate of 35% to the effective income tax rate, for the three years ended December 31, 2016, is as follows:

(In millions)	2016	2015	2014
Provision for taxes at U.S. federal statutory rate	\$118.2	\$111.4	\$104.1
State and local taxes, net of federal benefit	3.1	2.5	1.9
Foreign effective rate differential	(16.3)	(19.5)	(15.9)
Tax credits	(10.1)	(3.1)	(2.4)
Other	2.0	3.3	1.6
Release of reserves for uncertain tax positions	(6.6)	(11.6)	—
Total provision for income taxes	\$90.3	\$83.0	\$89.3

The effective tax rate includes a \$6.6 million benefit related to the release of reserves for uncertain tax positions. Also included in this year's effective tax rate is the impact of lower deferred tax liabilities from tax rate changes enacted in certain foreign jurisdictions of \$1.4 million.

As of December 31, 2016 and 2015, we did not have a U.S. income tax provision for undistributed earnings of international subsidiaries. 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, 2016, we have approximately \$618 million of unremitted foreign earnings that we intend to keep indefinitely reinvested. Estimating the tax liability that would result if these earnings were repatriated is not practicable 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, 2016 and 2015 are:

(In millions)	2016	2015
Assets		
Net operating loss carryforwards	\$58.9	\$60.6
Unfunded pension liability and other postretirement obligations	5.6	4.8
Advanced payments from foreign affiliates	—	23.0
Tax credit carryforwards	13.0	5.0
Stock based compensation	16.2	16.1
Other comprehensive income	4.6	8.8
Reserves and other	20.8	21.2
Subtotal	119.1	139.5
Valuation allowance	(58.9)	(57.8)
Total assets	\$60.2	\$81.7
Liabilities		
Accelerated depreciation	(160.6)	(118.0)
Accelerated amortization	(12.9)	(12.0)
Other	(0.4)	(0.3)
Total liabilities	\$(173.9)	\$(130.3)
Net deferred tax liabilities	\$(113.7)	\$(48.6)

Deferred tax assets and deferred tax liabilities as presented in the consolidated balance sheets as of December 31, 2016 and 2015 are as follows and are recorded in prepaid expenses and other current assets, deferred tax assets, other accrued liabilities and other non-current liabilities in the consolidated balance sheets:

(In millions)	2016	2015
Long-term deferred tax assets, net	8.9	15.7
Long-term deferred tax liability, net	(122.6)	(64.3)
Net deferred tax (liabilities) assets	\$(113.7)	\$(48.6)

During November 2015, the FASB issued ASU 2015-17, Balance Sheet Classification of Deferred Taxes, which simplifies the presentation of deferred income taxes. ASU2015-17 provides presentation requirements to classify deferred tax assets and liabilities as noncurrent in a classified statement of financial position. The standard is effective for fiscal years beginning after December 15, 2016, including interim periods within that reporting period. We early adopted ASU 2015-17 effective December 31, 2015, prospectively

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, 2016 and 2015 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, 2016 and 2015 was an increase of \$1.1

million and a decrease of \$2.7 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, 2016, we had tax credit carryforwards for U.S. tax purposes of \$14.1 million available to offset future income taxes. These credits will begin to expire if not utilized in 2017.

We also had net operating loss carryforwards for U.S. and foreign income tax purposes of \$17.2 million and \$222.1 million, respectively, for which there were foreign valuation allowances of \$220.6 million as of December 31, 2016. Our foreign net operating losses can be carried forward without limitation in Belgium, Luxembourg, Spain and the U.K. The carryforward period in China is limited to 5 years. We have a full 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, 2016, 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		
	2016	2015	2014
Balance as of January 1,	\$25.3	\$43.1	\$42.7
Additions based on tax positions related to the current year	7.3	1.7	3.2
(Reductions) additions for tax positions of prior years	(11.1)	(16.6)	(0.4)
Expiration of the statute of limitations for the assessment of taxes	(4.2)	(0.6)	(0.4)
Other, including currency translation	(0.6)	(2.3)	(2.0)
Balance as of December 31,	\$16.7	\$25.3	\$43.1

Included in the unrecognized tax benefits of \$16.7 million at December 31, 2016 was \$16.7 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. The Company recognized \$1.1 million, \$0.6 million, \$1.5 million of interest expense and penalties related to the above unrecognized tax benefits in 2016, 2015 and 2014, respectively. The Company had accrued interest of approximately \$2.1 million and \$2.2 million as of December 31, 2016 and 2015, respectively. During 2016, we reversed \$1.1 million of interest related to unrecognized tax benefits.

We are subject to taxation in the U.S. and various states and foreign jurisdictions. The U.S. tax returns have been audited through 2012. Foreign and U.S. state jurisdictions have statutes of limitations generally ranging from 3 to 5 years. Years still open to examination by the U.S. (2013 onward) and foreign tax authorities in major jurisdictions include Austria (2012 onward), Belgium (2014 onward), France (2014 onward), Spain (2004 onward) and the U.K. (2014 onward). We are currently under examination in the U.S. and certain foreign jurisdictions.

As of December 31, 2016, 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 2004 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 disclosed as of December 31, 2016 may decrease approximately \$2 to \$3 million in the fiscal year ending December 31, 2017. 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, 2016, 2015 and 2014 was as follows:

(Number of shares in millions)	2016	2015	2014
Common stock:			
Balance, beginning of year	106.0	104.8	104.0
Activity under stock plans	0.7	1.2	0.8
Balance, end of year	106.7	106.0	104.8
Treasury stock:			
Balance, beginning of year	12.5	9.3	5.1
Repurchased	2.8	3.2	4.2
Balance, end of year	15.3	12.5	9.3
Common stock outstanding	91.4	93.5	95.5

In October 2015, our Board authorized the repurchase of an additional \$250 million of the Company's common stock ("2015 Repurchase Plan"). During 2016 and 2015, the Company spent \$111.1 million and \$146.1 million to repurchase common stock. This included \$100 million to complete the 2014 Repurchase Plan and \$157.2 million under the 2015 Repurchase Plan to repurchase common stock.

In June 2014, our Board authorized a plan to repurchase \$150 million of our outstanding common stock ("2014 Repurchase Plan"). In July 2013, our Board authorized us to repurchase \$150 million of our outstanding common stock ("2013 Repurchase Plan"), which was completed during the second quarter of 2014. During 2014, the Company spent \$160.0 million to repurchase shares of common stock under the approved plans.

On February 9, 2017, the Board authorized the repurchase on an additional \$300 million of the Company's common stock.

Note 10 — Stock-Based Compensation

The following table details the stock-based compensation expense by type of award for the years ended December 31, 2016, 2015 and 2014:

(In millions, except per share data)	Year Ended December 31,		
	2016	2015	2014
Non-qualified stock options	\$3.6	\$3.3	\$3.6
Restricted stock, service based ("RSUs")	5.8	6.4	6.0

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Restricted stock, performance based (“PRsUs”)	6.3	7.9	7.4
Employee stock purchase plan	0.4	0.3	0.2
Stock-based compensation expense	\$16.1	\$17.9	\$17.2

Tax benefit from stock exercised and converted during the period \$2.8 \$9.2 \$5.8
 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, 2016 is as follows:

	Number of Options (In millions)	Weighted- Average Exercise Price	Weighted-Average Remaining Contractual Life (in years)
Outstanding at December 31, 2013	3.0	\$ 17.30	5.96
Options granted	0.2	\$ 43.01	
Options exercised	(0.4)	\$ 14.66	
Outstanding at December 31, 2014	2.8	\$ 19.12	4.95
Options granted	0.2	\$ 43.96	
Options exercised	(0.7)	\$ 12.77	
Outstanding at December 31, 2015	2.3	\$ 23.75	5.39
Options granted	0.3	\$ 41.71	
Options exercised	(0.3)	\$ 20.17	
Outstanding at December 31, 2016	2.3	\$ 26.08	5.20

(In millions, except weighted average exercise price)	Year Ended December 31,	
	2016	2015
Aggregate intrinsic value of outstanding options	\$57.2	\$51.7
Aggregate intrinsic value of exercisable options	\$53.2	\$48.7
Total intrinsic value of options exercised	\$6.7	\$26.0
Total number of options exercisable	1.8	1.8
Weighted average exercise price of options exercisable	\$21.99	\$19.83
Total unrecognized compensation cost on nonvested options (a)	\$1.1	\$1.2

(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.

The following table summarizes information about non-qualified stock options outstanding as of December 31, 2016:

Range of Exercise Prices	Options Outstanding		Options Exercisable	
	Number of Options Outstanding (a)	Weighted Average Remaining Life (in Years)	Weighted Average Exercise Price	Number of Options Exercisable (a)

\$ 7.83 – 19.02	0.9	3.24		\$ 14.13	0.8	\$ 14.13
\$ 20.76 – 28.27	0.8	4.92		\$ 25.57	0.8	\$ 25.57
\$ 41.71 – 43.96	0.6	8.22		\$ 42.84	0.2	\$ 43.40
\$ 7.83 – 43.96	2.3		5.20	\$ 26.08	1.8	\$ 21.99

(a) in millions

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, 2016, 2015 and 2014:

	2016	2015	2014
Risk-free interest rate	1.62 %	1.56 %	2.17 %
Expected option life (in years) Executive	6.77	6.84	6.88
Expected option life (in years) Non-Executive	4.72	6.09	6.18
Dividend yield	1.0 %	1.0 %	— %
Volatility	38.41 %	35.59 %	37.52 %
Weighted-average fair value per option granted	\$ 14.65	\$ 14.95	\$ 17.91

We determine the expected option life for each grant based on ten years of historical option activity for two separate groups of employees (executive and non-executive). The weighted-average expected life (“WAEL”) 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. No dividends were paid in 2014.

Restricted Stock Units — Service Based

As of December 31, 2016, a total of 508,395 shares of service based restricted stock (“RSUs”) 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 stock based compensation expense related to awards granted to retirement-eligible employees is expensed on the grant date.

The table presented below provides a summary of the Company’s RSU activity for the years ended December 31, 2016, 2015 and 2014:

	Number of RSUs	Weighted- Average Grant Date Fair Value
	(In millions)	
Outstanding at December 31, 2013	0.6	\$ 23.79
RSUs granted	0.1	\$ 42.76
RSUs issued	(0.2)	\$ 24.13
Outstanding at December 31, 2014	0.5	\$ 27.76
RSUs granted	0.1	\$ 43.96
RSUs issued	(0.1)	\$ 28.95
Outstanding at December 31, 2015	0.5	\$ 31.73
RSUs granted	0.1	\$ 42.05
RSUs issued	(0.1)	\$ 37.01
Outstanding at December 31, 2016	0.5	\$ 33.72

As of December 31, 2016, there was total unrecognized compensation cost related to nonvested RSUs of \$4.6 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, 2016, a total of 375,375 shares of performance based restricted stock (“PRSUs”) 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 trued up as projections change. Based on current projections and performance targets, it is estimated that an additional 0.2 million

performance shares may be issuable for the 2014, 2015 and 2016 awards. 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, 2016, 2015 and 2014:

	Number of PRSUs (In millions)	Weighted- Average Grant Date Fair Value
Outstanding at December 31, 2013	0.5	\$ 24.60
PRSUs granted	0.1	\$ 43.01
PRSUs additional performance shares	0.1	\$ 19.02
PRSUs issued	(0.3)	\$ 19.01
Outstanding at December 31, 2014	0.4	\$ 31.68
PRSUs granted	0.1	\$ 43.96
PRSUs additional performance shares	0.1	\$ 42.23
PRSUs issued	(0.2)	\$ 24.95
Outstanding at December 31, 2015	0.4	\$ 36.59
PRSUs granted	0.2	\$ 43.96
PRSUs additional performance shares	0.1	\$ 28.09
PRSUs issued	(0.3)	\$ 28.15
Outstanding at December 31, 2016	0.4	\$ 42.66

As of December 31, 2016, there was total unrecognized compensation cost related to nonvested PRSUs of \$2.0 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 2016, cash received from stock option exercises and from employee stock purchases was \$5.3 million. We used \$6.4 million in cash related to the shares withheld to satisfy employee tax obligations for RSUs and PRSUs converted during the year ended December 31, 2016.

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

As of December 31, 2016, an aggregate of 2.3 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 47,952 and 34,468 ESPP shares purchased in 2016

and 2015, respectively.

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Note 11 — Net Income Per Common Share

Computations of basic and diluted net income per common share for the years ended December 31, 2016, 2015 and 2014, are as follows:

(In millions, except per share data)	2016	2015	2014
Net income	\$249.8	\$237.2	\$209.4
Basic net income per common share:			
Weighted average common shares outstanding	92.8	95.8	96.8
			\$
Basic net income per common share	\$2.69	\$2.48	2.16
Diluted net income per common share:			
Weighted average common shares outstanding — Basic	92.8	95.8	96.8
Plus incremental shares from assumed conversions:			
Restricted stock units	0.4	0.5	0.7
Stock options	1.0	0.9	1.2
Weighted average common shares outstanding — Diluted	94.2	97.2	98.7
			\$
Diluted net income per common share	\$2.65	\$2.44	2.12
Anti-dilutive shares outstanding, excluded from computation	0.4	—	0.2

Note 12 — Derivative Financial Instruments

Interest Rate Swap Agreements

As of December 31, 2016, the Company had two agreements to swap \$50 million of floating rate obligations for fixed rate obligations at an average of 0.878% and 1.087% against LIBOR in U.S. dollars. Of the total of \$100 million of swaps outstanding at December 31, 2016, \$50 million matures on each of March 2017 and September 2019. Each of the swaps was accounted for as a cash flow hedge of our floating rate bank loans. To ensure the swaps were highly effective, all the principal terms of the swaps matched the terms of the bank loans. The fair value of the interest rate swaps was an asset of \$0.7 million at December 31, 2016 and a liability of \$0.1 million at December 31, 2015.

In December 2016 we swapped €25.0 million of floating rate obligations for fixed rate obligations at a rate of 0.365% against EURIBOR in Euros. The swap amortizes over seven equal annual installments beginning June 30, 2017 until

the final maturity on June 30, 2023. The derivative is accounted for as a cash flow hedge of the floating rate French term loan. To ensure the swap is highly effective, all the principal terms of the swap matched the terms of the bank loan. The fair value of the interest rate swap was a liability of \$0.1 million at December 31, 2016.

The Company also uses treasury locks to protect against unfavorable movements in the benchmark treasury rate related to forecasted debt issuances. On September 22, 2016, the Company entered into an interest rate treasury lock agreement with a notional value of \$150 million for a forecasted 2017 debt issuance, in order to increase available debt capacity and for general corporate purposes. We account for this interest rate treasury lock as a cash flow hedge so any change in fair value is recorded into other comprehensive income and then amortized into interest expense over the life of the debt upon issuance. As of December 31, 2016, the fair value of this the treasury lock was \$10.3 million pre-tax and is recorded in current assets and other comprehensive income, net of tax. The interest rate lock had no impact on net income or cash flows from operations for the year ended December 31, 2016.

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 2019. The aggregate notional amount of these contracts was \$423.8 million and \$417.5 million at December 31, 2016 and December 31, 2015, 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. The effective portion of the hedges was a loss of \$32.2 million; \$26.7 million and \$18.4 million, for the years ended December 31, 2016, 2015 and 2014, respectively, and are recorded in other comprehensive income. At December 31, 2016, \$33.9 million of the carrying amount of these contracts was classified in other liabilities on the consolidated balance sheets and \$0.9 million in other assets and \$22.1 million classified in other liabilities at December 31, 2015. During the years

ended December 31, 2016, 2015 and 2014, we recognized a net loss of \$19.4 million, a net loss of \$17.8 million and a net gain of \$4.6 million, respectively, recorded in sales. For the three years ended December 31, 2016, 2015 and 2014, 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, 2016, 2015 and 2014, we recognized net foreign exchange losses of \$0.9 million, \$14.9 million, and \$16.3 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 \$1.0 million classified in other assets and \$0.3 million in other liabilities and \$0.4 million classified in other assets and \$0.4 million in other liabilities on the December 31, 2016 and 2015 consolidated balance sheets, respectively.

The activity, net of tax, in “accumulated other comprehensive loss related to foreign currency forward exchange contracts for the years ended December 31, 2016, 2015 and 2014 was as follows:

(In millions)	2016	2015	2014
Unrealized (losses) gains at beginning of period, net of tax	\$(15.0)	\$(9.2)	\$7.2
Losses (gains) reclassified to net sales	14.4	11.8	(3.2)
Decrease in fair value	(25.3)	(17.6)	(13.2)
Unrealized losses at end of period, net of taxes	\$(25.9)	\$(15.0)	\$(9.2)

Unrealized losses of \$18.7 million recorded in “accumulated other comprehensive income,” net of tax of \$3.3 million, as of December 31, 2016 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.

Note 13 — 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 on 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. Such estimates are not discounted to reflect the time value of money due to the uncertainty in estimating the timing of the expenditures, which may extend over several years.

While it is impossible to ascertain the ultimate legal and financial liability with respect to certain contingent liabilities and claims, we believe, based upon our examination of currently available information, our experience to date, and advice from legal counsel, that the individual and aggregate liabilities resulting from the ultimate resolution of these contingent matters, after taking into consideration our existing insurance coverage and amounts already provided for,

will not have a material adverse impact on our consolidated results of operations, financial position or cash flows.

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 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 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 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 matters will not be material.

Lodi, New Jersey Site

Pursuant to the New Jersey Industrial Site Recovery Act, Hexcel entered into an Administrative Consent Order for the environmental remediation of a manufacturing facility we own and formerly operated in Lodi, New Jersey. Hexcel has completed all active investigation and remediation activities, including restoration of the river embankment and installation of a barrier to prevent contaminant migration and have received a Response Action Outcome. Hexcel is in the process of monitoring contaminant levels to support a Monitored Natural Attenuation program and therefore we believe the spending on this program is largely complete.

Lower Passaic River Study Area

Hexcel and a group of approximately 52 other PRPs comprise the Lower Passaic Cooperating Parties Group (the "CPG"). Hexcel and the CPG are subject to a May 2007 Administrative Order on Consent ("AOC") to perform a Remedial Investigation/Feasibility Study ("RI/FS") of environmental conditions in the Lower Passaic River watershed. 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 river in addition to a "no action" option. The ROD calls for capping and dredging of the lower eight miles of the Passaic River, with the placement of an engineered cap over the entire eight miles, at an expected cost ranging from \$0.97 billion to \$2.07 billion, according to the EPA. Because the EPA has not yet selected a remedy for the upper nine miles of the Lower Passaic River, this estimate range does not include any costs related to a future remedy for the upper portion of the river. Now that it has issued the final ROD, the EPA will seek to hold some combination of the PRPs liable to perform the work selected through the ROD. At this point, we have not yet determined our allocable share of performing the selected remedy. However, based on a review of the Company's position, and as no point within the range is a more probable outcome than any other point, the Company has determined that its accrual is sufficient at this time. The total accrued liability related to this matter was \$2.1 million at December 31, 2016 and \$1.9 million at December 31, 2015. Despite the issuance of the final ROD, there continue to be many uncertainties associated with the selected remedy and the Company's allocable share of the remediation. Given those uncertainties, the amounts accrued may not be indicative of the amounts for which the Company is ultimately responsible and will be refined as events in the remediation process develop.

Kent, Washington Site

We were party to a cost-sharing agreement regarding the operation of certain environmental remediation systems necessary to satisfy a post-closure care permit issued to a previous owner of our Kent, Washington site by the EPA. Under the terms of the cost-sharing agreement, we were obligated to reimburse the previous owner for a portion of the cost of the required remediation activities. The previous owner, who also continues to own an adjacent site, has installed certain remediation and isolation technologies on its upgradient site and is operating those pursuant to an order agreed with the State of Washington. We and the Washington Department of Ecology have reached an agreed order to perform certain cleanup activities on our site by certain deadlines, and we are in full compliance with the order. The Department of Ecology has recently approved a reduced number of wells and a reduced pumping volume for Hexcel's wells on its property and agreed with a plan for more active remediation going forward. The total accrued liability related to this matter was \$0.3 million at December 31, 2016 and \$0.5 million at December 31, 2015.

Omega Chemical Corporation Superfund Site, Whittier, California

We are a PRP at a former chemical waste site in Whittier, California. The PRPs at Omega have established a PRP Group, the "Omega PRP Group", and are currently investigating and remediating soil and groundwater at the site pursuant to a Consent Decree with the EPA. The Omega PRP Group has attributed approximately 1.07% of the waste

tonnage sent to the site to Hexcel. In addition to the Omega site specifically, the EPA is investigating the scope of regional groundwater contamination in the vicinity of the Omega site and issued a Record of Decision; the Omega PRP Group members have been noticed by the EPA as PRPs who will be required to be involved in the remediation of the regional groundwater contamination in that vicinity as well. As a member of the Omega PRP Group, Hexcel will incur costs associated with the investigation and remediation of the Omega site and the regional groundwater remedy, although 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 \$0.6 million at December 31, 2016 and \$0.3 million at December 31, 2015.

Environmental remediation reserve activity for the three years ended December 31, 2016 was as follows:

(In millions)	For the year ended December 31,		
	2016	2015	2014
Beginning remediation accrual balance	\$ 2.9	\$ 5.0	\$ 3.9
Current period expenses	1.2	0.5	6.0
Cash expenditures	(0.9)	(2.6)	(4.9)
Ending remediation accrual balance	\$ 3.2	\$ 2.9	\$ 5.0

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; Kent, Washington; and other sites are accrued in the consolidated balance sheets. As of December 31, 2016 and 2015, our aggregate environmental related accruals were \$3.2 million and \$2.9 million, respectively. As of December 31, 2016 and 2015, \$1.4 million and \$1.1 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, 2016 and 2015.

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 spending charged directly to our reserve balance was \$0.7 million and \$2.6 million for the years ended December 31, 2016 and 2015, respectively. In addition, our operating costs relating to environmental compliance charged directly to expense were \$10.1 million and \$10.7 million for the years ended December 31, 2016 and 2015.

Product Warranty

Warranty expense for the years ended December 31, 2016, 2015 and 2014, 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, 2013	\$ 4.5
Warranty expense	10.3
Deductions and other	(3.5)
Balance as of December 31, 2014	\$ 11.3
Warranty expense	3.5

Deductions and other	(8.7)
Balance as of December 31, 2015	\$ 6.1
Warranty expense	5.1
Deductions and other	(5.7)
Balance as of December 31, 2016	\$ 5.5

Note 14 — Supplemental Cash Flow

Supplemental cash flow information, for the years ended December 31, 2016, 2015 and 2014, consisted of the following:

(In millions)	2016	2015	2014
Cash paid for:			
Interest	\$23.2	\$9.8	\$8.1
Taxes	\$31.7	\$40.8	\$27.5

Note 15 — 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, 2016 and 2015 were as follows:

(In millions)	Unrecognized Net Defined Plan Costs	Change in Fair Value of Derivatives Products	Foreign Currency Translation	Total
Balance at December 31, 2015	\$ (22.7)	\$ (14.6)	\$ (86.6)	\$(123.9)
Other comprehensive income (loss) before reclassifications	9.0	(18.7)	(54.5)	(61.0)
Amounts reclassified from accumulated other comprehensive loss	(0.9)	14.6	—	10.5
Other comprehensive income (loss)	8.1	(4.1)	(54.5)	(50.5)
Balance at December 31, 2016	\$ (14.6)	\$ (18.7)	\$ (141.1)	\$(174.4)

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, 2016 were net gains of \$1.3 million less taxes of \$0.4 million primarily due to the amortization of net actuarial losses. 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, 2016 were net losses of \$19.6 million less taxes of \$5.1 million related to foreign currency forward exchange contracts and \$0.2 million less taxes of \$0.1 million related to interest swaps. The currency translation adjustments are not currently adjusted for income taxes as they relate to indefinite investments in non-U.S. subsidiaries.

Note 16 — 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. Therefore, for each segment, we have also reported disaggregated sales by end market.

The following table presents financial information on our segments as of December 31, 2016, 2015 and 2014, and for the years then ended.

(In millions)	Composite Engineered & Corporate			Total
	Materials	Products	Other	
Third-Party Sales				
2016	\$ 1,610.0	\$ 394.3	\$ —	\$ 2,004.3
2015	1,458.7	402.5	—	1,861.2
2014	1,420.9	434.6	—	1,855.5
Intersegment sales				
2016	\$ 67.6	\$ 0.1	\$ (67.7)	\$ —
2015	70.4	8.5	(78.9)	—
2014	66.7	1.8	(68.5)	—
Operating income (loss)				
2016	\$ 368.3	\$ 50.0	\$ (58.2)	\$ 360.1
2015	336.2	55.8	(59.6)	332.4
2014	308.8	67.0	(70.0)	305.8
Depreciation				
2016	\$ 86.0	\$ 7.2	\$ 0.1	\$ 93.3
2015	70.0	6.1	0.3	76.4
2014	65.5	5.5	0.2	71.2
Equity in earnings from affiliated companies				
2016	\$ —	\$ 2.5	\$ —	\$ 2.5
2015	0.2	1.8	—	2.0
2014	—	1.4	—	1.4
Other expense (income), net				
2014	\$ —	\$ —	\$ 6.0	\$ 6.0
Segment assets				
2016	\$ 2,127.2	\$ 220.7	\$ 52.7	\$ 2,400.6
2015	1,892.0	239.4	56.0	2,187.4
2014	1,600.7	241.1	194.6	2,036.4
Investments in affiliated companies				
2016	\$ —	\$ 23.1	\$ 30.0	\$ 53.1
2015	10.1	20.3	—	30.4
2014	10.2	24.0	—	34.2
Accrual basis additions to property, plant and equipment				
2016	\$ 305.2	\$ 14.9	\$ 0.1	\$ 320.2
2015	276.0	13.0	—	289.0
2014	260.1	10.1	—	270.2

Geographic Data

Net sales and long-lived assets, by geographic area, consisted of the following for the three years ended December 31, 2016, 2015 and 2014:

(In millions)	2016	2015	2014
Net sales by Geography (a):			
United States	\$957.8	\$955.4	\$933.2
International			
France	335.2	320.6	346.9
Spain	219.7	217.8	183.4
Germany	169.5	83.2	69.8
United Kingdom	154.2	125.1	135.8
Austria	92.8	93.1	112.6
Other	75.1	66.0	73.8
Total international	1,046.5	905.8	922.3
Total consolidated net sales	\$2,004.3	\$1,861.2	\$1,855.5
Net Sales to External Customers (b):			
United States	\$833.1	\$850.1	\$834.5
International			
Germany	210.5	163.7	154.8
Spain	204.4	149.7	155.3
France	153.8	140.3	159.1
United Kingdom	95.5	84.2	95.6
Other	507.0	473.2	456.2
Total international	1,171.2	1,011.1	1,021.0
Total	\$2,004.3	\$1,861.2	\$1,855.5
Long-lived assets (c):			
United States	\$1,213.8	\$1,109.9	\$990.1
International			
France	217.2	112.1	68.7
United Kingdom	130.8	133.4	116.2
Spain	56.2	59.8	68.5
Other	79.8	69.3	88.8
Total international	484.0	374.6	342.2
Total consolidated long-lived assets	\$1,697.8	\$1,484.5	\$1,332.3

(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.

Significant Customers and Suppliers

Approximately 41%, 35% and 31% of our 2016, 2015 and 2014 net sales, respectively, were to Airbus and its subcontractors. Of the 41% of overall sales to Airbus and its subcontractors in 2016, 37% related to Commercial Aerospace market applications and 4% related to Space & Defense market applications. Approximately 28%, 31% and 32% of our 2016, 2015 and 2014 net sales, respectively, were to Boeing and related subcontractors. Of the 28% of overall sales to Boeing and its subcontractors in 2016, 26% related to Commercial Aerospace market applications and 2% related to Space & Defense market applications. In the Composite Materials segment approximately 17%, 21% and 20% of sales for 2016, 2015 and 2014, respectively, were to Boeing and its subcontractors. Approximately 48%, 42% and 39% of sales for 2016, 2015 and 2014, respectively were to Airbus and its subcontractors. In the Engineered Products segment approximately 69%, 71% and 71% of sales for 2016, 2015 and 2014, 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 17 — Other Expense (Income), net

In 2014, the Company recorded a \$6.0 million pre-tax charge for additional remediation related to a former manufacturing facility.

Note 18 — Non-operating Expense

In June 2016, the Company amended and extended its \$700 million senior unsecured revolving credit facility that now matures in June 2021. As a result of this amendment, we accelerated certain unamortized costs of the credit facility being replaced incurring a pretax charge of \$0.4 million.

In September 2014, the Company entered into a \$700 million senior unsecured revolving credit facility. As a result of this refinancing, we accelerated certain unamortized costs of the credit facility being replaced incurring a pretax charge of \$0.5 million.

Note 19 — 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, 2016 and 2015, we did not have any assets or liabilities that utilize 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 \$12.0 million and \$34.3 million, and approximately \$1.3 million and \$22.6 million respectively at December 31, 2016 and 2015. 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 assets and liabilities was \$0.7 million and \$0.1 million at December 31, 2016.

T-Locks-valued using UST yield curves at the reporting date. The fair value of assets was \$10.3 million at December 31, 2016.

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, 2016 was \$1.0 million and \$34.2 million, respectively.

Counterparties to the above contracts are highly rated financial institutions, none of which experienced any significant downgrades in 2016 that would reduce the receivable amount owed, if any, to the Company.

Note 20 - Quarterly Financial and Market Data (Unaudited)

Quarterly financial and market data for the years ended December 31, 2016 and 2015 were:

(In millions, except per share data)	First Quarter	Second Quarter	Third Quarter	Fourth Quarter
2016				
Net sales	\$497.7	\$522.6	\$500.5	\$483.5
Gross margin	143.0	150.3	135.7	135.6
Operating income	83.9	100.1	89.1	87.0
Net income	56.0	66.1	68.2	59.5

Net income per common share:

Basic	\$0.60	\$0.71	\$0.74	\$0.65
Diluted	\$0.59	\$0.70	\$0.72	\$0.64

Market price:

High	\$45.40	\$46.26	\$45.68	\$54.97
Low	\$38.38	\$39.15	\$40.82	\$42.04

2015

Net sales	\$471.8	\$475.7	\$448.8	\$464.9
Gross margin	141.8	139.1	124.1	127.8
Operating income	82.6	90.6	78.0	81.2
Net income	68.1	61.7	53.5	53.9

Net income per common share:

Basic	\$0.71	\$0.64	\$0.56	\$0.57
Diluted	\$0.70	\$0.63	\$0.55	\$0.56

Market price:

High	\$51.11	\$51.58	\$54.36	\$48.20
Low	\$40.05	\$48.19	\$43.89	\$42.38

Note 21 – Business Acquisition and Investments in Affiliates

In 2016, we invested \$15.0 million in Oxford Performance Materials (“OPM”). OPM produces thermoplastic, carbon fiber reinforced 3D printed parts primarily for Commercial Aerospace and Space and Defense applications. In addition, if OPM achieves certain milestones within an 18-month period or at Hexcel’s discretion, the Company will invest an additional \$10 million. On January 31, 2017, Hexcel made the additional \$10 million investment. We issued an 8% convertible secured promissory note to Luminati Aerospace LLC (“Luminati”), in the amount of \$10 million.

Luminati is an aerospace technology company focusing on research, development, testing, and manufacturing of next generation solar-electric unmanned aerial vehicles, or UAVs. The note matures in 2023 and the principal and interest are convertible into Luminati stock. The note will convert upon Luminati achieving certain milestones or at Hexcel's discretion. We also invested \$5 million in Carbon Conversions Incorporated ("CCI"). CCI is a leader in carbon fiber recycling and repurposing. We account for these three investments using the cost method.

On January 5, 2016, the Company completed its acquisition of Formax UK Limited ("Formax") by purchasing the remaining 50% at a price of \$12 million, of which \$9 million was paid on closing and the remaining will be paid in installments over the next four years. The Company previously acquired a 50% interest in the privately-owned company in December 2014. Formax is a leading manufacturer of composite reinforcements, specializing in the production of lightweight carbon fiber multi-axials and highly engineered glass fiber, carbon fiber and aramid fiber fabrics.

Located in Leicester, U.K., Formax is a leading manufacturer of composite reinforcements, specializing in the production of lightweight carbon multi-axials and highly engineered glass fiber and aramid fiber fabrics. The total purchase price, net of cash acquired and including the 50% interest acquired in December 2014, was \$22 million and the assumption of long-term debt of \$8.2 million.

The step acquisition was accounted for under the acquisition method of accounting with the Company treated as the acquiring entity. Accordingly, the consideration paid by the Company to complete the acquisition has been recorded to the assets acquired and liabilities assumed based upon their estimated fair values as of the date of acquisition. The Company engaged a third party to assist

with the valuation of assets including property plant and equipment and intangible assets. The fair value of the property, plant and equipment was based upon the assessed value of the land, which was determined to approximate fair value, as well as the income approach in determining the fair value of building improvements and equipment. The carrying values for current assets and liabilities were deemed to approximate their fair values due to the short-term nature of these assets and liabilities. The excess of the purchase price over the estimated fair value of the net assets acquired, including identifiable intangible assets, of \$10.2 million was allocated to goodwill. The goodwill recognized is attributable to expected revenue synergies generated by the integration of our products and technologies with those of Formax, costs synergies resulting from the consolidation or elimination of certain functions, and intangible assets that do not qualify for separate recognition, such as the assembled workforce of Formax.

Schedule II

Hexcel Corporation and Subsidiaries

Valuation and Qualifying Accounts

	Balance at			Balance
	beginning	Charged to	Deductions	at end of
(In millions)	of year	expense/(recovery)	and other	year
Year ended December 31, 2016				
Allowance for doubtful accounts	\$ 0.3	\$ 0.1	\$ —	\$ 0.4
Valuation allowance for deferred tax assets	57.8	9.3	(8.2)	58.9
Year ended December 31, 2015				
Allowance for doubtful accounts	\$ 0.4	\$ —	\$ (0.1)	\$ 0.3
Valuation allowance for deferred tax assets	60.5	3.5	(6.2)	57.8
Year ended December 31, 2014				
Allowance for doubtful accounts	\$ 0.9	\$ —	\$ (0.5)	\$ 0.4
Valuation allowance for deferred tax assets	62.3	6.8	(8.6)	60.5