Neenah Inc
Form 10-K
February 22, 2019

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

FORM 10-K

(Mark One)
ý ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the fiscal year ended December 31, 2018
OR
o 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 001-32240
(Exact name of registrant as specified in its charter)

Delaware	20-1308307
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)
3460 Preston Ridge Road Alpharetta, Georgia	30005
(Address of principal executive offices)	(Zip Code)

Registrant's telephone number, including area code:
(678) 566-6500
Securities registered pursuant to Section 12(b) of the Act:

Title of Each Class	Name of Each Exchange on Which Registered
Common Stock — $0.01 Par Value	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-seasoned issuer, as defined in Rule 405 of the Securities Act. Yes ý No o
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 o No ý
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 ý No o
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 such shorter period that the registrant was required to submit and post such files). Yes ý No o
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. o
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 definitions of "large accelerated filer," "accelerated filer," and "smaller reporting company" in Rule 12b-2 of the Exchange Act. (Check one):
Non-accelerated filer o

Large accelerated filer ý	Accelerated filer o	(Do not check if a smaller reporting company)	Smaller reporting company o	Emerging growth company o

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

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

The aggregate market value of the registrant's common stock held by non-affiliates on June 30, 2018 (based on the closing stock price on the New York Stock Exchange) on such date was approximately $1,205,000,000.

As of February 20, 2019, there were 16,860,000 shares of the Company's common stock outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

Certain information contained in the definitive proxy statement for the Company's Annual Meeting of Stockholders to be held on May 22, 2019 is incorporated by reference into Part III hereof.

TABLE OF CONTENTS

PART I

In this report, unless the context requires otherwise, references to "we," "us," "our," "Neenah" or the "Company" are intended to mean Neenah, Inc., its consolidated subsidiaries and predecessor companies.

Item 1. Business

Overview

We are a specialty materials company organized into two primary businesses: a performance-based technical products business and a premium fine paper and packaging business.

Our technical products business is a leading international producer of transportation, water and other filter media and durable, saturated and coated substrates for a variety of end markets. We focus on categories where we believe we are, or can be, a market leader. These categories include filtration media for transportation, water and other uses, backings for specialty tapes and abrasives, performance labels, digital image transfer, and other specialty markets. Our dedicated technical products manufacturing facilities are located in Weidach and Bruckmühl, Germany, Eerbeek, Netherlands, Bolton, England, Munising, Michigan, and Pittsfield, Massachusetts. In addition, certain technical products are manufactured along with fine paper and packaging products in shared facilities located in Brattleboro, Vermont, Brownville and Lowville, New York, and Quakertown, Pennsylvania. In 2017, a filtration machine (which was converted from a fine paper machine) began production in Appleton, Wisconsin, a site also shared with the fine paper and packaging business.

Our fine paper and packaging business is a leading supplier of premium printing, packaging, and other high-end specialty papers in North America. Our products include some of the most recognized and preferred brands in North America, where we enjoy leading market positions in many of our product categories. We sell our products primarily to authorized paper distributors, as well as through converters, major national retailers and specialty businesses. Our primary fine paper and packaging manufacturing facilities are located in Neenah and Whiting, Wisconsin. Certain products are manufactured in shared facilities located in Brattleboro, Vermont, Brownville and Lowville, New York, and Quakertown, Pennsylvania, as well as a site shared with technical products in 2017 in Appleton, Wisconsin. In August 2017, we purchased a laminating asset in Great Barrington, Massachusetts to support continued growth in our premium packaging business.

For a description of the shared facilities, see Item 2, "Properties."

Company Structure
Our corporate structure consists of Neenah, Inc. and eight direct wholly-owned subsidiaries.
Neenah, Inc. is a Delaware corporation that holds our trademarks and patents related to all of our U.S. businesses (except Neenah Paper FVC, Inc), all of our U.S. fine paper and packaging inventory, the real estate, mills and manufacturing assets associated with our fine paper and packaging operations in Neenah and Whiting, Wisconsin and all of the equity in our subsidiaries listed below. The common stock of Neenah is publicly traded on the New York Stock Exchange under the symbol "NP."
Neenah Paper Michigan, Inc. is a Delaware corporation and a wholly owned subsidiary of Neenah that owns the real estate, mill and manufacturing assets associated with our U.S. technical products business in Munising, Michigan.
Neenah Paper FVC, LLC is a Delaware limited liability company and wholly owned subsidiary of Neenah that owns all of the equity of Neenah Paper FR, LLC. Neenah Paper FR, LLC ("Fox River") is a Delaware limited liability company that owns the real estate, mill and manufacturing assets associated with our fine paper and packaging operation in Appleton, Wisconsin and leases the real estate and owns the manufacturing assets associated with our fine paper and packaging operations in Great Barrington, Massachusetts.
Neenah Paper International Holding Company, LLC is a Delaware limited liability company and wholly owned subsidiary of Neenah that owns all of the equity of Neenah Paper International, LLC. Neenah Paper International, LLC is a Delaware limited liability company that owns all of the equity of Neenah Germany GmbH and in conjunction with Neenah Germany GmbH all of the equity of Neenah Services GmbH & Co. KG.
NPCC Holding Company LLC is a Delaware limited liability company and wholly owned subsidiary of Neenah that owns all of the equity of Neenah Paper Company of Canada ("Neenah Canada"). Neenah Canada is a Nova Scotia unlimited liability corporation that holds certain post-employment liabilities of our former Canadian operations.
Neenah Paper International Finance Company BV is a private company with limited liability organized under the laws of the Netherlands and a wholly owned subsidiary of Neenah that facilitates the financing of our international operations.
Neenah Filtration, LLC is a Delaware limited liability company and wholly owned subsidiary of Neenah that owns all of the equity of Neenah Technical Materials, Inc. ("NTM") and Neenah Filtration Appleton, LLC ("NFA"). NTM is a Massachusetts corporation that owns all of the real estate, mills and manufacturing assets associated with our technical materials business in Pittsfield, Massachusetts. NFA is a Delaware limited liability company that owns certain assets associated with our filtration business in Appleton, Wisconsin. The filtration assets in Appleton, Wisconsin have started production in January 2017. See "Management's Discussion and Analysis of Financial Condition and Results of Operations — Liquidity and Capital Resources."
Neenah FMK Holdings, LLC is a Delaware limited liability company and a wholly owned subsidiary of Neenah that owns all of the equity of ASP FiberMark, LLC ("FiberMark"). FiberMark is a Delaware limited liability company that owns all of the equity of Neenah Northeast, LLC ("NNE") and Neenah International UK Limited, a United Kingdom corporation ("Neenah UK"). NNE is a Delaware limited liability company that owns certain real estate, mills and manufacturing assets associated with our fine paper and packaging business and technical products business located in Brattleboro, Vermont, West Springfield, Massachusetts, Quakertown, Pennsylvania, and Brownville and Lowville, New York. Neenah UK is a United Kingdom corporation that owns all of the equity of Neenah Red Bridge International Limited ("Red Bridge"). Red Bridge is a United Kingdom corporation that owns all of the real estate, manufacturing assets and inventory associated with our technical products business in Bolton, England.
Neenah Global Holdings B.V. is a private company with limited liability organized under the laws of the Netherlands and a wholly owned subsidiary of Neenah that owns all of the equity of W.A. Sanders Coldenhove Holding BV ("Coldenhove Holding") and Neenah Hong Kong Limited, a limited liability company organized under the laws of Hong Kong ("Neenah Hong Kong"). Coldenhove Holding is a private company with limited liability organized under the laws of the Netherlands that owns all of the equity of Neenah Coldenhove B.V. ("Neenah Coldenhove"). Neenah Coldenhove is a private company with limited liability organized under the laws of the Netherlands that owns substantially all of real estate, manufacturing assets and inventory associated with our technical products business in Eerbeek, Netherlands. Neenah Hong Kong provides certain sales and marketing services to Neenah, Inc. and its affiliated entities.

2

History of the Businesses

Neenah was incorporated in April 2004 in contemplation of the spin-off by Kimberly-Clark Corporation ("Kimberly-Clark") of its technical products and fine paper businesses in the United States and its Canadian pulp business (collectively, the "Pulp and Paper Business"). We had no material assets or activities until Kimberly-Clark's transfer to us of the Pulp and Paper business on November 30, 2004. On that date, Kimberly-Clark completed the distribution of all of the shares of our common stock to the stockholders of Kimberly-Clark (the "Spin-Off"). Following the Spin-Off, we are an independent public company and Kimberly-Clark has no ownership interest in us.

Former Pulp Operations. At the Spin-Off, our pulp operations consisted of mills located in Terrace Bay, Ontario and Pictou, Nova Scotia and approximately 975,000 acres of related woodlands. We disposed of these mills and woodlands in a series of transactions from 2006 to 2010.

Technical Products. The Munising, Michigan mill was purchased by Kimberly-Clark in 1952. Subsequent to the purchase, the mill was converted to produce durable, saturated and coated papers for sale and use in a variety of industrial applications for our technical products business.

In October 2006, we purchased the outstanding interests of FiberMark Services GmbH & Co. KG and the outstanding interests of FiberMark Beteiligungs GmbH (collectively "Neenah Germany"). At acquisition, the Neenah Germany assets consisted of three mills located in Weidach, Bruckmühl and Lahnstein, Germany. These mills produced a wide range of products, including transportation filter media, nonwoven wall coverings, masking and other tapes, abrasive backings, and specialized printing and coating substrates. In October 2015, we sold the Lahnstein mill to the Kajo Neukirchen Group. The Lahnstein mill had been operating as a stand-alone business, manufacturing nonwoven wallcoverings and various other specialty papers. See Note 13 of Notes to Consolidated Financial Statements, "Discontinued Operations."

In July 2014, we purchased all of the outstanding equity of Crane Technical Materials, Inc. from Crane & Co., Inc. The acquired business provides performance-oriented wet laid nonwoven media for water filtration end markets as well as environmental, energy and industrial uses. The business has two manufacturing facilities in Pittsfield, Massachusetts.

In November 2017, we purchased all of the outstanding equity of Coldenhove. The acquired business is a specialty materials manufacturer based in the Netherlands, with a leading position in digital transfer media and other technical products. The business has one manufacturing facility in Eerbeek, Netherlands. See Note 4 of Notes to Consolidated Financial Statements, "Acquisitions."

Fine Paper and Packaging. The fine paper and packaging business was incorporated in 1885 as Neenah Paper Company, which initially operated a single paper mill in Neenah, Wisconsin. Kimberly-Clark acquired the mill in 1956. In 1981, Kimberly-Clark purchased an additional mill located in Whiting, Wisconsin and in the late 1980s and early 1990s, the capacity of the fine paper and packaging business was expanded by building two new paper machines at the Whiting mill and completing a major expansion of the Neenah facility with the installation of a new paper machine, finishing center, customer service center and an expanded distribution center.

In the first of the series of consolidating acquisitions, in March 2007, we acquired the assets and brands of Fox River (including our mill located in Appleton, Wisconsin). In January 2012, we purchased certain premium fine paper brands and other assets from Wausau Paper Mills, LLC, a subsidiary of Wausau Paper Corp. ("Wausau") and in January 2013, we purchased certain premium business paper brands from the Southworth Company ("Southworth"). In August 2017, we purchased a laminating asset in Great Barrington, Massachusetts to support continued growth in our premium packaging business.

Shared Facilities. In August 2015, we purchased all of the outstanding equity of FiberMark. We added specialty coating and finishing capabilities with this acquisition, particularly in luxury packaging and technical products. The results of operations and assets related to FiberMark are reflected in each of our business segments. These mills are located in Brattleboro, Vermont, Brownville and Lowville, New York, Quakertown, Pennsylvania and Bolton, England. On December 31, 2018, the Company completed the sale of certain equipment, inventory, real property and other specified assets relating to the Company’s premium fine paper and office products manufacturing facility located in Brattleboro, Vermont. See Note 14 of Notes to Consolidated Financial Statements, "Sale of Brattleboro Mill and Impairment Loss."

One of the two fine paper machines of the Fox River acquisition located in Appleton, Wisconsin (noted above) was converted to produce filtration products as part of NFA. This business began operations in 2017.

Business Strategy

Our mission is to create value by improving the image and performance of everything we touch. We expect to create value by growing in specialized niche markets that value performance or image and where we have competitive advantages. In managing our businesses, we believe that achieving and maintaining a leadership position in our markets, responding effectively to customer needs and competitive challenges, employing capital optimally, controlling costs, and managing risks are important to our long-term success. Strategies to deliver value include:

Enhance our leading positions in high value core categories — We will increase our participation in niche markets that can provide us with leading positions and value our core competencies in performance-based fiber and non-woven media production, coating and saturating. Key markets include transportation filtration, specialty backings and technical products, and premium fine paper and packaging.

Increasing our size, growth rate and portfolio diversification — We will invest and focus resources in higher growth specialty markets such as filtration, digital image transfer, and premium packaging, to grow with customers in new products and geographies and to enter into adjacent markets that are growing and profitable. We will do this both through organic initiatives that build on our technologies and capabilities, and through acquisitions that fit with our competencies and provide attractive financial returns.

Delivering consistent, attractive returns to our shareholders — We will continue to use Return on Invested Capital ("ROIC") as a key metric to evaluate investment decisions and measure our performance, and will also maintain a prudent capital structure and deploy cash flows in ways that can provide value, including direct cash returns to shareholders through a meaningful dividend.

Products

Technical Products. Our technical products business is a leading international producer of fiber-formed, coated and/or saturated specialized media that delivers high performance benefits to customers, such as filtration media for transportation, water and other filtration markets, and saturated and coated performance materials used for industrial backings, labels, digital image transfer, and a variety of other end markets. In general, our technical products are sold to other manufacturers as key components for their finished products. Many of our key market segments served, including filtration and specialty backings for tape and abrasives, are global in scope. JET-PRO®SofStretch™, KIMDURA®, PREVAIL™, NEENAH®, and GESSNER® are brands of our technical products business.

The following is a description of certain key products and markets:

Filtration media for transportation including induction air, fuel, oil, and cabin air applications. Transportation filtration media are sold to suppliers of automotive companies as original equipment on new cars and trucks as well as to the automotive aftermarket, which represents the large majority of sales.

Filtration media for water and other industrial end markets. Primary applications include reverse osmosis, catalytic conversion, nanofiltration, ultrafiltration, pervaporation and vapor permeation, as well as other applications for specialty markets.

Specialty backings including a) saturated and unsaturated crepe and flat paper tapes sold to manufacturers to produce finished pressure sensitive products for sale in automotive, transportation, manufacturing, building construction, and industrial general purpose applications, including sales in the consumer do-it-yourself retail channel and b) coated lightweight abrasive paper used in the automotive, construction, metal and woodworking industries for both dry and wet sanding applications.

Digital image transfer media is used to transfer digital images onto clothing, sportswear, and other materials. A fiber-based sheet undergoes various coatings to impart required performance.

Label and tag products made from both saturated base label stock and synthetic base label stock, with coatings applied to allow for high quality digital printing. The synthetic label stock is recognized as a high quality, UV (ultra-violet) stable product used for outdoor applications. Label and tag stock is sold to pressure sensitive coaters, who in turn sell the coated label and tag stock to the label printing community.

Other latex saturated and coated papers for use by a wide variety of manufacturers. Premask paper is used as a protective over wrap for products during the manufacturing process and for applying signs, labeling and other finished products. Medical packaging paper is a polymer impregnated base sheet that provides a breathable sterilization barrier that provides unique properties.

Digital transfer papers are used to digitally print images from paper to clothing, hats, coffee mugs, and other surfaces. Publishing and security papers are used to produce book covers, stationery, fancy packaging and passports. Other specialty products include clean room papers, durable printing papers, release papers and furniture backers.

Fine Paper and Packaging. Our fine paper and packaging business manufactures and sells world-class branded premium writing, text, cover and specialty papers and envelopes used in high-end commercial printing services, corporate identity packages, and advertising collateral. In addition, we produce premium packaging and wide format applications. Often these papers are characterized by distinctive coating, finishing, colors, and textures.

Commercial printing papers include premium writing, text and cover papers, and envelopes. Uses include advertising collateral, stationery, corporate identity packages and brochures, pocket folders, annual reports, advertising inserts, direct mail, business cards, scrapbooks, and a variety of other uses where colors, texture, coating, unique finishes or heavier weight papers are desired. Our market leading brands in this category include CLASSIC®, CLASSIC CREST®, ESSE®, ENVIRONMENT®, CAPITOL BOND®, ROYAL SUNDANCE®, SOUTHWORTH®, and TOUCHE® trademarks. Our fine paper and packaging business has an exclusive agreement to manufacture, market and distribute Crane & Co.'s CRANE'S CREST®, CRANE'S BOND®, and CRANE'S LETTRA®, branded fine papers in the commercial print category. Our fine paper and packaging business has an exclusive agreement to market and distribute Gruppo Cordenons SpA's SO...SILK®, PLIKE® and STARDREAM® branded fine papers in the U.S. and Canada. The fine paper and packaging business also sells private watermarked paper and other specialty writing, text, and cover papers. Additionally, the fine paper and packaging business provides leading solutions in the wide format arena, led by its Neenah Wide Format® and CONVERD® brands.

Premium packaging products are used for wine, spirits and beer labels, folding cartons, box wrap, bags, hang tags, and stored value cards servicing high-end retail, cosmetics, spirits, and electronics end-use markets. Our market leading brands in these categories include NEENAH® Folding Board, ESTATE LABEL®, Neenah® Box Wrap, PELLAQ®, KIVAR®, SKIVERTEX®, ILLUSIO®, and SENZO®.

Bright papers are used in applications such as direct mail, advertising inserts, scrapbooks and marketing collateral. Our brands in this category include ASTROBRIGHTS® and CREATIVE COLLECTION™. Additionally, business papers for professionals and small businesses are sold under our Southworth® brand through major retailers.

The fine paper and packaging business also produces and sells other specialty papers such as translucent papers, art papers, papers for optical scanning and other specialized applications.

Markets and Customers

Technical Products. The technical products business sells its products globally to other manufacturers who convert our product for sale into product categories generally used as base materials in the following applications: filtration, component backing materials for manufactured products such as tape and abrasives, and other specialized product uses such as graphics and identification.

Several products (filtration media, abrasives, specialty tapes, labels) are used in markets that are directly affected by economic business cycles. Other market segments such as image transfer papers used in small/home office and consumer applications are relatively stable. Most products are performance-based and require qualification by customers; however, certain categories may also be subject to price competition and the substitution of lower cost substrates in some less demanding applications.

The technical products business relies on a team of direct sales representatives and customer service representatives to market and sell a large majority of its sales volume directly to customers and converters.

The technical products business has more than 500 customers worldwide. The distribution of sales in 2018 was approximately 42 percent in Europe, 37 percent in North America, and 21 percent in Latin America and Asia. Customers typically convert and transform base papers and film into finished rolls and sheets by adding adhesives, coatings, and finishes. These transformed products are then sold to end-users.

5

Sales to the technical products business' three largest customers combined represented approximately 13 percent of total sales for the segment in 2018. Although a complete loss of any of these customers would cause a temporary decline in the business' sales volume, the decline could be partially offset by expanding sales to existing customers, and further offset over a several month period with the addition of new customers.

Fine Paper and Packaging. Our fine paper and packaging business is a leading supplier of premium writing, text and cover papers, bright papers and specialty papers in North America. These products are used in high-end collateral material, business and legal professions, and corporate identity products. Our premium packaging business includes products such as food and beverage labels and high-end packaging materials such as folding cartons and box wrap used for luxury retail goods. Bright papers are generally used by consumers for flyers, direct mail and packaging.

The fine paper and packaging business sells its products in a variety of channels including authorized paper distributors, converters, retailers, and direct to end users. Sales to distributors account for approximately 60 percent of revenue in the fine paper and packaging business. During 2018, approximately 10 percent of the sales of our fine paper and packaging business were exported to markets outside the United States.

Sales to the two largest customers of the fine paper and packaging business represented approximately 16 percent and 12 percent, respectively, of its total sales in 2018. We practice limited sales distribution to improve our ability to control the marketing of our products. Although a complete loss of these customers would cause a temporary decline in the business's sales volume, the decline could be partially offset by expanding sales to existing customers, and further offset over a several month period with the addition of new customers.

Concentration. For the year ended December 31, 2018, sales to CNG and Veritiv represented approximately 7 percent and 5 percent, respectively, of consolidated net sales, and approximately 16 percent and 12 percent, respectively, of net sales of the fine paper and packaging business. For the year ended December 31, 2017, sales to Veritiv and CNG each represented approximately 7 percent of consolidated net sales and approximately 15 percent of net sales of the fine paper and packaging business. For the year ended December 31, 2016 sales to Veritiv represented approximately 8 percent of consolidated net sales and approximately 15 percent of net sales of the fine paper and packaging business.

The following graphs present further information about our businesses by geographic area and product line (dollars in millions):

Net Sales from Geographic Region
(in Millions)

2018 Net Sales by Product Line

Net sales are attributed to geographic areas based on the physical location of the selling entities and the physical location of the assets. See Note 15 of Notes to Consolidated Financial Statements, "Business Segment and Geographic Information", for information with respect to net sales, operating income and long-lived assets by business segment and location.

Raw Materials

Technical Products. Softwood pulp, specialty pulps and fibers, and latex are the primary raw materials consumed by our technical products business. The technical products business purchases softwood pulp, specialty pulp and fibers, and latex from various external suppliers. We believe that all of the raw materials for our technical products operations, except for certain specialty latex grades and specialty pulps, are readily available from several sources and that the loss of a single supplier would not cause a shutdown of our manufacturing operations.

Our technical products business acquires all of its specialized pulp requirements from two global suppliers and certain critical specialty latex grades from four suppliers. In general, these supply arrangements are covered by formal contracts, and represent multi-year business relationships that have historically been sufficient to meet our needs. We expect these relationships to continue to operate in a satisfactory manner in the future. In the event of an interruption of production at any one supplier, we believe that each of these suppliers individually would be able to satisfy our short-term requirements for specialized pulp or specialty latex. In the event of a long-term disruption in our supply of specialized pulp or specialty latex, we believe we would be able to substitute other pulp grades or other latex grades that would allow us to meet required product performance characteristics and incur only a limited disruption in our production. As a result, we do not believe that the substitution of such alternative pulp or latex grades would have a material effect on our operations.

Fine Paper and Packaging. Hardwood pulp is the primary raw material used to produce products of the fine paper and packaging business. Other significant raw material inputs in the production of fine paper and packaging products include softwood pulp, recycled fiber, cotton fiber, dyes and fillers. The fine paper and packaging business purchases all of its raw materials externally. We believe that all of the raw materials for our fine paper and packaging operations are readily available from several sources and that the loss of a single supplier would not cause a shutdown of our manufacturing operations.

Energy and Water

The equipment used to manufacture the products of our technical products and fine paper and packaging businesses uses significant amounts of energy, primarily electricity, natural gas, oil and coal. We generate substantially all of our electrical energy at the Munising mill and approximately 25 percent of the electrical energy at our mills in Appleton, Wisconsin and Bruckmühl, Germany. We also purchase electrical energy from external sources, including electricity generated from renewable sources.

Availability of energy is not expected to be a problem in the foreseeable future, but the purchase price of such energy can and likely will fluctuate significantly based on changes in demand and other factors.

An adequate supply of water is needed to manufacture our products. We believe that there is an adequate supply of water for this purpose at each of our manufacturing locations.

Working Capital

Technical Products. The technical products business maintains approximately 25 to 30 days of raw materials and supplies inventories to support its manufacturing operations and approximately 25 to 35 days of finished goods and semi-finished goods inventory to support customer orders for its products. Sales terms in the technical products business vary depending on the type of product sold and customer category. Extended credit terms of up to 120 days are offered to customers located in certain international markets. In general, sales are collected in approximately 45 to 55 days and supplier invoices are paid within 20 to 30 days.

Fine Paper and Packaging. The fine paper and packaging business maintains approximately 10 days of raw material inventories to support its paper making operations and about 55 days of finished goods inventory to fill customer orders.

8

Fine paper and packaging sales terms range between 20 and 30 days with discounts of 0 to 2 percent for customer payments, with discounts of 1 percent and 20-day terms used most often. Extended credit terms are offered to customers located in certain international markets. Supplier invoices are typically paid within 60 days.

Competition

Technical Products. Our technical products business competes in global markets with a number of large multinational competitors, including Ahlstrom-Munksjö, ArjoWiggins SAS and Hollingsworth & Vose Company. It also competes in some, but not all, of these segments with smaller regional manufacturers, such as Monadnock Paper Mills, Inc., Potsdam Specialty Paper, Inc. and Paper Line S.p.A. We believe the basis of competition in most of these segments are the ability to design and develop customized product features to meet customer performance specifications while maintaining quality, customer service and price. We believe our research and development program gives us an advantage in customizing base papers and developing advanced filter media to meet customer needs.

Fine Paper and Packaging. Our fine paper and packaging business is a leading supplier of premium printing and other high-end specialty papers in North America. Our fine paper and packaging business also competes in the premium segment of the uncoated free sheet market. The fine paper and packaging business competes directly in North America with Mohawk Fine Paper Inc. and other smaller companies. We believe the primary basis of competition for premium fine papers are brand recognition, product quality, customer service, product availability, promotional support and variety of colors and textures. Price also can be a factor particularly for lower quality printing needs that may compete with opaque and offset papers. We have and will continue to invest in advertising and other programs aimed at graphic designers, printers and corporate end-users in order to maintain a high level of brand awareness as well as communicate the advantages of using our products.

Our premium packaging business is focused on high-end packaging needs in end market verticals like beauty products, spirits and retail. Primary bases of competition are similarly brand recognition, product quality, customer service, product availability, and a variety of colors and textures. Premium packaging is primarily a North American business, but we also sell to customers in Asia and other markets outside the U.S. We believe the premium packaging market to be highly fragmented, with multiple competitors, many of which produce premium packaging products as a small subset of larger packaging operations.

Research and Development

Our technical products business maintains research and development laboratories in Feldkirchen-Westerham, Germany, Eerbeek, Netherlands, Munising, Michigan and Pittsfield, Massachusetts to support its strategy of developing new products and technologies, and to support growth in its existing product lines and other strategically important markets. We also have a research and development laboratory in West Springfield, Massachusetts that supports both our technical products and fine paper and packaging businesses. We have continually invested in product research and development with spending of $9.2 million in 2018, $8.9 million in 2017 and $9.4 million in 2016.

Intellectual Property

We own more than 100 granted patents and have multiple pending patent applications in the United States, Canada, Europe and certain other countries covering image transfer paper, abrasives and medical packaging, and other paper application and media processing. We also own more than 150 trademarks with registrations in approximately 80 countries. Our image transfer patents have contributed to establishing the technical products business as a leading global supplier of image transfer papers through our highly recognized JET-PRO®, 3G JET-OPAQUE®, TECHNIPRINT®, LASER-ONE OPAQUE® and IMAGE CLIP® brands. We add even more depth and strength to our technical products portfolio with the well-recognized dye-sublimation and digital decor JETCOL® and DIGICOL® brands, which are also supported by patented technology. The KIMDURA® and MUNISING LP® trademarks have also made a significant contribution to the marketing of synthetic film and clean room papers of our technical products business.

For more than 100 years, Neenah's fine paper and packaging business has built its market leading reputation on creating and manufacturing trademarked brands for premium writing, text, cover, digital, packaging, and specialty needs. The Neenah signature portfolio includes innovative, market leading brands such as CLASSIC® (including CLASSIC

CREST®, CLASSIC® Linen, CLASSIC® Laid, CLASSIC COLUMNS®, CLASSIC® Stipple, CLASSIC® Woodgrain, and CLASSIC® Techweave), ASTROBRIGHTS®, ENVIRONMENT®, The Design Collection, ROYAL SUNDANCE®, SOUTHWORTH® and many more. Our fine paper and packaging business provides unique and sustainable packaging papers, as well as custom solutions for premium packaging needs. With brands that stand for quality and consistency, such as NEENAH® Folding Board, NEENAH® Box Wrap, ESTATE LABEL®, and NEENAH IMAGEMAX® Paper Card, our fine paper and packaging business enables leading brands to deliver on their promise. The business also maintains a well-rounded and respected portfolio of brands that position Neenah as an industry leader, setting standards for quality, consistency, and dependability.

Neenah also boasts trademarks recognized in both the publishing and packaging markets, including SKIVERTEX® and KIVAR®.

Finally, the GESSNER® trademark has played an important role in the marketing of Neenah’s filtration product lines. With the expansion of our newest filtration facility in Appleton, Wisconsin, Neenah expects increased recognition of this brand domestically and internationally.

Backlog and Seasonality

Technical Products.   In general, sales and operating income for the technical products business have been relatively stronger in the first half of the year with reductions in the third quarter due to reduced customer converting schedules and in the fourth quarter due to a reduction in year-end inventory levels by our customers. The order flow for the technical products business is subject to seasonal peaks for several of its products, such as the larger volume grades of specialty tape, abrasives, premask, and label stock used primarily in the downstream finished goods manufacturing process. To assure timely shipments during these seasonal peaks, the technical products business provides certain customers with finished goods inventory on consignment. The technical products business periodically experiences periods where order entry levels surge, and order backlogs can increase substantially. Raw materials are purchased and manufacturing schedules are planned based on customer forecasts, current market conditions and individual orders for custom products. The order backlog in the technical products business on December 31, 2018 was approximately $119.1 million and represented approximately 21 percent of current year sales. The order backlog in the technical products business on December 31, 2017 was approximately $122.1 million and represented approximately 24 percent of prior year sales. We previously filled the order backlog from December 31, 2017 and expect to fill the order backlog from December 31, 2018 within the next year.

Fine Paper and Packaging.   The fine paper and packaging business has historically not experienced seasonality. Orders for stock products are typically shipped within two days, while custom orders are shipped within two to three weeks of receipt. Raw material purchases and manufacturing schedules are planned based on a combination of historical trends, customer forecasts and current market conditions. The order backlogs in the fine paper and packaging business on December 31, 2018 and 2017 were $17.6 million and $19.9 million, respectively, which represent approximately 14 -15 days of sales. The order backlogs from December 31, 2018 and 2017 were filled in the respective following years.

The operating results for each of our businesses are influenced by the timing of our annual maintenance downs, which are generally scheduled in the third quarter.

Employee and Labor Relations

As of December 31, 2018, we had approximately 2,641 regular full-time employees of whom 1,180 hourly and 580 salaried employees were located in the United States and 434 hourly and 447 salaried employees were located in Europe.

Approximately 50 percent of salaried employees and 80 percent of hourly employees of Neenah Germany are eligible to be represented by the Mining, Chemicals and Energy Trade Union, Industriegewerkschaft Bergbau, Chemie and Energie (the "IG BCE"). The IG BCE and a national trade association representing all employers in the industry signed a collective bargaining agreement covering union employees of Neenah Germany that expires at the end of February 2019. Under German law union membership is voluntary and does not need to be disclosed to the Company. As a result, the number of employees covered by the collective bargaining agreement with the IG BCE that expires in February 2019 cannot be determined. The negotiations for a new collective bargaining arrangement between the national trade association and IG BCE are currently in progress. Until a new agreement is signed, the current agreement will apply.

As of December 31, 2018, 113 employees are covered under collective bargaining agreements that expire in the next 12 months, not including the employees covered by the collective bargaining arrangement with the IG BCE. We believe we have satisfactory relations with our employees covered by collective bargaining agreements and do not expect the negotiation of new collective bargaining agreements to have a material effect on our results of operations or cash flows. See Note 12 of Notes to Consolidated Financial Statements, "Contingencies and Legal Matters — Employees and Labor Relations."

Environmental, Health and Safety Matters

Our operations are subject to federal, state and local laws, regulations and ordinances relating to various environmental, health and safety matters. We believe our operations are in compliance with, or we are taking actions designed to ensure compliance with, these laws, regulations and ordinances. However, the nature of our operations exposes us to the risk of claims concerning non-compliance with environmental, health and safety laws or standards, and there can be no assurance that material costs or liabilities will not be incurred in connection with those claims. Except for certain orders issued by environmental, health and safety regulatory agencies with which we believe we are in compliance and which we believe are immaterial to our financial condition, results of operations and liquidity, we are not currently named as a party in any judicial or administrative proceeding relating to environmental, health and safety matters.

Greenhouse gas ("GHG") emissions have increasingly become the subject of political and regulatory focus. Concern over potential climate change, including global warming, has led to legislative and regulatory initiatives directed at limiting GHG emissions. In addition to certain federal proposals in the United States to regulate GHG emissions, Germany, the United Kingdom (“U.K.”) and all the states in which we operate are currently considering GHG legislation or regulations, either individually and/or as part of regional initiatives. While not all are likely to become law it is reasonably possible that additional climate change related mandates will be forthcoming, and it is expected that they may adversely impact our costs by increasing energy costs and raw material prices, requiring operational or equipment modifications to reduce emissions and creating costs to comply with regulations or to mitigate the financial consequences of such compliance.

While we have incurred in the past several years, and will continue to incur, capital and operating expenditures in order to comply with environmental, health and safety laws, regulations and ordinances, we believe that our future cost of compliance with environmental, health and safety laws, regulations and ordinances, and our exposure to liability for environmental, health and safety claims will not have a material effect on our financial condition, results of operations or liquidity. However, future events, such as changes in existing laws and regulations, new legislation to limit GHG emissions or contamination of sites owned, operated or used for waste disposal by us (including currently unknown contamination and contamination caused by prior owners and operators of such sites or other waste generators) may give rise to additional costs which could have a material effect on our financial condition, results of operations or liquidity.

Our anticipated capital expenditures for environmental projects are not expected to have a material effect on our financial condition, results of operations or liquidity.

AVAILABLE INFORMATION

We are subject to the reporting requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934. As such, we file annual, quarterly and current reports, proxy statements and other information with the Securities and Exchange Commission ("SEC"). Our SEC filings are available to the public on the SEC's web site at www.sec.gov. You may also read and copy any document we file at the SEC's Public Reference Room located at 100 F Street, N.E., Washington, D.C. 20549. Please call the SEC at 1-800-SEC-0330 for further information on the Public Reference Room. Our common stock is traded on the New York Stock Exchange under the symbol NP. You may inspect the reports, proxy statements and other information concerning us at the offices of the New York Stock Exchange, 20 Broad Street, New York, New York 10005.

Our web site is www.neenah.com. Information on our web site is not incorporated by reference in this document. Our reports on Form 10-K, Form 10-Q and Form 8-K, as well as amendments to those reports, are and will be available free of charge on our web site as soon as reasonably practicable after we file or furnish such reports with the SEC. In addition, you may request a copy of any of these reports (excluding exhibits) at no cost upon written request to us at: Investor Relations, Neenah, Inc., 3460 Preston Ridge Road, Suite 600, Alpharetta, Georgia 30005.

Item 1A. Risk Factors

You should carefully consider each of the following risks and all of the other information contained in this Annual Report on Form 10-K. Some of the risks described below relate principally to our business and the industry in which we operate, while others relate principally to our indebtedness. The remaining risks relate principally to the securities markets generally and ownership of our common stock.

Our business, financial condition, results of operations or liquidity could be materially affected by any of these risks, and, as a result, the trading price of our common stock could decline. The risks described below are not the only ones we face. Additional risks not presently known to us or that we currently deem immaterial may also impair our business operations.

Risks Related to Our Business and Industry

Our business will suffer if we are unable to effectively respond to decreased demand for some of our products due to conditions in the global economy or secular pressures in some markets.

We have experienced and may experience in the future decreased demand for some of our products due to slowing or negative global economic growth, uncertainty in credit markets, declining consumer and business confidence, fluctuating commodity prices, increased unemployment and other challenges affecting the global economy. Parts of our fine paper and packaging business are subject to electronic substitution and, for fine paper products in particular, are in secular decline. Our efforts to offset these declines with new fine paper and packaging products and growth in existing fine paper and office products categories are not certain to fully offset the market declines, and an evaluation of the scope of our manufacturing footprint may be required in the future. In addition, our customers may experience deterioration of their businesses, cash flow shortages, and difficulty obtaining financing. If we are unable to implement business strategies to effectively respond to decreased demand for our products, our financial position, cash flows and results of operations would be adversely affected.

Changes in international geopolitical and macro economic conditions generally, and particularly in Germany, could adversely affect our business and results of operations. Fluctuations in the prices of and the demand for products could result in smaller gross profits and lower sales volumes.

Our operating results and business prospects could be adversely affected by risks related to the countries outside the United States in which we have manufacturing facilities or sell our products, including Germany, the Eurozone and the U.K. Downturns in economic activity, adverse tax consequences, fluctuations in the value of local currency versus the U.S. dollar, or any change in social, political, macro economic or labor conditions in any of these countries or regions could negatively affect our financial results.

Historically, economic and market shifts, and fluctuations in capacity have created cyclical changes in prices, sales volume and gross profits for products in the paper, packaging and related industries. The length and magnitude of industry cycles have varied over time and by product, but generally reflect changes in macroeconomic conditions and levels of industry capacity. The overall levels of demand for many of our products reflect fluctuations in levels of end-user demand, which depend in large part on general macroeconomic conditions in North America and regional economic conditions in our markets (including Europe, Asia, and Central and South America), as well as foreign currency exchange rates. The foregoing factors could materially and adversely impact our sales, cash flows, profitability and results of operations.

Additionally, changes to the United States' participation in, withdrawal out of, renegotiation of certain international trade agreements or other major trade related issues including the non-renewal of expiring favorable tariffs granted to developing countries, tariff quotas, and retaliatory tariffs (including, but not limited to, the current United States administration's tariffs on China and China's retaliatory tariffs on certain products from the United States), trade sanctions, new or onerous trade restrictions, embargoes and other stringent government controls could have a material adverse effect on our business, results of operations and financial condition.

The availability of and prices incurred for raw materials, energy and transportation services will significantly impact our business.

We purchase a substantial portion of the raw materials, energy, transportation and distribution services (primarily over-the-road freight) and other inputs necessary to produce our products on the open market, and, as a result, the price and other terms of those purchases are subject to change based on factors such as worldwide supply and demand and government regulation. We do not have significant influence over our raw material, energy or transportation prices and our ability to pass increases in those costs along to our customers through selling price increases may be challenged. We have experienced and may experience in the future significant raw material, energy, transportation and other input cost increases and we may not be able to fully recover these incremental costs through selling price increases or our pricing actions may lag behind due to contractual quarterly adjusters or annual renewals. In addition, we may not be able to recoup other cost increases we may experience, such as those resulting from inflation or from increases in wages or salaries, health care, pension or other employee benefits costs, insurance costs and other costs.

Our technical products business acquires certain of its specialized pulp requirements from two global suppliers and certain critical specialty latex grades from a limited number of suppliers. In general, these supply arrangements are covered by formal contracts and represent multi-year business relationships that have historically been sufficient to meet our needs. We expect these relationships to continue to operate in a satisfactory manner in the future. In the event of an interruption of production at any one supplier, we believe that each of these suppliers individually would be able to satisfy our short-term requirements for specialized pulp or specialty latex. In the event of a long-term disruption in our supply of specialized pulp or specialty latex, we believe we would be able to substitute other pulp grades or other latex grades that would allow us to meet required product performance characteristics and incur only a limited disruption in our production.

Our fine paper and packaging business acquires a substantial majority of the cotton fiber used in the production of certain branded bond paper products pursuant to annual agreements with two North American producers. The balance of our cotton fiber requirements are acquired through spot market purchases from a variety of other producers. We believe that a partial or total disruption in the production of cotton fibers at our two primary suppliers would increase our reliance on spot market purchases with a likely corresponding increase in cost.

Our operating results are likely to fluctuate.

Our operating results are subject to substantial quarterly and annual fluctuations due to a number of factors, many of which are beyond our control. Operating results could be adversely affected by general economic conditions causing a downturn in the market for paper products. Additional factors that could affect our results include, among others, changes in the market price of pulp, other raw materials and distribution/transportation services, the effects of competitive pricing pressures, production capacity levels and manufacturing yields, availability and cost of products from our suppliers, the gain or loss of significant customers, our ability to develop, introduce and market new products and technologies on a timely basis, changes in the mix of products produced and sold, seasonal customer demand, the relative strength of the Euro versus the U.S. dollar, increasing interest rates and environmental costs. The timing and effect of the foregoing factors are difficult to predict, and these or other factors could materially adversely affect our quarterly or annual operating results.

We face many competitors, several of which have greater financial and other resources.

We face competition in each of our business segments from companies that produce the same type of products that we produce or that produce lower priced alternative products that customers may use instead of our products. Some of our competitors have greater financial, sales and marketing, or research and development resources than we do. Greater financial resources and product development capabilities may also allow our competitors to respond more quickly to new opportunities or changes in customer requirements.

Our businesses are significantly dependent on sales to their largest customers.

Sales to the two largest customers of the fine paper and packaging business represented approximately 16 percent and 12 percent, respectively, of its total sales in 2018. Sales to the technical products business's three largest customers combined represented approximately 13 percent of total sales for the segment in 2018. A significant loss of business from any of our major fine paper and packaging or technical products customers may have a material adverse effect on our financial condition, results of operations and liquidity. We are also subject to credit risk associated with our customer concentration. If one or more of our largest fine paper and packaging or technical products customers were to become bankrupt, insolvent or otherwise were unable to pay for services provided, we may incur significant write-offs of accounts receivable.

We cannot be certain that our tax planning strategies will be effective and that our research and development tax credits will continue to be available to offset our tax liability.

As of December 31, 2018, we had $20.4 million of U.S. federal and $7.2 million of U.S. state research and development tax credits ("R&D Credits") which, if not used, will expire between 2029 and 2038 for the U.S. federal R&D Credits and between 2020 and 2033 for the state R&D Credits. The availability of state net operating losses (NOLs) and state tax

credits to offset taxable income and income tax, respectively, could also be substantially reduced if we were to undergo an "ownership change" as defined within certain state tax codes.
We are continuously undergoing examination by the Internal Revenue Service (the "IRS") as well as taxing authorities in various state and foreign jurisdictions in which we operate. The IRS and other taxing authorities routinely challenge certain deductions and credits reported on our income tax returns.
In accordance with Accounting Standards Codification ("ASC") Topic 740, Income Taxes ("ASC Topic 740"), as of December 31, 2018, we have recorded a liability of $10.1 million for uncertain tax positions where we believe it is "more likely than not" that the tax benefit reported on our income tax returns will not be realized. There can be no assurance, however, that the actual amount of unrealized deductions will not exceed the amounts we have recognized for uncertain tax positions.
We have significant obligations for pension and other postretirement benefits.
We have significant obligations for pension and other postretirement benefits which could require future funding beyond that which we have funded in the past or which we currently anticipate. At December 31, 2018, our projected pension benefit obligations were $430.7 million and exceeded the fair value of pension plan assets by $55.5 million. In 2018, we made total contributions to qualified pension trusts of $14.1 million. In addition, during 2018 we paid pension benefits for unfunded qualified, insurance backed and supplemental retirement plans of $4.1 million. At December 31, 2018, our projected other postretirement benefit obligations were $42.4 million. No assets have been set aside to satisfy our other postretirement benefit obligations. In 2018, we made payments for postretirement benefits other than pensions of $4.9 million. A material increase in funding requirements or benefit payments could have a material effect on our cash flows.
We may be required to pay material amounts under multiemployer pension plans.
Historically, we have contributed to the PACE Industry Union-Management Pension Fund (the “PIUMPF"), a multiemployer pension plan. The amount of our annual contributions to the PIUMPF was negotiated with the plan and the bargaining unit representing our employees covered by the plan. The PIUMPF was certified to be in "critical status" for the plan year beginning January 1, 2010, and continued to be in critical status for the plan year beginning January 1, 2018.

In June 2018, Neenah and representatives of the United Steelworkers Union (the "USW") of the Lowville mill reached an agreement to withdraw from the PIUMPF, effective July 1, 2018. As a result, in the second quarter of 2018, we recorded an estimated withdrawal liability of $1.0 million, which assumes payment of $0.1 million per year over 20 years, discounted at a credit adjusted risk-free rate of 5.7 percent. In addition to the withdrawal liability, PIUMPF may also demand payment from us of a pro-rata share of the fund's accumulated funding deficiency. Based on the latest information available from PIUMPF, we estimate the demand of accumulated funding deficiency to be in the range of $1.0 to $1.25 million. We reserve the right to challenge any such demand and believes this demand is unenforceable. As such, we have not recorded a liability for this amount as of December 31, 2018.
The outcome of legal actions and claims may adversely affect us.
We are involved in legal actions and claims arising in the ordinary course of our business. The outcome of such legal actions and claims against us cannot be predicted with certainty. Legal actions and claims against us could have a material effect on our financial condition, results of operations and liquidity.
Labor interruptions would adversely affect our business.
Except for our Pittsfield, Massachusetts, Brownville, New York and Quakertown, Pennsylvania manufacturing facilities which are non-union, substantially all of our hourly employees are unionized. In addition, some key customers and suppliers are also unionized. Strikes, lockouts or other work stoppages or slowdowns involving our unionized employees, and/or those of our suppliers and customers, could have a material effect on us.
If we are unable to continue to implement our business strategies, our financial condition and operating results could be materially affected.
Our future operating results will depend, in part, on the extent to which we can successfully implement our business strategies, including expansion and growth of our technical products (filtration and performance materials) and packaging businesses in a cost effective manner. Additionally, a slower than anticipated loading of our filtration asset in Appleton, Wisconsin due to the pace of certification of products by our customers could cause our results to be

lower than expected in the future. Our strategies are subject to significant business, economic and competitive uncertainties and contingencies, many of which are beyond our control. If we are unable to successfully implement our business strategies, our business, financial condition and operating results could be materially adversely affected.

We may not successfully integrate acquisitions and may be unable to achieve anticipated cost savings or other synergies.

The integration of the operations of acquired companies involves a number of risks and presents financial, managerial, legal and operational challenges. We may have difficulty, and may incur unanticipated expenses related to, integrating information systems, financial reporting activities, and integrating and retaining management and personnel from acquired companies. We may not be able to achieve anticipated cost savings or commercial or growth synergies, for a number of reasons, including contractual constraints and obligations or an inability to take advantage of expected commercial opportunities, increased operating efficiencies or commercial expansion of key technologies. Failure to successfully integrate acquired companies may have an adverse effect on our business, financial condition, results of operations, and cash flows.

We may not be able to adequately protect our intellectual property and proprietary rights, which could harm our future success and competitive position.

Our future success and competitive position also depends, in part, upon our ability to obtain and maintain protection for our intellectual property and proprietary rights. Failure to protect our existing intellectual property rights may result in the loss of valuable technologies or may require us to license other companies' intellectual property rights. It is possible that any of our patents may be invalidated, rendered unenforceable, circumvented, challenged or licensed to others or any of our pending or future patent applications may not be issued within the scope of the claims sought by us, if at all. Further, others may develop technologies that are similar or superior to our technologies, duplicate our technologies or design around our patents, and steps taken by us to protect our technologies may not prevent misappropriation of such technologies.

Future dividends on our common stock may be restricted or eliminated.

Dividends are declared at the discretion of our Board of Directors, and future dividends will depend on our future earnings, cash flow, financial requirements and other factors. Our ability to pay cash dividends on our common stock is limited under the terms of both our bank credit agreement and the indenture for our $175 million of senior notes due November 2021 (the "2021 Senior Notes"). As of December 31, 2018, under the most restrictive terms of our bank credit agreement and the indenture for the 2021 Senior Notes, our ability to pay cash dividends on our common stock is limited, as described under "Risks Relating to Our Indebtedness." There can be no assurance that we will continue to pay dividends in the future.

We may be required to record a charge to our earnings if our goodwill or intangible assets become impaired.

As of December 31, 2018, we had goodwill of $84.0 million and other intangible assets of $70.7 million. Goodwill and other intangible assets are recorded at fair value on the date of acquisition. In accordance with applicable accounting guidance, we review goodwill and other indefinite-lived intangible assets at least annually for impairment, and long-lived intangible assets when facts and circumstances warrant an impairment review. Impairment may result from, among other things, deterioration in performance, adverse market conditions, acceleration of the secular decline in fine paper and office products or a lack of success in our efforts to offset these declines with new fine paper and packaging products, which could lead to a reduction in the size of our manufacturing footprint, adverse changes in applicable laws or regulations, and a variety of other factors. The amount of any non-cash impairment would be recognized immediately through our consolidated statement of operations. Any future goodwill or other intangible asset impairment could have a material adverse effect on our results of operations and financial position.

If we have a catastrophic loss or unforeseen or recurring operational problems at any of our facilities, we could suffer significant lost production and/or cost increases.

Our technical products and fine paper and packaging businesses may suffer catastrophic loss due to fire, flood, terrorism, mechanical failure, or other natural or man-made events. If any of our facilities were to experience a catastrophic loss, it could disrupt our operations, delay production, delay or reduce shipments, reduce revenue, and result in significant expenses to repair or replace the facility. These expenses and losses may not be adequately covered by property or business interruption insurance. Even if covered by insurance, our inability to deliver our products to customers, even on a short-term basis, may cause us to lose market share on a more permanent basis.

15

Fluctuations in currency exchange rates could adversely affect our results.
Exchange rate fluctuations for the Euro do not have a material effect on the operations or cash flows of our German and Dutch technical products businesses. Our German and Dutch technical products business incurs most of its costs and sells most of its production in Europe and, therefore, its operations and cash flows are not materially affected by changes in the exchange rate of the Euro relative to the U.S. dollar. Changes in the Euro exchange rate relative to the U.S. dollar will, however, have an effect on our balance sheet and reported results of operations. See Item 7A, "Quantitative and Qualitative Disclosures About Market Risk — Foreign Currency Risk."
In addition, because we transact business in other foreign countries, some of our revenues and expenses are denominated in a currency other than the local currency of our operations. As a result, changes in exchange rates between the currency in which the transaction is denominated and the local currency of our operations into which the transaction is being recorded can impact the amount of local currency recorded for such transaction. This can result in more or less local currency revenues or costs related to such transaction, and thus have an effect on our reported sales and income before income taxes.
Our activities are subject to extensive government regulation, which could increase our costs, cause us to incur liabilities and adversely affect the manufacturing and marketing of our products.
Our operations are subject to federal, state and local laws, regulations and ordinances in the United States, Germany, the Netherlands and elsewhere in the world relating to various environmental, health and safety matters. The nature of our operations requires that we invest capital and incur operating costs to comply with those laws, regulations and ordinances and exposes us to the risk of claims concerning non-compliance with environmental, health and safety laws or standards. We cannot assure that significant additional expenditures will not be required to maintain compliance with, or satisfy potential claims arising from, such laws, regulations and ordinances. Future events, such as changes in existing laws and regulations or contamination of sites owned, operated or used for waste disposal by us (including currently unknown contamination and contamination caused by prior owners and operators of such sites or other waste generators) may give rise to additional costs that could require significantly higher capital expenditures and operating costs, which would reduce the funds otherwise available for operations, capital expenditures, future business opportunities or other purposes.

Additionally, in the U.S., portions of the Moving Ahead for Progress in the 21st Century Act ("MAP-21", primarily, the electronic logging device (ELD) rules under MAP-21) have created a decrease in levels of capacity in the over-the-road freight sector which could have an adverse impact on our business. The current operating environment in the over-the-road freight and transportation sector resulting from fluctuating fuel costs, industry-specific regulations (such as hours-of-service and ELD rules), a shortage of qualified drivers, and other economic factors are causing a tightening of capacity and an increase in prices charged to shippers, such as us, in the over-the-road transportation and distribution sector generally, and in our carrier networks specifically, which could have an adverse impact on our business.
We are subject to risks associated with possible climate change legislation and various cost and manufacturing issues associated with such legislation.
GHG emissions have increasingly become the subject of political and regulatory focus. Concern over potential climate change, including global warming, has led to legislative and regulatory initiatives directed at limiting GHG emissions. In addition to certain federal proposals in the United States to regulate GHG emissions, Germany, the U.K. and all the states in which we operate are currently considering GHG legislation or regulations, either individually and/or as part of regional initiatives. While not all are likely to become law it is reasonably possible that additional climate change related mandates will be forthcoming, and it is expected that they may adversely impact our costs by increasing energy costs and raw material prices, requiring operational or equipment modifications to reduce emissions and creating costs to comply with regulations or to mitigate the financial consequences of compliance.
Any failure to comply with applicable environmental laws, regulations or permit requirements may result in civil or criminal fines or penalties or enforcement actions. These may include regulatory or judicial orders enjoining or curtailing operations or requiring corrective measures, installing pollution control equipment or remedial actions, any of which could involve significant expenditures. Future development of such laws and regulations may require capital expenditures to ensure compliance. We may discover currently unknown environmental problems or conditions in

relation to our past or present operations, or we may face unforeseen environmental liabilities in the future. These conditions and liabilities may require site remediation or other costs to maintain compliance or correct violations of environmental laws and regulations; or result in governmental or private claims for damage to person, property or the environment, any of which could have a material adverse effect on our financial condition and results of operations.

We are subject to cybersecurity risks related to breaches of security pertaining to sensitive company, customer, employee and vendor information as well as breaches in the technology that manages operations and other business processes.

We use information technologies to securely manage operations and various business functions. We rely on various technologies to process, store and report on our business and interact with customers, vendors and employees. The secure processing, maintenance and transmission of this information is critical to our operations and business strategy. Despite our security design and controls, and those of our third party providers, our information technology and infrastructure may be vulnerable to cyber attacks by hackers or breaches due to employee error, malfeasance or other disruptions. Any such breach could result in operational disruptions or the misappropriation of sensitive data that could subject us to civil and criminal penalties, litigation or have a negative impact on our reputation. There can be no assurance that such disruptions or misappropriations and the resulting repercussions will not negatively impact our cash flows and materially affect our results of operations or financial condition. The U.S. Congress is considering cybersecurity legislation that, if enacted, could impose additional obligations on us and could expand our potential liability in the event of a cyber-security incident.

Additionally, we collect, process, store, use and transmit personal data for use in our business, most of which relates to our global employees. Personal data is increasingly subject to legal and regulatory protections around the world, which vary widely in approach and which possibly conflict with one another. As discussed above, in recent years, U.S. legislators and regulatory agencies, such as the Federal Trade Commission, as well as U.S. states, have increased their focus on protecting personal data by law and regulation, and have increased enforcement actions for violations of privacy and data protection requirements. The European Commission also recently approved and adopted the General Data Protection Regulation ("GDPR") in the European Union, a new data protection law, which became effective in May 2018. These data protection laws and regulations are intended to protect the privacy and security of personal data, including credit card information that is collected, processed and transmitted in or from the relevant jurisdiction. Implementation of and compliance with these laws and regulations may be more costly or take longer than we anticipate, or could otherwise adversely affect our business operations, which could negatively impact our financial position or cash flows. Additionally, media coverage of data breaches has escalated, in part because of the increased number of enforcement actions, investigations and lawsuits. As this focus and attention on privacy and data protection increases, we also risk exposure to potential liabilities and costs resulting from the compliance with, or any failure to comply with applicable legal requirements, conflicts among these legal requirements or differences in approaches to privacy and security of data. Our business could be materially adversely affected by our inability, or the inability of our vendors who receive personal data from us, to comply with legal obligations regarding the use of personal data, new data handling requirements that conflict with or negatively impact our business practices.

Our business may suffer if we do not retain our senior management.

We depend on our senior management. The loss of services of members of our senior management team could adversely affect our business until suitable replacements can be found. There may be a limited number of persons with the requisite skills to serve in these positions and we may be unable to locate or employ qualified personnel on acceptable terms. In addition, our future success requires us to continue to attract and retain competent personnel.

Risks Relating to Our Indebtedness

We may not be able to fund our future capital requirements internally or obtain third-party financing.

We may be required or choose to obtain additional debt or equity financing to meet our future working capital requirements, as well as to fund capital expenditures and acquisitions. To the extent we must obtain financing from external sources to fund our capital requirements, we cannot guarantee financing will be available on favorable terms, if at all. As of December 31, 2018, we have required debt payments of $2.3 million during the year ending December 31, 2019.

We may not be able to generate sufficient cash flow to meet our debt obligations, including the 2021 Senior Notes.

Our ability to make scheduled payments or to refinance our obligations with respect to the 2021 Senior Notes, our other debt and our other liabilities will depend on our financial and operating performance, which, in turn, is subject to prevailing economic conditions and to certain financial, business and other factors beyond our control. If our cash flow and capital resources are insufficient to fund our debt obligations and other liabilities, we could face substantial liquidity problems and may be forced to reduce or delay scheduled expansions and capital expenditures, sell material assets or operations, obtain additional capital or restructure our debt. We cannot assure that our operating performance, cash flow and capital resources will be sufficient to repay our debt in the future. In the event that we are required to dispose of material assets or operations or restructure our debt to meet our debt and other obligations, we can make no assurances as to the terms of any such transaction or how quickly any such transaction could be completed.

If we cannot make scheduled payments on our debt, we will be in default and, as a result:

- our debt holders could declare all outstanding principal and interest to be due and payable;
- our senior secured lenders could terminate their commitments and commence foreclosure proceedings against our assets; and
- we could be forced into bankruptcy or liquidation.

If our operating performance declines in the future or we breach our covenants under our revolving credit facility, we may need to obtain waivers from the lenders under our revolving credit facility to avoid being in default. We may not be able to obtain these waivers. If this occurs, we would be in default under our revolving credit facility.

We have significant indebtedness which subjects us to restrictive covenants relating to the operation of our business. As of December 31, 2018, we had $175 million of 2021 Senior Notes, $57.9 million in revolving credit borrowings and $9.7 million of project financing outstanding. In addition, availability under our bank credit agreement was approximately $154 million. Our leverage could have important consequences. For example, it could:

- make it difficult for us to satisfy our financial obligations, including making scheduled principal and interest payments on the 2021 Senior Notes and our other indebtedness;
- place us at a disadvantage to our competitors;
- require us to dedicate a substantial portion of our cash flow from operations to service payments on our indebtedness, thereby reducing funds available for other purposes;
- increase our vulnerability to a downturn in general economic conditions or the industry in which we operate;
- limit our ability to obtain additional financing for working capital, capital expenditures, acquisitions and general corporate and other purposes; and
- limit our ability to plan for and react to changes in our business and the industry in which we operate.

The terms of our indebtedness, including our bank credit agreement and the indenture governing the 2021 Senior Notes, contain covenants restricting our ability to, among other things, incur certain additional debt, incur or create certain liens, make specified restricted payments, pay dividends, authorize or issue capital stock, enter into transactions with our affiliates, consolidate or merge with or acquire another business, sell certain of our assets or liquidate, dissolve or wind-up our Company. Under the terms of our Fourth Amended and Restated Credit Agreement, we are permitted to pay cash dividends on or repurchase shares of our common stock, and to make voluntary prepayments or redemptions of certain indebtedness (including our 2021 Senior Notes), without limitation, as long as the sum of the aggregate revolving credit availability under our Fourth Amended and Restated Credit Agreement as then in effect, plus (subject to certain limitations) any excess of our aggregate borrowing base over our aggregate revolving credit facility commitment, or our “specified excess availability” (on a pro forma basis after giving effect to such dividend, repurchase or voluntary prepayment/redemption), equals or exceeds the greater of (i) $25 million and (ii) 12.5 percent of the maximum aggregate commitments under our revolving credit facility as then in effect (currently $28 million). If the specified excess availability is below that amount, then such cash dividends are limited to no more than $45 million in any 12 consecutive months, such share repurchases are limited to no more than $25 million in any fiscal year, and voluntary prepayments or redemptions of such indebtedness are prohibited. Under the most restrictive terms of the 2021 Senior Notes, we are permitted to pay cash dividends of up to $25 million in a calendar year, but not permitted to repurchase shares of our common stock. However, as long as the net leverage ratio (net debt/EBITDA) under the 2021 Senior Notes is below 2.5x, we can pay dividends or repurchase shares without limitation. Refer to Item 7, "Management's Discussion and Analysis of Financial Condition and Results of Operations — Liquidity and Capital Resources" for the current limitations on our ability to pay dividends on or repurchase shares of our common stock.

In addition, if the specified excess availability under our revolving credit facility is less than the greater of (i) $25 million and (ii) 12.5 percent of the maximum aggregate commitments under our revolving credit facilities as then in effect, we will be subject to increased reporting obligations and controls until such time as availability is more than the greater of (a) $35 million and (b) 17.5 percent of the maximum aggregate commitments under our revolving credit facility as then in

18

effect for at least 60 consecutive days and no default or event of default has occurred or is continuing during such 60-day period.

If specified excess availability under our revolving credit facilities is less than the greater of (i) $20 million and (ii) 10 percent of the maximum aggregate commitments under our revolving credit facilities as then in effect, we are required to comply with a fixed charge coverage ratio (as defined in our bank credit agreement) of not less than 1.1 to 1.0 for the preceding four-quarter period, tested as of the end of each quarter. Such compliance, once required, would no longer be necessary once (x) specified excess availability under our revolving credit facilities exceeds the greater of (i) 17.5 percent of the aggregate commitment for our revolving credit facility as then in effect and (ii) $35 million for 60 consecutive days and (y) no default or event of default has occurred and is continuing during such 60-day period. As of December 31, 2018, specified excess availability under our revolving credit facility exceeded the minimum required amount, and we are not required to comply with such fixed charge coverage ratio.

Our revolving credit facility accrues interest at variable rates. As of December 31, 2018, we had $57.9 million of revolving credit borrowings outstanding which mature on December 10, 2023. We may reduce our exposure to rising interest rates by entering into interest rate hedging arrangements, although those arrangements may result in us incurring higher interest expenses than we would incur without the arrangements. If interest rates increase in the absence of such arrangements, we will need to dedicate more of our cash flow from operations to make payments on our debt. For more information on our liquidity, see Item 7A, "Management's Discussion and Analysis of Financial Condition and Results of Operations — Liquidity and Capital Resources."

Our failure to comply with the covenants contained in our revolving credit facility or the indenture governing the 2021 Senior Notes could result in an event of default that could cause acceleration of our indebtedness.

Our failure to comply with the covenants and other requirements contained in the indenture governing the 2021 Senior Notes, our revolving credit facility or our other debt instruments could cause an event of default under the relevant debt instrument. The occurrence of an event of default could trigger a default under our other debt instruments, prohibit us from accessing additional borrowings and permit the holders of the defaulted debt to declare amounts outstanding with respect to that debt to be immediately due and payable. Our assets or cash flows may not be sufficient to fully repay borrowings under our outstanding debt instruments, and we may be unable to refinance or restructure the payments on indebtedness on favorable terms, or at all.

Despite our indebtedness levels, we and our subsidiaries may be able to incur substantially more indebtedness, which may increase the risks created by our substantial indebtedness.

Because the terms of our bank credit agreement and the indenture governing the 2021 Senior Notes do not fully prohibit us or our subsidiaries from incurring additional indebtedness, we and our subsidiaries may be able to incur substantial additional indebtedness in the future, some of which may be secured. If we or any of our subsidiaries incur additional indebtedness, the related risks that we and they face may intensify.

Our bank credit agreement is secured by a majority of our assets.

Our bank credit agreement is secured by a majority of our assets. Availability under our bank credit agreement will fluctuate over time depending on the value of our inventory, receivables and various capital assets. An extended work stoppage or decline in sales volumes would result in a decrease in the value of the assets securing the bank credit agreement. A reduction in availability under the bank credit agreement could have a material effect on our liquidity.

Changes in credit ratings issued by nationally recognized statistical rating organizations could adversely affect our cost of financing and have an adverse effect on the market price of our securities.

Our debt currently has a non-investment grade rating, and there can be no assurance that any rating assigned by the rating agencies will remain for any given period of time or that a rating will not be lowered or withdrawn entirely by a rating agency if, in that rating agency's judgment, future circumstances relating to the basis of the rating, such as adverse changes, so warrant. A lowering or withdrawal of the ratings assigned to our debt securities by rating agencies may increase our future borrowing costs and reduce our access to capital, which could have a material adverse impact on our financial condition and results of operations.

We depend on our subsidiaries to generate cash flow to meet our debt service obligations.

We conduct a substantial portion of our business through our subsidiaries. Consequently, our cash flow and ability to service our debt obligations depend upon the earnings of our subsidiaries and the distribution of those earnings to us, or

19

upon loans, advances or other payments made by these entities to us. The ability of these entities to pay dividends or make other payments or advances to us will be subject to applicable laws and contractual restrictions contained in the instruments governing their debt, including our revolving credit facility and the indenture governing the 2021 Senior Notes. These limitations are also subject to important exceptions and qualifications.

The ability of our subsidiaries to generate sufficient cash flow from operations to allow us to make scheduled payments on our debt will depend upon their future financial performance, which will be affected by a range of economic, competitive and business factors, many of which are outside of our control as well as their ability to repatriate cash to us. If our subsidiaries do not generate sufficient cash flow from operations to help us satisfy our debt obligations, including payments on the 2021 Senior Notes, or if they are unable to distribute sufficient cash flow to us, we may have to undertake alternative financing plans, such as refinancing or restructuring our debt, selling assets, reducing or delaying capital expenditures or seeking to raise additional capital. Refinancing may not be possible, and any assets may not be saleable, or, if sold, we may not realize sufficient amounts from those sales. Additional financing may not be available on acceptable terms, if at all, or we may be prohibited from incurring it, if available, under the terms of our various debt instruments then in effect. Our inability to generate sufficient cash flow to satisfy our debt obligations or to refinance our obligations on commercially reasonable terms would have an adverse effect on our business, financial condition and results of operations.

FORWARD-LOOKING STATEMENTS

Certain statements in this Annual Report on Form 10-K may constitute "forward-looking" statements as defined in Section 27A of the Securities Act of 1933 (the "Securities Act"), Section 21E of the Securities Exchange Act of 1934 (the "Exchange Act"), the Private Securities Litigation Reform Act of 1995 (the "PSLRA"), or in releases made by the SEC, all as may be amended from time to time. Statements contained in this Annual Report on Form 10-K that are not historical facts may be forward-looking statements within the meaning of the PSLRA. Any such forward-looking statements reflect our beliefs and assumptions and are based on information currently available to us. Forward-looking statements are only predictions and involve known and unknown risks, uncertainties and other factors that may cause our actual results, performance or achievements, or industry results, to be materially different from any future results, performance or achievements expressed or implied by such forward-looking statements. These cautionary statements are being made pursuant to the Securities Act, the Exchange Act and the PSLRA with the intention of obtaining the benefits of the "safe harbor" provisions of such laws. We caution investors that any forward-looking statements we make are not guarantees or indicative of future performance. For additional information regarding factors that may cause our results of operations to differ materially from those presented herein, please see "Risk Factors" contained in this Annual Report on Form 10-K and as are detailed from time to time in other reports we file with the SEC.

You can identify forward-looking statements as those that are not historical in nature, particularly those that use terminology such as "may," "will," "should," "expect," "anticipate," "contemplate," "estimate," "believe," "plan," "project," "predict," "potential" or "continue," or the negative of these, or similar terms. In evaluating these forward-looking statements, you should consider the following factors, as well as others contained in our public filings from time to time, which may cause our actual results to differ materially from any forward-looking statement:

- changes in market demand for our products;
- the impact of competition, both domestic and international, changes in industry production capacity, including the construction of new mills or new machines, the closing of mills and incremental changes due to capital expenditures or productivity increases;
- the loss of current customers or the inability to obtain new customers;
- increases in commodity prices, (particularly for pulp, energy and latex);
- our ability to successfully implement price increases for our products;
- our ability to control costs, including transportation, and implement measures designed to enhance operating efficiencies;
- the availability of raw materials and energy;
- the enactment of adverse state, federal or foreign tax or other legislation or changes in government policy or regulation, including the recent Tax Act;
- the impact of increased trade protectionism and tariffs on our business, results of operations and financial condition;

- unanticipated expenditures related to the cost of compliance with environmental and other governmental regulations;
- fluctuations in (i) exchange rates (in particular changes in the U.S. dollar/Euro currency exchange rates) and (ii) interest rates;
- increases in the funding requirements for our pension and postretirement liabilities;
- our ability identify attractive acquisition targets and to successfully integrate acquired businesses into our existing operations;
- changes in asset valuations including write-downs of assets including property, plant and equipment; inventory, accounts receivable, deferred income tax assets or other assets for impairment or other reasons;
- loss of key personnel;
- strikes, labor stoppages and changes in our collective bargaining agreements and relations with our employees and unions;
- capital and credit market volatility and fluctuations in global equity and fixed-income markets;
- our existing and future indebtedness;
- our net operating losses may not be available to offset our tax liability and other tax planning strategies may not be effective;
- other risks that are detailed from time to time in reports we file with the SEC; and
- other factors described under "Risk Factors."

You are cautioned not to unduly rely on such forward-looking statements, which speak only as of the date made, when evaluating the information presented in this information statement. We undertake no duty to update these forward-looking statements after the date of this Form 10-K, even though our situation may change in the future.

Item 1B. Unresolved Staff Comments

None.

Item 2. Properties

Our principal executive offices are located in Alpharetta, Georgia, a suburb of Atlanta, Georgia. We have 10 manufacturing facilities in the United States that produce printing and writing, text, cover, durable saturated and coated substrates, premium packaging, filtration and other specialty papers for a variety of end uses. We have two manufacturing facilities in Germany that produce transportation and other filter media, and durable and saturated substrates. We have one manufacturing facility in the Netherlands that produces digital transfer media and other technical products. We have one manufacturing facility in the U.K. that produces durable printing and specialty paper. We believe that each of these facilities is adequately maintained and is suitable for conducting our operations and business. We manage machine operating schedules at our manufacturing locations to fulfill customer orders in a timely manner and control inventory levels.

As of December 31, 2018, following are the locations of our principal facilities and operating equipment and the products produced at each location:

Location	Equipment/Resources	Owned or Leased	Products
Fine Paper and Packaging Segment			
Neenah Mill Neenah, Wisconsin	Two paper machines; paper finishing equipment	Owned	Printing and writing, text, cover, packaging and other specialty papers
Whiting Mill Whiting, Wisconsin	Four paper machines; paper finishing equipment	Owned	Printing and writing, text, cover, packaging and other specialty papers
Converting Center Neenah, Wisconsin	Paper finishing equipment	Owned	Printing and writing, text, cover, packaging and other specialty papers
Great Barrington Mill Great Barrington, Massachusetts	Paper finishing equipment	Owned; leased facility	Laminated specialty papers and toll converting services
Technical Products Segment			
Munising Mill Munising, Michigan	Two paper machines; two off line saturators; two off line coaters; specialty finishing equipment	Owned	Tapes, abrasives, premask, medical packaging and other durable, saturated and coated substrates
Pittsfield Mill Pittsfield, Massachusetts	Three paper machines; paper finishing equipment	Owned	Reverse osmosis filtration and glass applications
Bruckmühl Mill Bruckmühl, Germany	One paper machine; two saturator/coaters; finishing equipment	Owned	Masking tape backings and abrasive backings
Weidach Mill Feldkirchen-Westerham, Germany	Two paper machines; three saturators; one laminator; three meltblown machines; specialty finishing equipment	Owned	Transportation filtration and other industrial filter media
Red Bridge Mill Bolton, England	Saturating, coating, and finishing equipment	Owned	Durable printing, specialty paper, and coated substrates
Eerbeek Mill Eerbeek, Netherlands	Two paper machines; paper finishing equipment	Owned	Digital dye sublimation and image transfer printing paper
Shared Facilities			
Appleton Mill Appleton, Wisconsin	Two paper machines; saturating equipment; paper finishing equipment	Owned	Transportation filtration, printing and writing, text, cover, packaging, and other specialty papers
Brattleboro Mill Brattleboro, Vermont	One paper machine; coating and paper finishing equipment	Owned	Printing, packaging, specialty paper board, and coated substrates
Brownville Mill Brownville, New York	One paper machine; one off-line coater	Owned	Durable printing, packaging, and specialty paper
Lowville Mill Lowville, New York	Saturating, coating, embossing and finishing equipment	Owned	Durable printing, packaging, and specialty paper

Quakertown Mill Quakertown, Pennsylvania	Saturating, coating, embossing and finishing equipment	Owned	Durable printing, packaging, and specialty paper

See Note 14 of Notes to Consolidated Financial Statements, "Sale of Brattleboro Mill and Impairment Loss", where noted the Brattleboro mill was sold on December 31, 2018. See Note 7 of Notes to Consolidated Financial Statements, "Debt", for a description of the material encumbrances attached to the properties described in the table above.

As of December 31, 2018, following are the locations of our owned and leased office and laboratory space and the functions performed at each location.

Administrative Location	Office/Other Space	Function
Alpharetta, Georgia	Leased Office Space	Corporate Headquarters, Administration and Design Center
Neenah and Appleton, Wisconsin	Owned Office Space	Administration
Munising, Michigan	Owned Office and Laboratory Space	Administration and Research and Development for our technical products businesses
Pittsfield, Massachusetts	Owned Office and Laboratory Space	Administration and Research and Development for our technical products businesses
West Springfield, Massachusetts	Owned Office and Laboratory Space	Administration and Research and Development for our technical products and fine paper and packaging businesses
Feldkirchen-Westerham, Germany	Owned Office and Laboratory Space	Administration and Research and Development for our technical product businesses
Eerbeek, Netherlands	Owned Office and Laboratory Space	Administration and Research and Development for our technical product businesses

Capacity Utilization

Paper machines in our manufacturing facilities generally operate on a combination of three-shift five- or seven-day schedules to meet demand. We are not constrained by input factors and the maximum operating capacity of our manufacturing facilities is calculated based on operating days to account for variations in mix and different units of measure between assets. Due to required maintenance downtime and contract holidays, the maximum number of operating days is defined as 350 days per year. We generally expect to utilize approximately 80 to 90 percent of our maximum operating capacity. The following table presents our percentage utilization of maximum operating capacity by segment:

	Year Ended December 31,		
	2018	2017	2016
Technical Products	74%	78%	87%
Fine Paper and Packaging	78%	81%	80%

Item 3. Legal Proceedings

Litigation

We are involved in certain legal actions and claims arising in the ordinary course of business. While the outcome of these legal actions and claims cannot be predicted with certainty, it is the opinion of management that the outcome of any such claim which is pending or threatened, either individually or on a combined basis, will not have a material effect on our consolidated financial condition, results of operations or liquidity.

Income Taxes

We periodically undergo examination by the IRS as well as various state and foreign jurisdictions. The IRS and other taxing authorities routinely challenge certain deductions and credits we report on our income tax returns.

Item 4. Mine Safety Disclosures

Not applicable.

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

Neenah common stock is listed on the New York Stock Exchange and is traded under the ticker symbol NP.
For the year ended December 31, 2018 we paid quarterly cash dividends of $0.41 per common share or $27.8 million annually. For the year ended December 31, 2017, we paid quarterly cash dividends of $0.37 per common share or $25.1 million annually. In November 2018, our Board of Directors approved an 10 percent increase in the quarterly dividend rate on our common stock to $0.45 per share, scheduled to be paid in March 2019.
Dividends are declared at the discretion of the Board of Directors, and future dividends will depend on our future earnings, cash flow, financial requirements and other factors. Our ability to pay cash dividends on our common stock is limited under the terms of both our bank credit agreement and our 2021 Senior Notes. Under the most restrictive terms of the Fourth Amended and Restated Credit Agreement, we are permitted to pay cash dividends on or repurchase shares of our common stock up to the amount available under the Fourth Amended and Restated Credit Agreement, as long as the availability under the Fourth Amended and Restated Credit Agreement exceeds $28 million. If the availability is below $28 million, we are restricted from paying dividends or repurchasing shares. As of December 31, 2018, our availability exceeded $28 million, so this restriction did not apply. Under the most restrictive terms of the 2021 Senior Notes, we are permitted to pay cash dividends of up to $25 million in a calendar year, but not permitted to repurchase shares of our common stock. However, as long as the net leverage ratio (net debt/EBITDA) under the 2021 Senior Notes is below 2.5x, we can pay dividends or repurchase shares without limitation. In the event the net leverage ratio exceeds 2.5x, we may still pay dividends in excess of $25 million or repurchase shares by utilizing "restricted payment baskets" as defined in the indenture for the 2021 Senior Notes. As of December 31, 2018, since our leverage ratio was less than 2.5x, none of these covenants were restrictive to our ability to pay dividends on or repurchase shares of our common stock.
As of February 20, 2019, Neenah had approximately 1,171 holders of record of its common stock. The closing price of Neenah's common stock on February 20, 2019 was $70.74.

Purchases of Equity Securities:
The following table sets forth certain information regarding purchases of our common stock during the fourth quarter of 2018.

Period	Total Number of Shares Purchased (a)	Average Price Paid Per Share (c)	Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs (b)	Approximate Dollar Value of Shares that May Yet Be Purchased Under Publicly Announced Plans or Programs
October 2018	88	$ —	—	$ 18,702,438
November 2018	24,634	$ 68.90	24,634	$ 17,005,155
December 2018	46,277	$ 64.97	20,621	$ 15,665,409

(a) Transactions include the purchase of vested restricted shares from employees to satisfy minimum tax withholding requirements upon vesting of stock-based awards. See Note 9 of Notes to Consolidated Financial Statements, "Stock Compensation Plans."

(b) In November 2017, our Board of Directors authorized a program for the purchase of up to $25 million of outstanding common stock which was in effect till December 31, 2018. In November 2018, our Board of Directors authorized a program for the purchase of up to $25 million of outstanding common stock effective January 1, 2019. The program does not require the Company to purchase any specific number of shares and may be suspended or discontinued at any time.

(c) Average price paid per share for shares purchased as part of our program.

Equity Compensation Plan Information

The following table summarizes information about outstanding options (in this report, unless the context requires otherwise, references to "options" are intended to include stock appreciation rights) and restricted stock units and shares reserved for future issuance under our existing equity compensation plans as of December 31, 2018.

Plan Category	(a) Number of securities to be issued upon exercise of outstanding options, warrants, and rights		(b) Weighted-average exercise price of outstanding options, warrants, and rights (1)	(c) Number of securities remaining available for future issuance under equity compensation plans (excluding securities reflected in column (a))
Equity compensation plans approved by security holders	151,677	(2)(3)	$ 67.46	1,260,000
Equity compensation plans not approved by security holders	—		—	—
Total	151,677		$ 67.46	1,260,000

(1) The weighted-average exercise price of outstanding options, warrants and rights does not take into account restricted stock units since they do not have an exercise price.

(2) Includes (i) 50,996 shares issuable upon the exercise of outstanding options and stock appreciation rights ("SARs") for which the exercise price of outstanding options and SARs exceeds closing price of our common stock of $58.92, (ii) 47,221 shares issuable following the vesting and conversion of outstanding performance share unit awards, and (iii) 53,460 shares issuable upon the vesting and conversion of outstanding restricted stock units, all as of December 31, 2018. As of December 31, 2018, we had an aggregate of 451,081 stock options and SARs outstanding. The weighted average exercise price of the stock options and SARs was $67.46 per share and the remaining contractual life of such awards was 7.0 years.

(3) Includes 42,559 shares that would be issued upon the assumed exercise of 169,693 SARs at the 58.92 per share closing price of our common stock on December 31, 2018.

Item 6. Selected Financial Data

The following table sets forth our selected historical financial and other data. You should read the information set forth below in conjunction with "Management's Discussion and Analysis of Financial Condition and Results of Operations" and our historical consolidated financial statements and the notes to those consolidated financial statements included elsewhere in this Annual Report. The statement of operations data for the years ended December 31, 2018, 2017 and 2016 and the balance sheet data as of December 31, 2018 and 2017 set forth below are derived from our audited historical consolidated financial statements included elsewhere in this Annual Report on Form 10-K. The balance sheet data as of December 31, 2016, 2015 and 2014 and the statement of operations data for the years ended December 31, 2015 and 2014 set forth below are derived from our historical consolidated financial statements not included in this Annual Report on Form 10-K.

On October 31, 2015, we sold the Lahnstein Mill for net cash proceeds of approximately $5.4 million. For the year ended December 31, 2018, discontinued operations reported on the consolidated statements of operations reflect an additional loss on sale of $0.8 million arising from the final adjustment to the transaction price on the sale of the

Lahnstein Mill in 2015. For the years ended December 31, 2016 and December 31, 2015, discontinued operations reported on the consolidated statements of operations reflect the results of operations and the loss on sale of the Lahnstein Mill. The consolidated statement of operations for the year ended December 31, 2014 has been restated to report results of the Lahnstein Mill as discontinued operations. As of December 31, 2015 and 2014, the assets and liabilities of the Lahnstein Mill are classified as assets held for sale on the consolidated balance sheet. See Note 13 of Notes to Consolidated Financial Statements, "Discontinued Operations."

	Year Ended December 31,				
	2018	2017	2016	2015	2014
Consolidated Statement of Operations Data					
Net sales	$1,034.9	$979.9	$941.5	$887.7	$839.7
Cost of products sold (f)	851.5	779.7	724.2	690.9	666.8
Gross profit (f)	183.4	200.2	217.3	196.8	172.9
Selling, general and administrative expenses	95.9	95.3	90.0	85.3	76.3
Impairment loss (a)	31.1	—	—	—	—
Acquisition/integration/restructuring and costs (b)	2.1	1.3	7.0	6.5	2.3
Pension plan settlement charge (c)	1.8	0.6	0.8	—	3.5
Acquisition-related adjustments (d)	(3.9)	—	—	—	—
Insurance settlement (e)	(0.4)	(3.2)	—	—	—
Loss on early extinguishment of debt (g)	—	—	—	—	0.2
Other expense — net	2.7	1.9	5.4	3.6	4.0
Operating income	54.1	104.3	114.1	101.4	86.6
Interest expense — net	13.0	12.6	11.1	11.5	11.1
Income from continuing operations before income taxes	41.1	91.7	103.0	89.9	75.5
Provision for income taxes (k)	3.9	11.4	29.6	29.4	7.5
Income from continuing operations	37.2	80.3	73.4	60.5	68.0
(Loss) income from discontinued operations, net of taxes (h)	(0.8)	—	(0.4)	(9.4)	0.7
Net income	$36.4	$80.3	$73.0	$51.1	$68.7
Earnings from continuing operations per basic share	$2.20	$4.74	$4.33	$3.58	$4.05
Earnings from continuing operations per diluted share	$2.17	$4.68	$4.26	$3.53	$3.99
Cash dividends per common share	$1.64	$1.48	$1.32	$1.20	$1.02
Other Financial Data					
Net cash flow provided by (used for):					
Operating activities (k)	$92.7	$100.0	$115.8	$111.2	$94.5
Capital expenditures (j)	(38.1)	(42.7)	(68.5)	(48.1)	(27.9)
Other investing activities (i)	3.8	(52.3)	0.3	(112.0)	(77.0)
Financing activities (g)(k)	(52.6)	(3.8)	(48.4)	(18.8)	10.2

	December 31,				
	2018	2017	2016	2015	2014
	(Dollars in millions)				
Consolidated Balance Sheet Data					
Cash and cash equivalents	$9.9	$ 4.5	$ 3.1	$ 4.2	$72.6
Working capital, less cash and cash equivalents	147.2	156.1	125.2	136.3	129.5
Total assets (k)	861.2	904.4	765.6	751.4	724.5
Long-term debt (g)(k)	236.8	254.1	219.7	228.2	226.8
Total liabilities (k)	471.0	504.5	427.3	439.8	435.8
Total stockholders' equity	390.2	399.9	338.3	311.6	288.7

(a) For the year ended December 31, 2018, we recorded a non-cash impairment loss of $31.1 million related to our Brattleboro mill and associated research and office facilities. See Note 14 of Notes to Consolidated Financial Statements, "Sale of Brattleboro Mill and Impairment Loss."

(b) For the year ended December 31, 2018, we incurred $0.5 million of integration costs related to the Coldenhove Acquisition and $1.6 million of restructuring and other one-time costs. For the year ended December 31, 2017, we incurred of $1.3 million of acquisition costs related to the Coldenhove Acquisition. For the year ended December 31, 2016, we incurred $4.1 million of integration costs related to the FiberMark Acquisition, $2.7 million of non-capitalized trial costs related to the U.S. filtration project, and $0.2 million of other one-time costs. For the year ended December 31, 2015, we incurred $5.3 million of integration costs related to the FiberMark Acquisition and $1.2 million of restructuring costs. For the year ended December 31, 2014, we incurred $1.0 million of integration costs related to the acquisition of the Crane technical materials business and $1.3 million of restructuring costs.

(c) For the years ended December 31, 2018, 2017, 2016 and 2014, we recorded $0.8 million, $0.6 million, $0.8 million and $3.5 million of pension settlement charges, respectively. For the year ended December 31, 2018, we also recorded an estimated withdrawal liability of $1.0 million related to our withdrawal from PIUMPF. See Note 8 of Notes to Consolidated Financial Statements, "Pension and Other Postretirement Benefits."

(d) For the year ended December 31, 2018, we recorded $3.9 million of acquisition-related adjustments arising from the operating results of Coldenhove subsequent to the acquisition. See Note 4 of Notes to Consolidated Financial Statements, "Acquisitions."

(e) For the years ended December 31, 2018 and 2017, we recorded a representations and warranties insurance settlement of $0.4 million and $3.2 million, respectively, related to the FiberMark acquisition.

(f) In March 2017, the FASB issued ASU 2017-07, Improving the Presentation of Net Periodic Pension Cost and Net Periodic Postretirement Benefit Cost (Topic 715). The Company adopted this ASU as of January 1, 2018. As a result of the adoption, the Company reclassified $1.5 million and $1.2 million of net cost for the year ended December 31, 2017, $2.8 million and $2.2 million of net cost for the year ended December 31, 2016, $1.4 million and $1.2 million of net cost for the year ended December 31, 2015, and $2.1 million and $1.7 million for the year ended December 31, 2014, respectively, of other components of net benefit cost from "Cost of products sold" and "Selling, general and administrative expenses" to "Other expense - net" on the consolidated statements of operations. There was no other material impact on its consolidated financial statements due to the adoption.

(g) For the year ended December 31, 2014, we amended and restated our existing bank credit facility and recognized a pre-tax loss of $0.2 million for the write-off of unamortized debt issuance costs.

(h) The following table presents the results of discontinued operations:

	Year Ended December 31,				
	2018 (1)	2017	2016 (1)	2015 (2)	2014
Discontinued operations: (3)					
Income from operations	$—	$ —	$—	$0.2	$0.9
Loss on sale of the Lahnstein Mill (3)	(0.8)	—	(0.6)	(13.6)	—
(Loss) income before income taxes	(0.8)	—	(0.6)	(13.4)	0.9
(Benefit) provision for income taxes	—	—	(0.2)	(4.0)	0.2
(Loss) income from discontinued operations, net of taxes	$(0.8)	$ —	$(0.4)	$(9.4)	$0.7

---

(1) The losses in 2018 and 2016 were due to the final adjustments of the sales price of the Lahnstein Mill.

(2) The loss on sale of the Lahnstein Mill includes a net curtailment gain related to the divestiture of the pension plan of $15.8 million, including a $5.5 million write-off of deferred actuarial losses in 2015.

(3) On October 31, 2015, we sold the Lahnstein Mill. For the years ended December 31, 2018, 2016, 2015 and 2014, the results of operations and the loss on sale of the Lahnstein Mill are reported as discontinued operations in the

Consolidated Statements of Operations Data.

(i) In December 2018, we sold the Brattleboro mill for $5 million. In November 2017, we purchased all of the outstanding equity of Coldenhove for approximately $45 million. In August 2015, we purchased all of the outstanding equity of FiberMark for approximately $118 million. In July 2014, we purchased all of the outstanding equity of Crane for approximately $72 million.

(j) During the year ended December 31, 2016, we completed our U.S. Filtration project.

(k) At December 31, 2017, financial statements reflect the adjustments arising from the U.S. tax reform signed on December 22, 2017. See Note 6 of Notes to Consolidated Financial Statements, "Income Taxes." At December 31, 2016, we adopted ASC Topic No. 2016-09 and applied the guidance retroactively to January 1, 2016. At December 31, 2015, we adopted ASC Topic No. 2015-03 and ASC Topic No. 2015-17 and elected to apply the guidance retroactively to all periods presented.

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

The following discussion and analysis presents the factors that had a material effect on our results of operations during the years ended December 31, 2018, 2017 and 2016. Also discussed is our financial position as of the end of those years. You should read this discussion in conjunction with our consolidated financial statements and the notes to those consolidated financial statements included elsewhere in this Annual Report on Form 10-K. This Management's Discussion and Analysis of Financial Condition and Results of Operations contains forward-looking statements. See "Forward-Looking Statements" for a discussion of the uncertainties, risks and assumptions associated with these statements.

Introduction

This Management's Discussion and Analysis of Financial Condition is intended to provide investors with an understanding of the historical performance of our business, its financial condition and its prospects. We will discuss and provide our analysis of the following:

- Overview of Business;
- Business Segments;
- Results of Operations and Related Information;
- Liquidity and Capital Resources;
- Adoption of New Accounting Pronouncements; and
- Critical Accounting Policies and Use of Estimates.

Overview of Business

We are a leading producer of technical products and premium fine papers and packaging. We have two primary operations: our technical products business and our fine paper and packaging business.

Our mission is to create value by improving the image and performance of everything we touch. We expect to create value by growing in specialized niche markets that value performance or image and where we have competitive advantages. In managing our businesses, we believe that achieving and maintaining a leadership position in our markets, responding effectively to customer needs and competitive challenges, employing capital optimally, controlling costs and managing risks are important to long-term success. Changes in input costs and general economic conditions can also impact our results. In this discussion and analysis, we will refer to these factors.

- Competitive Environment — Our past results have been and our future prospects will be significantly affected by the competitive environment in which we operate. While our businesses are oriented to premium performance and quality, they may also face competitive pressures from lower value products and in most of our markets our businesses compete directly with well-known competitors, some of which are larger and more diversified.
- Economic Conditions and Input Costs — The markets for all of our products are affected to a significant degree by economic conditions, including rapid changes in freight and input costs, particularly for pulp, latex and natural gas that may not be recovered immediately through pricing or other actions. Our results are also affected by fluctuations in exchange rates, particularly for the Euro.

Business Segments

Our reportable operating segments consist of Technical Products, Fine Paper and Packaging, and Other.

Our technical products business is a leading international producer of transportation, water and other filter media and durable, saturated and coated substrates for a variety of end markets. We focus on categories where we believe we are, or can be, a market leader. These categories include filtration media for transportation, water and other uses, backings for specialty tapes and abrasives, performance labels, digital image transfer, and other specialty markets. Our dedicated technical products manufacturing facilities are located in Weidach and Bruckmühl, Germany, Eerbeek, Netherlands, Bolton, England, Munising, Michigan, and Pittsfield, Massachusetts. In addition, certain technical products are manufactured along with fine paper and packaging products in shared facilities located in Brattleboro, Vermont, Brownville and Lowville, New York, and Quakertown, Pennsylvania. In 2017, a filtration machine (which was converted from a fine paper machine) began production in Appleton, Wisconsin, a site also shared with the fine paper and packaging business.

Our fine paper and packaging business is a leading supplier of premium printing, packaging, and other high-end specialty papers in North America. Our products include some of the most recognized and preferred brands in North America, where we enjoy leading market positions in many of our product categories. We sell our products primarily to authorized paper distributors, as well as through converters, major national retailers and specialty businesses. Our primary fine paper and packaging manufacturing facilities are located in Neenah and Whiting, Wisconsin. Certain products are manufactured in shared facilities located in Brattleboro, Vermont, Brownville and Lowville, New York, and Quakertown, Pennsylvania, as well as a site shared with technical products in 2017 in Appleton, Wisconsin. In August 2017, we purchased a laminating asset in Great Barrington, Massachusetts to support continued growth in our premium packaging business.

Our other segment includes certain product lines composed of papers sold to converters for end uses such as covering materials for datebooks, diaries, yearbooks and traditional photo albums. These products are primarily manufactured at our shared facilities located in Brownville, New York and Brattleboro, Vermont. See Note 14 of Notes to Consolidated Financial Statements, "Sale of Brattleboro Mill and Impairment Loss" where a realignment of this segment in 2019 is described.

Results of Operations and Related Information

In this section, we discuss and analyze our net sales, income before interest and income taxes (which we refer to as "operating income") and other information relevant to an understanding of our results of operations.

Executive Summary

For the year ended December 31, 2018, consolidated net sales of $1,034.9 million increased $55.0 million, or 6 percent, from $979.9 million in 2017. The increase resulted from higher Technical Products volumes (including volumes from the November 2017 Coldenhove Acquisition), increased selling prices in both segments, and a higher value mix and favorable currency effects in Technical Products. These items more than offset lower Fine Paper and Packaging volumes.

Consolidated operating income of $54.1 million for the year ended December 31, 2018 decreased $50.2 million, or 48 percent, from the prior year. The decrease was mainly due to adjustments of $30.7 million consisting of a $31.1 million impairment loss related to the sale of the Brattleboro mill and associated research and office facilities, $1.8 million of pension settlement charges and $2.1 million of restructuring, integration and other costs, partly offset by $3.9 million for a favorable escrow receivable and liability adjustment related to the Coldenhove Acquisition and an insurance-related settlement of $0.4 million. Excluding these net unfavorable items in 2018 and $1.3 million of net favorable adjustments in 2017, adjusted operating income decreased $18.2 million (18%), primarily due to higher manufacturing costs, including more than $35 million of higher input and distribution costs that were only partly offset by increased selling prices in both segments, and by volume growth, a higher value mix and favorable currency effects in Technical Products. See later in this section for further information regarding the presentation of operating income, as adjusted.

Cash provided by operating activities of $92.7 million for the year ended December 31, 2018 was $7.3 million lower than cash provided by operating activities of $100.0 million in the prior year. The decrease in cash flows resulted from a $19.1 million reduction in operating income (excluding the non-cash $31.1 million impairment loss of the Brattleboro mill) and higher contributions to pension plans to take advantage of the effects of the 2017 Tax Act, partly offset by a $10.8 million lower investment in working capital in 2018.

Capital expenditures for the year ended December 31, 2018 were $38.1 million compared to $42.7 million in the prior year, which were within our target range of approximately 3 to 5 percent of net sales.

31

Analysis of Net Sales — Years Ended December 31, 2018, 2017 and 2016

The following table presents net sales by segment and net sales expressed as a percentage of total net sales:

	Year Ended December 31,					
Net sales	2018	2018	2017	2017	2016	2016
Technical Products	$567.6	55 %	$502.1	51 %	$466.4	50 %
Fine Paper and Packaging	445.8	43 %	455.3	47 %	452.1	48 %
Other	21.5	2 %	22.5	2 %	23.0	2 %
Consolidated	$1,034.9	100%	$979.9	100%	$941.5	100%

Commentary:

Year 2018 versus 2017

	For the Year Ended December 31,		Change in Net Sales Compared to the Prior Year			
				Change Due To		
	2018	2017	Total Change	Volume	Net Price	Currency
Technical Products	$567.6	$502.1	$65.5	$35.8	$18.7	$ 11.0
Fine Paper and Packaging	445.8	455.3	(9.5)	(21.6)	12.1	—
Other	21.5	22.5	(1.0)	(1.8)	0.8	—
Consolidated	$1,034.9	$979.9	$55.0	$12.4	$31.6	$ 11.0

Consolidated net sales for the year ended December 31, 2018 were $55.0 million (6%) higher than the prior year. The increase resulted from higher Technical Products volumes (including volumes from the November 2017 Coldenhove Acquisition), increased selling prices in both segments, and a higher value mix and favorable currency effects in Technical Products. These items more than offset lower Fine Paper and Packaging volumes.

- Net sales in our technical products business increased $65.5 million (13%) from the prior year due to acquired volume, organic increases in filtration sales, as well as a higher-priced mix and favorable currency effects due to a stronger euro in the first half of the year.
- Net sales in our fine paper and packaging business decreased $9.5 million (2%) from the prior year. Volume declines in commercial print products were partly offset by higher selling prices and volume increases in premium packaging.
- Net sales in our other business segment decreased $1.0 million from the prior year period due to lower volumes.

Year 2017 versus 2016

	For the Years Ended December 31,		Change in Net Sales Compared to the Prior Year			
				Change Due To		
	2017	2016	Total Change	Volume	Net Price	Currency
Technical Products	$502.1	$466.4	$35.7	$22.9	$10.0	$ 2.8
Fine Paper and Packaging	455.3	452.1	3.2	7.2	(4.0)	—
Other	22.5	23.0	(0.5)	—	(0.5)	—
Consolidated	$979.9	$941.5	$38.4	$30.1	$5.5	$ 2.8

Consolidated net sales for the year ended December 31, 2017 were $38.4 million (4%) higher than the prior year. The increase resulted from growth in both Technical Products and Fine Paper and Packaging, due to higher volumes, higher priced mix and favorable currency effects in Technical Products, and due to growth in premium packaging and higher selling prices, partly offset by lower priced mix in Fine Paper and Packaging. Excluding the Coldenhove Acquisition, consolidated net sales increased 3 percent from the prior year.

- Net sales in our technical products business increased $35.7 million (8%) from the prior year due to higher volumes in backings, label and other filtration, as well as higher priced mix, acquired volume and favorable currency effects. Excluding the Coldenhove Acquisition, technical product sales increased $28.2 million (6%). Net selling prices increased due to a higher-priced mix of products sold and increased selling prices.
- Net sales in our fine paper and packaging business increased $3.2 million (1%) from the prior year due to higher volumes largely offset by lower priced mix. Increased volumes reflected double digit growth in premium packaging as well as more direct sales of non-branded products, which more than offset the decline in commercial print.
- Net sales in our other business segment decreased $0.5 million from the prior year period due to lower priced mix.

33

Analysis of Operating Income — Years Ended December 31, 2018, 2017 and 2016

The following table sets forth line items from our consolidated statements of operations as a percentage of net sales for the periods indicated and is intended to provide a perspective of trends in our historical results:

	Year Ended December 31,		
	2018	2017	2016
Net sales	100.0 %	100.0 %	100.0 %
Cost of products sold	82.3 %	79.6 %	76.9 %
Gross profit	17.7 %	20.4 %	23.1 %
Selling, general and administrative expenses	9.3 %	9.7 %	9.6 %
Impairment loss	3.0 %	— %	— %
Restructuring, integration and other costs	0.2 %	0.1 %	0.7 %
Pension and SERP plan settlement charges	0.2 %	0.1 %	0.1 %
Acquisition-related adjustments	(0.4)%	— %	— %
Insurance settlement	— %	(0.3)%	— %
Other expense — net	0.2 %	0.2 %	0.6 %
Operating income	5.2 %	10.6 %	12.1 %
Interest expense — net	1.2 %	1.2 %	1.2 %
Income from continuing operations before income taxes	4.0 %	9.4 %	10.9 %
Provision for income taxes	0.4 %	1.2 %	3.1 %
Income from continuing operations	3.6 %	8.2 %	7.8 %

Commentary:

Year 2018 versus 2017

	For the Years Ended December 31,		Change in Operating Income (Loss) Compared to the Prior Year					
				Change Due To				
	2018	2017	Total Change	Volume	Net Price (a)	Input Costs (b)	Currency	Other (c)
Technical Products	$50.9	$55.3	$(4.4)	$9.0	$14.7	$(12.0)	$ 2.0	$(18.1)
Fine Paper and Packaging	29.4	69.5	(40.1)	(5.1)	8.5	(16.4)	—	(27.1)
Other	(6.4)	(0.4)	(6.0)	(0.4)	0.8	(0.7)	—	(5.7)
Unallocated corporate costs	(19.8)	(20.1)	0.3	—	—	—	—	0.3
Consolidated	$54.1	$104.3	$(50.2)	$3.5	$24.0	$(29.1)	$ 2.0	$(50.6)

(a) Includes price changes, net of changes in product mix.

(b) Includes price changes for raw materials and energy.

(c) Includes other manufacturing costs, over (under) absorption of fixed costs, distribution and selling, general and administrative ("SG&A") expenses. In addition, 2018 results include the Brattleboro mill impairment loss, pension settlement and other costs, acquisition-related adjustments, restructuring, integration, and other costs, and insurance-related settlement of $(1.4) million in Technical Products, $24.3 million in Fine Paper and Packaging, $5.9 million in Other, and $1.9 million in Unallocated corporate costs, which have been adjusted out from operating income. See the reconciliation table on page 37 for further detail.

Consolidated operating income of $54.1 million for the year ended December 31, 2018 decreased $50.2 million (48%) from the prior year. The decrease was mainly due to adjustments of $30.7 million consisting of a $31.1 million impairment loss related to the sale of the Brattleboro mill and associated research and office facilities, $1.8 million of pension settlement charges and $2.1 million of restructuring, integration and other costs, partly offset by $3.9 million for a favorable escrow receivable and liability adjustment related to the Coldenhove Acquisition and an insurance-related settlement of $0.4 million. Excluding these net unfavorable items in 2018 and $1.3 million of net favorable adjustments in 2017, adjusted operating income decreased $18.2 million (18%), primarily due to higher manufacturing costs, including more than $35 million of higher input and distribution costs that were only partly offset by increased selling prices in both segments, and by volume growth, a higher value mix and favorable currency effects in Technical Products. See later in this section for further information regarding the presentation of operating income, as adjusted.

- Operating income for our technical products business decreased $4.4 million (8%) from the prior year. Increases from higher sales volumes, a higher-value mix, increased selling prices and favorable currency effects were more than offset by higher manufacturing costs, reflecting both increased input costs and operational inefficiencies and spending mostly related to incremental downtime for maintenance work, U.S. Filtration's ramp-up, and to management of global inventories. Excluding the previously noted favorable adjustments of $1.4 million, adjusted operating income for the technical products business decreased $5.8 million (10%).
- Operating income for our fine paper and packaging business decreased $40.1 million (58%) from the prior year period The decrease was mainly due to adjustments of $24.3 million of impairment related to the sale of the Brattleboro mill and associated research and office facilities, pension settlement costs related to withdrawing from a multiemployer pension plan, restructuring costs, and an insurance settlement. In addition, operating income declined due to higher input and distribution costs, lower sales volumes and a lower-priced mix that were only partly offset by higher selling prices and reduced SG&A expenses. Excluding the costs of $24.3 million in 2018 and $2.9 million of insurance settlement proceeds in 2017, adjusted operating income for the fine paper and packaging business decreased $12.9 million (19%).
- Operating loss for our Other segment was $6.4 million compared with $0.4 million in the prior year period due to costs of $5.9 million for impairment, pension settlement costs, restructuring, and insurance-related settlement in 2018. These costs of $5.9 million compared to $0.3 million insurance settlement proceeds received in 2017.
- Unallocated corporate costs for the year ended December 31, 2018 were $19.8 million, or $0.3 million lower than the prior year. 2018 included adjusting items of $1.9 million for pension settlement, restructuring and other costs. These costs compared to $1.9 million of acquisition, restructuring, and pension settlement costs in 2017.

Year 2017 versus 2016

	For the Years Ended December 31,		Change in Operating Income (Loss) Compared to the Prior Year					
				Change Due To				
	2017	2016	Total Change	Volume	Net Price (a)	Input Costs (b)	Currency	Other (c)
Technical Products	$55.3	$65.6	$(10.3)	$5.9	$1.9	$(5.6)	$ 0.4	$(12.9)
Fine Paper and Packaging	69.5	70.7	(1.2)	2.9	(3.4)	(2.5)	—	1.8
Other	(0.4)	(1.1)	0.7	(0.3)	(0.5)	(0.1)	—	1.6
Unallocated corporate costs	(20.1)	(21.1)	1.0	—	—	—	—	1.0
Consolidated	$104.3	$114.1	$(9.8)	$8.5	$(2.0)	$(8.2)	$ 0.4	$(8.5)

(a) Includes price changes, net of changes in product mix.

(b) Includes price changes for raw materials and energy.

(c) Includes other manufacturing costs, over (under) absorption of fixed costs, distribution and SG&A expenses, start-up and other costs for the U.S. filtration business, insurance settlement, and acquisition/integration/restructuring costs.

Consolidated operating income of $104.3 million for the year ended December 31, 2017 decreased $9.8 million (9%) from the prior year. The decline was primarily due to higher costs from the U.S. transportation filtration business start-up phase. Operating income benefited in 2017 from higher volumes and selling prices, proceeds from a representations and warranties insurance settlement and improved operational efficiencies. In addition to filtration start-up costs, operating income decreased due to higher input and freight costs, a lower value mix in Fine Paper and Packaging, and acquisition costs related to the Coldenhove Acquisition. Excluding the insurance settlement of $3.2 million, acquisition and integration costs of $1.3 million, and pension and SERP settlement charges of $0.6 million in 2017, and aggregate charges of $7.8 million for integration and restructuring costs and pension settlement losses, operating income for the year ended December 31, 2018 decreased $18.9 million (16%) from the prior year. See later in this section for further information regarding the presentation of operating income, as adjusted.

- Operating income for our technical products business decreased $10.3 million (16%) from the prior year primarily due to higher costs from the U.S. transportation filtration start-up. Excluding the higher costs from the U.S. transportation filtration business, operating income for technical products increased due to higher sales volumes, manufacturing efficiencies, and lower integration and restructuring costs. These items were partially offset by unfavorable impacts from higher material and transportation costs. Results for the year ended December 31, 2016 include $1.4 million for integration/restructuring costs. Excluding integration/restructuring costs, operating income for the technical products business decreased $11.7 million (17%).
- Operating income for our fine paper and packaging business decreased $1.2 million (2%) from the prior year period primarily due to higher material and transportation costs and a lower priced product mix, that were partly offset by higher sales volume, increased selling prices, lower integration costs, and an insurance settlement of $2.9 million. Results for the year ended December 31, 2016 include $1.8 million for integration costs related to the FiberMark Acquisition. Excluding the insurance settlement and integration costs, operating income for the fine paper and packaging business decreased $5.9 million (8%).
- Unallocated corporate costs for the year ended December 31, 2017 were $20.1 million, or $1.0 million favorable to the prior year. Excluding charges of $1.3 million for acquisition and integration, and $0.6 million of pension and SERP settlement charges in 2017, and $0.8 million for a pension plan settlement charge and $2.7 million of restructuring costs in 2016, unallocated corporate expenses were $0.6 million unfavorable to the prior year.

The following table sets forth our operating income by segment, adjusted for the effects of certain costs, for the periods indicated:

	YTD 2018	2017	2016
Technical Products			
GAAP Operating Income	$50.9	$55.3	$65.6
Impairment loss	1.1	—	—
Restructuring and integration costs	1.0	—	1.4
Pension settlement and other costs	0.4	—	—
Acquisition-related adjustments	(3.9)	—	—
Adjusted operating income	$49.5	$55.3	$67.0
Fine Paper and Packaging			
GAAP Operating Income	$29.4	$69.5	$70.7
Impairment loss	24.4	—	—
Restructuring and integration costs	(0.2)	—	1.8
Pension settlement and other costs	0.4	—	—
Insurance Settlement	(0.3)	(2.9)	—
Adjusted operating income	$53.7	$66.6	$72.5
Other/Unallocated Corporate			
GAAP Operating Income	$(26.2)	$(20.5)	(22.2)
Impairment loss	5.6	—	—
Restructuring, integration and other costs	1.3	1.3	3.8
Pension settlement and other costs	1.0	0.6	0.8
Insurance Settlement	(0.1)	(0.3)	—
Adjusted operating income	$(18.4)	$(18.9)	$(17.6)
Consolidated			
GAAP Operating Income	$54.1	$104.3	$114.1
Impairment loss	31.1	—	—
Restructuring, integration and other costs	2.1	1.3	7.0
Pension settlement and other costs	1.8	0.6	0.8
Acquisition-related adjustments	(3.9)	—	—
Insurance Settlement	(0.4)	(3.2)	—
Adjusted operating income	$84.8	$103.0	$121.9

In accordance with generally accepted accounting principles in the United States ("GAAP"), consolidated operating income includes the pre-tax effects of an impairment loss, acquisition, integration and restructuring costs, pension plan settlement and other costs, acquisition-related adjustments, and an insurance settlement. We believe that by adjusting reported operating income to exclude the effects of these items, the resulting adjusted operating income is on a basis that reflects the results of our ongoing operations. We believe that providing adjusted operating results will help investors gain an additional perspective of underlying business trends and results. Adjusted operating income is not a recognized term under GAAP and should not be considered in isolation or as a substitute for operating income derived in accordance with GAAP. Other companies may use different methodologies for calculating their non-GAAP financial measures and, accordingly, our non-GAAP financial measures may not be comparable to their measures.

Additional Statement of Operations Commentary:

- SG&A expense as a percentage of net sales for the years ended December 31, 2018, 2017 and 2016 was 9.3 percent, 9.7 percent and 9.6 percent, respectively. SG&A expense for 2018 included the impact of lower accruals for incentive compensation. SG&A expense of $95.3 million for the year ended December 31, 2017 was $5.3 million higher than 2016 due to increased SG&A associated with U.S. transportation filtration business, incremental costs related to the Coldenhove Acquisition and higher spending due to increased sales in Technical Products.
- For the years ended December 31, 2018, 2017 and 2016, we incurred $13.0 million, $12.7 million and $11.2 million of interest expense, respectively. The increase in interest expense in 2017 from 2016 was primarily due to capitalization of interest of $0.8 million for the U.S. filtration project in 2016, higher interest rates in 2017 and higher borrowing related to the Coldenhove Acquisition.
- Income tax expense represented 9 percent, 12 percent and 29 percent of income from continuing operations before income taxes for the years ended December 31, 2018, 2017 and 2016, respectively. In general, our effective tax rate differs from the U.S. statutory tax rate primarily due to impacts of changes in the mix of earnings in taxing jurisdictions with differing statutory rates, the impact of R&D and other tax credits, changes in tax laws and changes in corporate structure as a result of business acquisitions and dispositions.
- For the year ended December 31, 2018, our effective income tax rate related to continuing operations was 9 percent, primarily due to the reduction in the U.S. federal tax rate from 35% to 21%. In addition, the effective tax rate was significantly reduced by the effects of the $31.1 million impairment loss of the Brattleboro mill and associated research and office facilities (see Note 14 of Notes to Consolidated Financial Statements, "Sale of Brattleboro Mill and Impairment Loss"), as similar sized reconciling items had a larger percentage impact on lower pre-tax book income. Throughout 2018, we completed our analysis of the Tax Act (see below) and recorded additional adjustments to reflect a measurement-period tax benefit of $0.9 million related to the effects of the statutory corporate tax rate reduction and a measurement-period tax expense of $0.8 million from U.S. federal and state taxes on accumulated earnings and profits ("E&P") of its foreign subsidiaries.
- For the year ended December 31, 2017, our effective income tax rate related to continuing operations was 12 percent. On December 22, 2017, the U.S. government enacted comprehensive tax legislation in the Tax Cuts and Jobs Act of 2017 (the "Tax Act"). The Tax Act significantly revised the U.S. corporate income tax by, among other things, reducing the statutory corporate tax rate from 35% to 21% effective January 1, 2018, eliminating certain deductions, imposing a mandatory one-time tax on accumulated earnings of foreign subsidiaries, introducing new tax regimes and changing how foreign earnings are subject to U.S. tax. The Tax Act also enhanced and extended through 2026 the option to claim accelerated depreciation deductions on qualified property. In conjunction with the tax law changes, the SEC in Staff Accounting Bulletin No. 118 ("SAB 118") provided for a measurement period of one year from the enactment date to finalize the accounting for effects of the Tax Act. As of December 31, 2017, we provisionally recorded an income tax benefit of $6.5 million related to the Tax Act. This amount was comprised of a $10.3 million tax benefit from the remeasurement of federal net deferred income tax liabilities resulting from the reduction in the U.S. statutory corporate tax rate to 21% from 35%, less $3.8 million of tax expense from the mandatory one-time tax on the previously untaxed accumulated E&P of our foreign subsidiaries.

In June 2017, as part of the annual strategic plan review, we reassessed our intentions regarding the indefinite reinvestment of undistributed earnings of our German operations and asserted our intent to indefinitely reinvest them. As a result, effective in the second quarter of 2017, we did not provide deferred income taxes on 2017 unremitted earnings of our German operations. In addition, in that quarter the deferred income tax liability of $4.1 million which was recorded in 2016 on unremitted German earnings was eliminated with a reduction to 2017 income tax expense. As noted above, the Tax Act included a mandatory one-time tax on previously untaxed accumulated E&P of its foreign subsidiaries, and as a result, previously unremitted E&P from all foreign countries were subject to this U.S. tax and a liability of $3.8 million was recorded thereon as of December 31, 2017.

- For the year ended December 31, 2016, our effective income tax rate related to continuing operations was 29 percent. The adoption of ASU 2016-09, Compensation—Stock Compensation (Topic 718): Improvements to Employee Share-Based Payment Accounting, allowed excess tax benefits from share-based payments to be shown as a reduction to income tax expense and reduced the rate for the year by 3 percent.

Liquidity and Capital Resources

	Year Ended December 31,		
	2018	2017	2016
Net cash flow provided by (used in):			
Operating activities	$92.7	$100.0	$115.8
Investing activities:			
Capital expenditures	(38.1)	(42.7)	(68.5)
Proceeds from sale of property, plant and equipment	5.0	—	—
Acquisitions	—	(43.1)	—
Asset acquisition	—	(8.0)	—
Other investing activities	(1.2)	(1.2)	0.3
Total	(34.3)	(95.0)	(68.2)
Financing activities	(52.6)	(3.8)	(48.4)
Effect of exchange rate changes on cash and cash equivalents	(0.4)	0.2	(0.3)
Net increase (decrease) in cash and cash equivalents	$5.4	$1.4	$(1.1)

Operating Cash Flow Commentary

- Cash provided by operating activities of $92.7 million for the year ended December 31, 2018 was $7.3 million less than cash provided by operating activities of $100.0 million in the prior year. The decrease in cash flows resulted from a $19.1 million reduction in operating income (excluding the non-cash $31.1 million impairment loss of the Brattleboro mill) and higher contributions to pension plans to take advantage of the effects of the 2017 Tax Act, partly offset by a $10.8 million lower investment in working capital in 2018.
- Cash provided by operating activities of $100.0 million for the year ended December 31, 2017 was $15.8 million less than cash provided by operating activities of $115.8 million in the prior year. The unfavorable comparison was primarily due to a $9.8 million decrease in operating income and an increase of $10.6 million in our investment in working capital for the year ended December 31, 2018. These items were offset by lower cash tax payments and lower contributions and benefit payments for post-retirement benefit obligations in 2017.

Investing Commentary:

- For the years ended December 31, 2018 and 2017, cash used by investing activities was $34.3 million and $95.0 million, respectively. For the year ended December 31, 2018, cash used by investing activities includes $5.0 million of proceeds for the sale of the Brattleboro mill. For the year ended December 31, 2017, cash used by investing activities includes $43.1 million for the Coldenhove Acquisition and $8.0 million for acquisition of a laminating asset.
- Capital expenditures for the year ended December 31, 2018 were $38.1 million compared to spending of $42.7 million in the prior year. Capital expenditures for the year ended December 31, 2017 were $