

Tredegar

CORPORATION



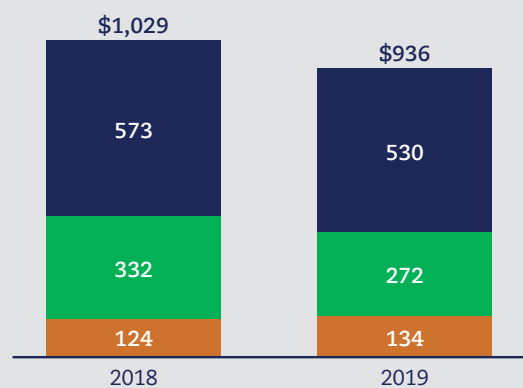
2019 Annual Report

Summary Financial Information

Years Ended December 31	2018	2019
(\$ Millions, except per-share data)		
Income and expense relating to ongoing operations:		
Total EBITDA for segments (a)	\$ 127.7	\$ 118.2
Pension expense	(10.4)	(9.6)
Corporate expenses	(16.3)	(20.8)
Consolidated EBITDA from ongoing operations ("Consolidated EBITDA") (b)	101.0	87.8
Depreciation & amortization	(33.2)	(33.0)
Stock option-based compensation costs	(1.2)	(2.9)
Interest income	0.4	0.3
Interest expense	(5.7)	(4.1)
Income taxes	(14.0)	(10.5)
Net income from ongoing operations (b)	47.3	37.6
After-tax effects of special items:		
Gains (losses) associated with plant shutdowns, assets impairments & restructuring	(3.8)	1.3
Unrealized gain on investment in kaléo	23.9	8.5
Cash dividend received from investment in kaléo	—	14.9
Accelerated trade name amortization (2019) and goodwill impairment charge (2018)	(38.2)	(7.8)
Other	(4.4)	(6.2)
Net income as reported under GAAP	\$ 24.8	\$ 48.3
Diluted earnings per share (EPS):		
Ongoing operations (b)	\$ 1.43	\$ 1.13
As reported under GAAP	\$ 0.75	\$ 1.45
	12/31/18	12/31/19
Fair value of investment in kaléo, net of tax	\$ 69.5	\$ 78.0
Net Debt (c):		
Debt	\$ 101.5	\$ 42.0
Less: Cash and cash equivalents	34.4	31.4
Net Debt	\$ 67.1	\$ 10.6

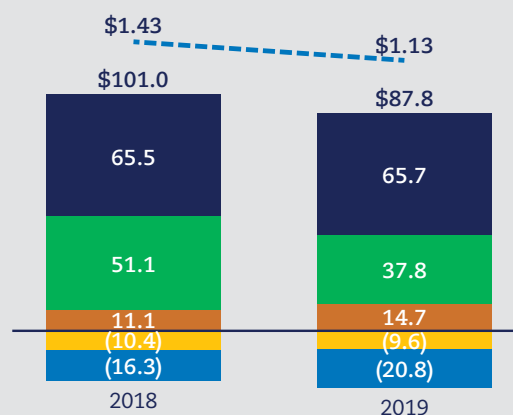
Net Sales by Segment

(\$ in millions)



Consolidated EBITDA & EPS from Ongoing Operations^{(a)(b)}

(\$ in millions except EPS data)



— EPS From Ongoing Operations ■ Aluminum Extrusions ■ PE Films ■ Flexible Packaging Films ■ Pension Expense ■ Ongoing Corporate Expenses

Notes:

(a) Tredegar's presentation of segment EBITDA from ongoing operations ("EBITDA") aligns with key metrics used by the Chief Operating Decision Maker under Accounting Standards Codification ("ASC") 280. For additional information, refer to the segment footnote within Tredegar's consolidated financial statements.

(b) Tredegar's presentation of Consolidated EBITDA from ongoing operations, net income from ongoing operations and earnings per share from ongoing operations are non-GAAP financial measures that exclude the effects of special items, which Tredegar defines for this purpose as gains or losses associated with plant shutdowns, asset impairments and restructurings, gains or losses from the sale of assets, goodwill impairment charges and other items (which includes unrealized gains and losses for an investment accounted for under the fair value method). Consolidated EBITDA from ongoing operations also excludes net interest expenses, income taxes, depreciation & amortization and stock option-based compensation costs. Consolidated EBITDA from ongoing operations, net income from ongoing operations and earnings per share from ongoing operations are key financial and analytical measures used by management to gauge the operating performance of Tredegar's ongoing operations, its borrowing capacity and its estimated enterprise value. They are not intended to represent the stand-alone results for Tredegar's ongoing operations under GAAP and should not be considered as an alternative to cash flow, net income or earnings per share as defined by GAAP. A reconciliation is provided above of these ongoing non-GAAP measures to net income and earnings per share as reported under GAAP. EPS from ongoing operations represents net income from ongoing operations divided by GAAP diluted shares (33.3 million shares).

(c) Tredegar's presentation of Net Debt is not intended to represent total debt as defined by GAAP. Net debt is utilized by management in evaluating Tredegar's financial leverage and equity valuation, and management believes that investors may also find Net Debt to be helpful for the same purpose.

Dear Shareholders,



John M. Steitz
President and Chief Executive Officer

Thank you for taking the time to read my first letter to Tredegar shareholders. I joined Tredegar as a board member in February 2017 and became CEO in March of last year when John Gottwald, our Chairman, retired from the day-to-day responsibilities of leading a public company.

I'd like to start with letting you know that we've been working diligently to safeguard our employees and businesses from the coronavirus. Its impact on our supply chains and customers is uncertain as of the writing of this letter.

At our May 2019 annual meeting, I introduced "The Tredegar Way" comprised of the five core principles that we use to operate our businesses, including top-line growth, margin management, velocity (speed-to-market and working capital management), new investment and leadership. Our business units have wholeheartedly



embraced the “The Tredegar Way.” We expect its by-product to be shareholder value creation.

A big part of shareholder value creation is net cash generation, which starts with sales and providing value to customers. Our broadest measure of cash generation after deducting cash-based operating costs from sales is Consolidated EBITDA. Consolidated EBITDA provides funds to support working capital and to pay interest, income taxes, capital expenditures (new investment), one-time costs and dividends. Our Net Debt will decline with net cash generation.

We use Consolidated EBITDA as a key valuation metric, and a derivation of it is used in our revolving credit agreement to determine the maximum amount of money that we can borrow. We believe that the combination of growing Consolidated EBITDA and reducing Net Debt through net cash generation are key factors for a higher stock price.

Tredegar’s Consolidated EBITDA and EPS from ongoing operations declined in 2019 primarily due to significantly lower sales in the Personal Care component of our PE Films segment. This was mainly from business lost with a key customer, which was not a surprise as we’ve been disclosing its expected occurrence since 2015. Otherwise,

2019 was a good year for Tredegar with strong cash generation and a decline in Net Debt of \$56.5 million, which included a dividend received from our kaléo investment of \$17.6 million.

Aluminum Extrusions

Bonnell Aluminum, our aluminum extrusions business, produces high-quality, soft-alloy and medium strength aluminum extrusions for building and construction, automotive and various specialty markets in North America. The EBITDA at Bonnell was flat in 2019 despite a 7% decline in volume. Trade association data indicates that sales volume for the industry in North America declined by a similar amount. Given Bonnell’s level of fixed costs, if we’d known that sales volume would decline by 7%, we’d have predicted an even greater percentage decline in EBITDA.

A combination of factors caused the favorable performance relative to the volume decline, but mainly delivering higher value to customers and managing operations and costs to levels consistent with sales. Maintaining EBITDA at current levels will be a challenge if industry conditions worsen, but overall, we expect industry cross-cycle growth to be consistent with historical levels of 2–3% for Bonnell’s end-markets.



Operational excellence plays a critical role in delivering custom aluminum extrusions on-time and complete to customers. Bonnell has five facilities, including one acquired with Futura in February 2017 and two facilities acquired with AACOA in October 2012. The acquired facilities and operations, however, have not been fully integrated. In 2019, Bonnell completed a rebranding initiative. Testimonials from employees include “one brand... integration of three cultures...rallying under one umbrella...wearing the same jersey.”

The final integration step will be implementing and utilizing a new enterprise resource planning (ERP) and manufacturing excellence system (MES) to consolidate into one system the three different systems that Bonnell has today. A project plan is currently being prepared. Execution will take several years with an expected payback including better tools and processes for managing and improving operations, customer service levels and margins consistently across the organization.

PE Films

PE Films is comprised of three components: Surface Protection, Personal Care and Bright View Technologies.

Our Surface Protection business produces pristine films that are primarily used by customers to protect components of displays in their manufacturing and transportation processes and then discarded. Surface Protection had record performance in 2019 with EBITDA of \$40 million versus \$33 million in 2018. These amounts include an allocation of PE Films costs for certain shared services and facilities. Sales for Surface Protection were \$104 million in 2019 versus \$98 million in 2018.

Surface Protection sales increased in 2019 by \$6 million and EBITDA increased by \$7 million. I’ve been in business a long time and it’s rare when EBITDA increases more than sales during a year. How did this happen? First, our high-quality films provide savings to our customers in the form of lower scrap rates and higher yields on the substrates that they produce to make flat panel displays. Our unique value proposition can be quantified by them every day. Second, we have a great team at Surface Protection that prices our value proposition appropriately while also driving increases in productivity to improve quality, yields and costs.

Surface Protection can have volume swings that follow the cycles associated with flat panel display end-markets. It also has significant customer



concentration. In this regard, we've been disclosing since mid-2016 a possible significant future customer product transition to a less costly alternative process or material. The full transition continues to encounter delays resulting in higher than expected sales for Surface Protection. Our Surface Protection team has been aggressively pursuing and making progress generating sales from new products, applications and customers. For example, EBITDA from new customers since 2016 is over \$4 million, and our goal is to add over \$3.5 million to this amount in 2020.

Our Personal Care business is a provider of apertured, elastic and embossed films and laminate materials for various personal care end markets. Net sales declined from \$227 million in 2018 to \$162 million in 2019, including net sales related to P&G which declined from \$107 million to \$59 million. EBITDA declined from \$20 million in 2018 to zero in 2019 due to the decline in net sales.



We've disclosed and discussed our lost business with P&G on numerous occasions in the past. We're looking forward and are very focused on winning new business, especially in elastics. Over the last four years, we've expanded our elastics production capabilities with approximately \$50 million of aggregate investments at our Retsag, Hungary and Terre Haute, Indiana manufacturing facilities. We believe the combination of our global elastics manufacturing capabilities and the softness, breathability and high-quality performance of our elastic products provide us an

opportunity to add as much as \$15 million to our annual EBITDA, but we must win the business first.

Flexible Packaging Films

Flexible Packaging Films, which is also referred to as Terphane, is our Brazilian-based producer of polyester-based films used mainly in packaging applications that have specialized properties, such as heat resistance, barrier protection and the ability to accept high-quality print graphics. We've seen positive trends in this business since 2017. Sales volume was up 6% in 2019. EBITDA increased to \$14.7 million in 2019 from \$11.2 million in 2018. We look forward to further improvements, including continuing to expand sales of value-add products such as our high barrier metalized and peelable films. Continuing risks include an existing industry oversupply situation in Latin America and the possibility that the Brazilian government will not extend anti-dumping duties beyond 2020 on products imported from China, India, Egypt and other countries.



In conclusion, I'd like to thank our board of directors for their support and our employees for their hard work, commitment and widespread adoption of the principles of "The Tredegar Way." We look forward to celebrating our successes in 2020.



John M. Steitz

President and Chief Executive Officer

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

FORM 10-K

ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the fiscal year ended December 31, 2019

OR

TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the transition period from _____ to _____

Commission File Number 1-10258

TREDEGAR CORPORATION
(Exact name of registrant as specified in its charter)

Virginia
(State or other jurisdiction
of incorporation or organization)

1100 Boulders Parkway,
Richmond, Virginia
(Address of principal executive offices)

54-1497771
(I.R.S. Employer
Identification No.)

23225
(Zip Code)

Registrant's telephone number, including area code: 804-330-1000
Securities registered pursuant to Section 12(b) of the Act:

<u>Title of Each Class</u>	<u>Trading Symbol</u>	<u>Name of Each Exchange on Which Registered</u>
Common Stock	TG	New York Stock Exchange

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

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

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

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

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

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

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

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

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

Aggregate market value of voting and non-voting common equity held by non-affiliates of the registrant as of June 30, 2019 (the last business day of the registrant's most recently completed second fiscal quarter): \$437,372,894*

Number of shares of Common Stock outstanding as of January 31, 2020: 33,365,039

* In determining this figure, an aggregate of 7,037,025 shares of Common Stock beneficially owned by Floyd D. Gottwald, Jr., John D. Gottwald, William M. Gottwald and the members of their immediate families has been excluded because the shares are deemed to be held by affiliates. The aggregate market value has been computed based on the closing price in the New York Stock Exchange on June 30, 2019.

Documents Incorporated By Reference

Portions of the Tredegar Corporation Proxy Statement for the 2020 Annual Meeting of Shareholders (the "Proxy Statement") are incorporated by reference into Part III of this Form 10-K.

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Year Ended December 31, 2019**

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PART I

Item 1. BUSINESS

Description of Business

Tredegar Corporation (“Tredegar”), a Virginia corporation incorporated in 1988, is engaged, through its subsidiaries, in the manufacture of aluminum extrusions, polyethylene (“PE”) plastic films and polyester (“PET”) films. Unless the context requires otherwise, all references herein to “Tredegar,” “the Company,” “we,” “us” or “our” are to Tredegar Corporation and its consolidated subsidiaries.

The Company's reportable business segments are Aluminum Extrusions, PE Films and Flexible Packaging Films.

Aluminum Extrusions

Aluminum Extrusions, also referred to as Bonnell Aluminum, produces high-quality, soft-alloy and medium-strength custom fabricated and finished aluminum extrusions for the building and construction, automotive and transportation, consumer durables, machinery and equipment, electrical and distribution markets. Bonnell Aluminum has manufacturing facilities located in: Newnan, Georgia; Carthage, Tennessee; Niles, Michigan; Elkhart, Indiana; and Clearfield, Utah.

Aluminum Extrusions manufactures mill (unfinished), anodized and painted (finished) and fabricated aluminum extrusions for sale directly to fabricators and distributors. It also sells branded aluminum flooring trims under its Futura Transitions™ line and aluminum framing systems under its TSLOTS™ line. Aluminum Extrusions competes primarily on the basis of product quality, service and price. Sales are made predominantly in the United States (“U.S.”).

The end-uses in each of Aluminum Extrusions’ primary market segments include:

<u>Major Markets</u>	<u>End-Uses</u>
Building & construction - nonresidential	Commercial windows and doors, curtain walls, storefronts and entrances, walkway covers, ducts, louvers and vents, office wall panels, partitions and interior enclosures, acoustical walls and ceilings, point of purchase displays, pre-engineered structures, and flooring trims (Futura Transitions™)
Building & construction - residential	Shower and tub enclosures, railing and support systems, venetian blinds, swimming pools and storm shutters
Automotive	Automotive and light truck structural components, spare parts, after-market automotive accessories, grills for heavy trucks, travel trailers and recreation vehicles
Consumer durables	Furniture, pleasure boats, refrigerators and freezers, appliances and sporting goods
Machinery & equipment	Material handling equipment, conveyors and conveying systems, medical equipment, and aluminum framing systems (TSLOTS™)
Distribution (metal service centers specializing in stock and release programs and custom fabrications to small manufacturers)	Various custom profiles including storm shutters, pleasure boat accessories, theater set structures and various standard profiles (including rod, bar, tube and pipe)
Electrical	Lighting fixtures, solar panel frames, electronic apparatus and rigid and flexible conduits

Aluminum Extrusions' net sales (sales less freight) by market segment for the three years ended December 31 is shown below:

<i>% of Aluminum Extrusions Net Sales by Market Segment</i>			
	2019	2018	2017
Building and construction:			
Nonresidential	51%	51%	51%
Residential	8%	8%	9%
Automotive	9%	8%	8%
Specialty:			
Consumer durables	11%	12%	12%
Machinery & equipment	7%	7%	7%
Electrical	7%	7%	7%
Distribution	7%	7%	6%
Total	100%	100%	100%

In 2019, 2018 and 2017, nonresidential building and construction accounted for approximately 29%, 28% and 26% of Tredegar's consolidated net sales, respectively.

Raw Materials. The primary raw materials used by Aluminum Extrusions consist of aluminum ingot, aluminum scrap and various alloys, which are purchased from domestic and foreign producers in open-market purchases and under annual contracts. Aluminum Extrusions believes that it has adequate supply agreements for aluminum and other required raw materials and supplies in the foreseeable future.

PE Films

PE Films manufactures plastic films, elastics and laminate materials primarily utilized in surface protection films, personal care materials, and specialty and optical lighting applications. These products are manufactured at facilities in the U.S., The Netherlands, Hungary, China, Brazil and India. PE Films competes in all of its markets on the basis of product innovation, quality, service and price.

Surface Protection. Tredegar's Surface Protection unit produces single- and multi-layer surface protection films sold under the UltraMask[®], ForceField[™], ForceField PEARL[®] and Pearl A[™] brand names. These films are used in high-technology applications, most notably protecting high-value components of flat panel displays used in televisions, monitors, notebooks, smart phones, tablets, e-readers, automobiles and digital signage, during the manufacturing and transportation process. In 2019, 2018 and 2017, Surface Protection accounted for approximately 11%, 10% and 11%, respectively, of Tredegar's consolidated net sales.

Personal Care. Tredegar's Personal Care unit is a global supplier of apertured, elastic and embossed films, laminate materials, and polyethylene and polypropylene overwrap films for personal care markets, including:

- Apertured film and laminate materials for use as topsheet in feminine hygiene products, baby diapers and adult incontinence products (including materials sold under the Sure&Soft[™], Soft Quilt[™], ComfortAire[™], ComfortFeel[™] and FreshFeel[™] brand names);
- Elastic films and fabrics for use as components for baby diapers, adult incontinence products and feminine hygiene products (including components sold under the ExtraFlex[™] and FlexAire[™] brand names);
- Three-dimensional apertured film transfer layers for baby diapers and adult incontinence products sold under the AQUISoft[™], AQUIDry[®] and AQUIDry Plus[™] brand names;
- Thin-gauge films that are readily printable and convertible on conventional processing equipment for overwrap for bathroom tissue and paper towels; and
- Polypropylene films for various industrial applications, including tape and automotive protection.

In 2019, 2018 and 2017, Personal Care accounted for approximately 17%, 22% and 27% of Tredegar's consolidated net sales, respectively.

Bright View Technologies. Tredegar’s Bright View Technologies, a late stage start-up company, designs and manufactures a range of advanced film-based components that provide specialized functionality for the global engineered optics market. By leveraging multiple platforms, including film capabilities and its patented microstructure technology, Bright View Technologies offers high performance solutions for a variety of LED-based applications such as lighting, consumer electronics, automotive, and other optical management markets.

PE Films’ net sales by market segment over the last three years are shown below:

<i>% of PE Films Net Sales by Market Segment *</i>			
	2019	2018	2017
Personal Care	59%	68%	70%
Surface Protection	38%	30%	28%
Bright View Technologies	3%	2%	2%
Total	100%	100%	100%

* See previous discussion by market segment for comparison of net sales to the Company’s consolidated net sales for each of the years presented.

Raw Materials. The primary raw materials used by PE Films are low density, linear low density and high density polyethylene and polypropylene resins. These raw materials are obtained from domestic and foreign suppliers at competitive prices. PE Films believes that there will be an adequate supply of polyethylene and polypropylene resins in the foreseeable future. PE Films also buys polypropylene-based nonwoven fabrics based on the resins previously noted and styrenic block copolymers, and it believes there will be an adequate supply of these raw materials in the foreseeable future.

Customers. PE Films’ products are sold globally, with the top five customers, collectively, comprising 64%, 66% and 68% of its net sales in 2019, 2018 and 2017, respectively. Its largest customer is The Procter & Gamble Company (“P&G”). Net sales to P&G totaled \$59 million in 2019, \$107 million in 2018 and \$122 million in 2017 (these amounts include film sold to third parties that converted the film into materials used with products manufactured by P&G). For additional information, see “Item 1A. Risk Factors”.

Flexible Packaging Films

Flexible Packaging Films is comprised of Terphane Holdings LLC (“Terphane”). Flexible Packaging Films produces PET-based films for use in packaging applications that have specialized properties, such as heat resistance, strength, barrier protection and the ability to accept high-quality print graphics. These differentiated, high-value films are primarily manufactured in Brazil and sold in Latin America and the U.S. under the Terphane® and Sealphane® brand names. Major end uses include food packaging and industrial applications. Flexible Packaging Films competes in all of its markets on the basis of product quality, service and price.

Raw Materials. The primary raw materials used by Flexible Packaging Films to produce polyester resins are purified terephthalic acid (“PTA”) and monoethylene glycol (“MEG”). Flexible Packaging Films also purchases additional polyester resins directly from suppliers. These raw materials are obtained from Brazilian and foreign suppliers at competitive prices. Flexible Packaging Films believes that there will be an adequate supply of polyester resins, PTA and MEG in the foreseeable future.

General

Intellectual Property. Tredegar considers patents, licenses and trademarks to be significant to PE Films. On December 31, 2019, PE Films held 274 patents (including 69 U.S. patents), licenses under patents owned by third parties, and 105 registered trademarks (including 8 U.S. registered trademarks). Flexible Packaging Films held 1 U.S. patent and 14 registered trademarks (including 2 U.S. registered trademarks). Aluminum Extrusions held no U.S. patents and 2 U.S. registered trademarks. On December 31, 2019, these patents had remaining terms of less than one year to 19 years.

Research and Development. Tredegar’s spending for research and development (“R&D”) activities in 2019, 2018 and 2017 was primarily related to PE Films. PE Films has technical centers in: Durham, North Carolina; Richmond, Virginia; and Terre Haute, Indiana. Flexible Packaging Films has a technical center in Bloomfield, New York. R&D spending by the Company was approximately \$19.6 million, \$18.7 million and \$18.3 million in 2019, 2018 and 2017, respectively.

Backlog. Overall backlog for continuing operations in Aluminum Extrusions was approximately \$52.8 million at December 31, 2019 compared to approximately \$67.6 million at December 31, 2018, a decrease of \$14.8 million, or approximately 22%. Backlogs are not material to the operations in PE Films or Flexible Packaging Films. Net sales for Aluminum Extrusions, which the Company believes are cyclical in nature, were \$529.6 million in 2019, \$573.1 million in 2018 and \$466.8 million in 2017.

Environmental Regulation. U.S. laws concerning the environment to which the Company's domestic operations are or may be subject include, among others, the Clean Water Act, the Clean Air Act, the Resource Conservation and Recovery Act, the Occupational Safety and Health Act, the National Environmental Policy Act, the Toxic Substances Control Act, the Comprehensive Environmental Response, Compensation and Liability Act ("CERCLA"), regulations promulgated under these acts, and other federal, state or local laws or regulations governing environmental matters. Compliance with these laws is an important consideration because Tredegar uses hazardous materials in some of its operations, is a generator of hazardous waste, and wastewater from the Company's operations is discharged to various types of wastewater management systems. Under CERCLA and other laws, Tredegar may be subject to financial exposure for costs associated with waste management and disposal, even if the Company fully complies with applicable environmental laws.

The U.S. Environmental Protection Agency has adopted regulations under the Clean Air Act relating to emissions of carbon dioxide and other greenhouse gases ("GHG"), including mandatory reporting and permitting requirements. Several of the Company's manufacturing operations result in emissions of carbon dioxide or GHG and are subject to the current GHG regulations. The Company's compliance with these regulations has yet to require significant expenditures. The cost of compliance with any future GHG legislation or regulations is not presently determinable, but Tredegar does not anticipate compliance to have a material adverse effect on its consolidated financial condition, results of operations and cash flows based on information currently available.

Tredegar is also subject to the environmental laws and regulations in the other countries where it conducts business.

At December 31, 2019, the Company believes that it was in material compliance with all applicable environmental laws, regulations and permits in the U.S. and other countries where it conducts business. Environmental standards tend to become more stringent over time. In addition, consumer preferences, ongoing health, safety and environmental initiatives on plastics and resins and other related legislative initiatives may adversely affect Tredegar's business. In order to maintain substantial compliance with such standards, the Company may be required to incur additional expenditures, the amounts and timing of which are not presently determinable but which could be significant, in constructing new facilities or in modifying existing facilities. Furthermore, failure to comply with current or future laws and regulations could subject Tredegar to substantial penalties, fines, costs and expenses.

Employees. Tredegar employed approximately 3,000 people at December 31, 2019.

Information About Our Executive Officers. See "Directors, Executive Officers and Corporate Governance" in Part III, Item 10 of this Form 10-K.

Available Information and Corporate Governance Documents. Tredegar's Internet address is www.tredegar.com. The Company makes available, free of charge through its website, its annual report on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K and amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), as soon as reasonably practicable after such documents are electronically filed with, or furnished to, the Securities and Exchange Commission ("SEC"). Information filed electronically with the SEC can be accessed on its website at www.sec.gov. In addition, the Company's Corporate Governance Guidelines, Code of Conduct, the charters of the Audit, Executive Compensation, and Nominating and Governance Committees and many other of our corporate policies are available on Tredegar's website and are available in print, without charge, to any shareholder upon request by contacting Tredegar's Corporate Secretary at 1100 Boulders Parkway, Richmond, Virginia 23225. The information on or that can be accessed through the Company's website is not, and shall not be deemed to be, a part of this Annual Report on Form 10-K for the year ended December 31, 2019 ("Form 10-K") or incorporated into other filings it makes with the SEC.

Item 1A. RISK FACTORS

There are a number of risks and uncertainties that could have a material adverse effect on the Company's consolidated financial condition, results of operations, or cash flows. The following risk factors should be considered, in addition to the other information included in this Form 10-K, when evaluating Tredegar and its businesses.

Aluminum Extrusions

- ***Sales volume and profitability of Aluminum Extrusions is cyclical and seasonal and highly dependent on economic conditions of end-use markets in the U.S., particularly in the construction sector.*** Aluminum Extrusions' end-use markets can be cyclical and subject to seasonal swings in volume. Because of the capital intensive nature and level of fixed costs inherent in the aluminum extrusions business, the percentage drop in operating profits in a cyclical downturn will likely exceed the percentage drop in volume. In addition, during an economic slowdown, excess industry capacity often drives increased pricing pressure in many end-use markets as competitors protect their position with key customers. Any benefits associated with cost reductions and productivity improvements may not be sufficient to offset the adverse effects on profitability from pricing and margin pressure and higher bad debts (including a greater chance of loss associated with customers defaulting on fixed-price forward sales contracts) that usually accompany a downturn. In addition, higher energy costs can further reduce profits unless offset by price increases or cost reductions and productivity improvements.
- ***Failure to prevent competitors from evading anti-dumping and countervailing duties, or a reduction in such duties, could adversely impact Aluminum Extrusions.*** Effective April 25, 2017, the anti-dumping duty and countervailing duty orders on aluminum extrusions were extended for a period of five years. The orders will be reviewed again beginning in March 2022. Chinese and other overseas manufacturers continue to try to evade the anti-dumping and countervailing orders to avoid duties. A failure by, or the inability of, U.S. trade officials to curtail the evasion of these duties, or the potential reduction of applicable duties pursuant to annual administrative reviews of the orders by the Department of Commerce, could have a material adverse effect on the financial condition, results of operations and cash flows of Aluminum Extrusions.
- ***The duty-free importation of goods allowed under USMCA could result in lower demand for aluminum extrusions made in the U.S., which could materially and negatively affect Bonnell Aluminum's business and results of operations.*** In March 2018, the U.S. imposed tariffs of 10% on aluminum ingot and semi-finished aluminum imported in the U.S. from certain countries, including countries from which Bonnell Aluminum has historically sourced aluminum products. In September 2019, the United States, Canada and Mexico entered into the United States-Mexico-Canada Agreement ("USMCA"). As a result of the 10% tariffs on aluminum ingot imported to the U.S. and the duty-free importation of goods allowed under USMCA, aluminum extrusions made in Canada and Mexico are free of the 10% tariff and can now be imported into and sold in the U.S. at very competitive prices. This could result in lower demand for aluminum extrusions made in the U.S., which could materially and negatively affect Bonnell Aluminum's business and results of operations.
- ***Competition from China could increase significantly if China is granted market economy status by the World Trade Organization.*** China launched a formal complaint at the World Trade Organization ("WTO") challenging its non-market economy status, claiming that as of December 11, 2016, China's transition period as a non-market economy under its Accession Protocol to the WTO ended. China believes with respect to all Chinese-made products that it should receive market economy status and the rights attendant to that status under WTO rules. The U.S. and the European Union have each rejected that interpretation. If China is granted market economy status by the WTO, the extent to which the U.S. anti-dumping laws will be able to limit unfair trade practices from China will likely be limited because the U.S. government will be forced to utilize Chinese prices and costs that do not reflect market principles in anti-dumping duty investigations involving China, which could ultimately limit the level of anti-dumping duties applied to unfairly traded Chinese imports. The volume of unfairly traded imports of Chinese aluminum extrusions could increase as a result and this, in turn, would likely create substantial pricing pressure on Aluminum Extrusions' products and could have a material adverse effect on the financial condition, results of operations and cash flows of Aluminum Extrusions. In June 2019, at China's request, after certain preliminary rulings in the case went against the Chinese position, the WTO indefinitely suspended the proceedings on the Chinese WTO complaint.

- ***The markets for Aluminum Extrusions' products are highly competitive with product quality, service, delivery performance and price being the principal competitive factors.*** Aluminum Extrusions has approximately 1,500 customers that are in a variety of end-use markets within the broad categories of building and construction, distribution, automotive and other transportation, machinery and equipment, electrical and consumer durables. No single customer exceeds 4% of Aluminum Extrusions' net sales. Future success and prospects depend on Aluminum Extrusions' ability to provide superior service, high quality products, timely delivery and competitive pricing to retain existing customers and participate in overall industry cross-cycle growth. Failure in any of these areas could lead to a loss of customers, which could have an adverse material effect on the financial condition, results of operations and cash flows of Aluminum Extrusions.

PE Films

- ***PE Films is highly dependent on sales associated with its top five customers, the largest of which is P&G.*** PE Films' top five customers comprised approximately 19%, 21% and 26% of Tredegar's consolidated net sales in 2019, 2018 and 2017, respectively, with net sales to P&G alone comprising approximately 6%, 10% and 13% in 2019, 2018 and 2017, respectively. The loss or significant reduction of sales associated with one or more of these customers without replacement by new business could have a material adverse effect on the Company. Other factors that could adversely affect the business include, by way of example, (i) failure by a key customer to achieve success or maintain share in markets in which they sell products containing PE Films' materials, including as a result of customer preferences for products other than plastics, (ii) key customers using products developed by others that replace PE Films' business with such customer, (iii) delays in a key customer rolling out products utilizing new technologies developed by PE Films, (iv) operational decisions by a key customer that result in component substitution, inventory reductions and similar changes, and (v) the cyclical nature of the electronic display markets. While PE Films is undertaking efforts to expand its customer base, there can be no assurance that such efforts will be successful, or that they will offset any delay or loss of sales and profits associated with these large customers.

PE Films anticipates that a portion of its film products used in surface protection applications could be made obsolete by possible future customer product transitions to less costly alternative processes or materials. These transitions principally relate to one customer. The full transition continues to encounter delays. The Company estimates that during the next four quarters the adverse impact on operating profit from this customer shift versus the last four quarters ended December 31, 2019 could possibly be \$14 million. To offset the potential adverse impact, the Company is aggressively pursuing and making progress generating sales from new surface protection products, applications and customers.

The Company previously disclosed a significant customer product transition for the Personal Care component of PE Films. Annual sales for this product declined from approximately \$70 million in 2018 to \$30 million in 2019. The Company recently extended an arrangement with this customer that is expected to generate sales of this product at approximately 2019 levels through at least 2022.

Personal Care had approximately break-even EBITDA (earnings before interest, taxes, depreciation and amortization) from ongoing operations in 2019 as competitive pressures resulted in missed sales and margin goals. Personal Care continues to focus on new business development and cost reduction initiatives in an effort to improve profitability. There can be no assurance that such efforts will be successful or that they will offset any loss of business due to product transitions and other lost sales.

- ***PE Films and its customers operate in highly competitive markets.*** PE Films competes on product innovation, quality, price and service, and its businesses and their customers operate in highly competitive markets. Global market conditions continue to exacerbate the Company's exposure to margin compression in its Personal Care business due to competitive forces, especially as certain personal care products move into the later stages of their product and intellectual protection life cycles. In addition, the changing dynamics of consumer products retailing, including the impact of on-line retailers such as Amazon, is creating price and margin pressure on the customers of PE Films' Personal Care business. While PE Films continually works to identify new business opportunities with new and existing customers, primarily through the development of new products with improved performance and/or cost characteristics, there can be no assurance that such efforts will be successful or that they will offset business lost from competitive dynamics or customer product transitions.
- ***Cost saving initiatives may not achieve the results anticipated.*** PE Films has undertaken and will continue to undertake cost reduction initiatives to consolidate certain production, improve operating efficiencies and generate cost savings. PE Films cannot be certain that it will be able to complete these initiatives as planned or that the estimated operating efficiencies or cost savings from such activities will be fully realized or maintained over time. In addition, PE Films may not be successful in moving production to other facilities or timely qualifying new production equipment. Failure to complete these initiatives could adversely affect PE Films' financial condition, results of operations and cash flows.

- ***Failure of PE Films’ customers, who are subject to cyclical downturns, to achieve success or maintain market share could adversely impact PE Films’ sales and operating margins.*** PE Films’ plastic films serve as components for, or are used in the production of, various consumer products sold worldwide. A customer’s ability to successfully develop, manufacture and market those products is integral to PE Films’ success. Also, consumers of premium products made with or using PE Films’ components may shift to less premium or less expensive products, reducing the demand for PE Films’ plastic films. Cyclical downturns and changing consumer preferences for plastic products generally may negatively affect businesses that use PE Films’ plastic film products, which could adversely affect sales and operating margins.
- ***The Company’s inability to protect its intellectual property rights or its infringement of the intellectual property rights of others could have a material adverse impact on PE Films.*** PE Films operates in an industry where its significant customers and competitors have substantial intellectual property portfolios. The continued success of PE Films’ business depends on its ability not only to protect its own technologies and trade secrets, but also to develop and sell new products that do not infringe upon existing patents or threaten existing customer relationships. Intellectual property litigation is very costly and could result in substantial expense and diversions of Company resources, both of which could adversely affect its consolidated financial condition, results of operations and cash flows. In addition, there may be no effective legal recourse against infringement of the Company’s intellectual property by third parties, whether due to limitations on enforcement of rights in foreign jurisdictions or as a result of other factors.
- ***An unstable economic environment could have a disruptive impact on PE Films’ supply chain.*** Certain raw materials used in manufacturing PE Films’ products are sourced from single suppliers, and PE Films may not be able to quickly or inexpensively re-source from other suppliers. The risk of damage or disruption to its supply chain may increase if and when different suppliers consolidate their product portfolios, experience financial distress or disruption of manufacturing operations (such as, for example, the impact of hurricanes on petrochemical production). Failure to take adequate steps to effectively manage such events, which are intensified when a product is procured from a single supplier or location, could adversely affect PE Films’ consolidated financial condition, results of operations and cash flows, as well as require additional resources to restore its supply chain.

Flexible Packaging Films

- ***Overcapacity in Latin American polyester film production and a history of uncertain economic conditions in Brazil could adversely impact the financial condition, results of operations and cash flows of Flexible Packaging Films.***
For flexible packaging films produced in Brazil, costs for operations in Brazil have been adversely impacted by inflation in Brazil that is higher than in the U.S. Flexible Packaging Films is exposed to additional foreign exchange translation risk because almost 90% of Flexible Packaging Films’ Brazilian sales are quoted or priced in U.S. Dollars while a large part of its Brazilian costs are quoted or priced in Brazilian Real. This mismatch, together with a variety of economic variables impacting currency exchange rates, causes volatility that could negatively or positively impact profitability for Flexible Packaging Films. While Flexible Packaging Films hedges this exposure on a short-term basis with foreign exchange forward rate contracts, the exposure continues to exist beyond the hedging periods.
- ***Governmental failure to extend anti-dumping duties in Brazil on imported products or prevent competitors from circumventing such duties could adversely impact Flexible Packaging Films.*** In recent years, excess global capacity in the industry has led to increased competitive pressures from imports into Brazil. The Company believes that these conditions have shifted the competitive environment from a regional to a global landscape and have driven price convergence and lower product margins for Flexible Packaging Films. Favorable anti-dumping rulings or countervailing duties are in effect for products imported from China, Egypt, India, Mexico, United Arab Emirates, Turkey, Peru and Bahrain. Competitors not currently subject to anti-dumping duties may choose to utilize their excess capacity by selling product in Brazil, which may result in pricing pressures that Flexible Packaging Films may not be able to offset with cost savings measures and/or manufacturing efficiency initiatives. There can be no assurance that efforts to extend anti-dumping duties beyond 2020 on products imported from China, India, Egypt and other countries will be successful.

General

- ***The Company has identified material weaknesses in its internal control over financial reporting at December 31, 2017, 2018 and 2019. The Company’s failure to establish and maintain effective internal control over financial reporting and to maintain effective disclosure controls and procedures increases the risk of a material misstatement in its consolidated financial statements, and its failure to meet its reporting and financial obligations, which in turn could have a negative impact on its financial condition.***

Maintaining effective internal control over financial reporting is an integral part of producing reliable financial statements. As discussed in Item 9A. “Controls and Procedures,” the Company’s management concluded that the Company’s internal control over financial reporting was not effective for the periods referred to therein as a result of

certain deficiencies that were determined to constitute material weaknesses in the Company's internal control over financial reporting.

Under standards established by the Public Company Accounting Oversight Board ("PCAOB"), a material weakness is defined as a deficiency, or a combination of deficiencies, in internal control over financial reporting such that there is a reasonable possibility that a material misstatement of the annual or interim financial statements will not be prevented or detected on a timely basis. Under the criteria set forth in *Internal Control - Integrated Framework 2013* issued by the Committee of Sponsoring Organizations of the Treadway Commission, a material weakness in the design of monitoring controls indicates that the Company has not sufficiently developed and/or documented internal controls by which management can review and oversee the Company's financial information to detect and correct material errors or that the personnel responsible for performing the review did not have the sufficient skill set or knowledge of the subject matter to perform a proper assessment.

As discussed in Item 9A. "Controls and Procedures," to remediate the material weaknesses, the Company, with the assistance of its outside consultant, is in the process of implementing certain changes to its internal controls and reviewing the entire control environment to help ensure that there are no other material weaknesses. The Company believes that its remediation plan will be sufficient to remediate the identified material weaknesses and strengthen its internal control over financial reporting. However, remediation of the identified material weaknesses and strengthening the Company's internal control environment will require a substantial effort throughout 2020 and, the Company anticipates, through the first quarter of 2021. As the Company continues to evaluate and work to improve its internal control over financial reporting and disclosure controls and procedures, management may determine to take additional measures to address control deficiencies or determine to modify the remediation plan. The Company cannot provide assurance, however, of when it will remediate all such weaknesses, nor can it be certain of whether additional actions will be required or the costs of any such actions. Moreover, the Company cannot provide assurance that additional material weaknesses will not arise in the future.

While the material weaknesses discussed in Item 9A. "Controls and Procedures" did not result in material misstatements of the Company's financial statements as of and for the year ended December 31, 2017, 2018 or 2019, or any interim period during 2017, 2018 or 2019, any failure to remediate the material weaknesses, or the development of new material weaknesses in its internal control over financial reporting, could result in material misstatements in the Company's consolidated financial statements and cause it to fail to meet its reporting and financial obligations, which in turn could have a negative impact on its financial condition.

- ***Tredegar has an underfunded defined benefit (pension) plan.*** Tredegar sponsors a pension plan that covers certain hourly and salaried employees in the U.S. The plan was substantially frozen to new participants in 2007, and frozen to benefit accruals for active participants in 2014. As of December 31, 2019, the plan was underfunded under U.S. generally accepted accounting principles ("GAAP") measures by \$100.4 million. Tredegar expects that it will be required to make a cash contribution of approximately \$12.3 million to its underfunded pension plan in 2020, and may be required to make higher cash contributions in future periods depending on the level of interest rates and investment returns on plan assets.
- ***Noncompliance with any of the covenants in the Company's \$500 million revolving credit facility, which matures in June of 2024, could result in all debt under the agreement outstanding at such time becoming due and limiting its borrowing capacity, which could have a material adverse effect on consolidated financial condition and liquidity.*** The credit agreement governing Tredegar's revolving credit facility contains restrictions and financial covenants that, if violated, could restrict the Company's operational and financial flexibility. Failure to comply with these covenants could result in an event of default, which if not cured or waived, would result in all outstanding debt under the credit facility at such time becoming due, which could have a material adverse effect on the Company's consolidated financial condition and liquidity.
- ***Tredegar's performance is influenced by costs incurred by its operating companies, including, for example, the cost of raw materials and energy.*** These costs include, without limitation, the cost of aluminum (the raw material on which Aluminum Extrusions primarily depends), resin (the raw material on which PE Films primarily depends), PTA and MEG (the raw materials on which Flexible Packaging Films primarily depends), natural gas (the principal fuel necessary for Aluminum Extrusions' plants to operate), electricity and diesel fuel. Aluminum, resin and natural gas prices are volatile as shown in the charts in the ***Quantitative and Qualitative Disclosures*** in Part II, Item 7. "Management's Discussion and Analysis of Financial Condition and Results of Operations." The Company attempts to mitigate the effects of increased costs through price increases and contractual pass-through provisions, but there are no assurance that higher prices can effectively be passed through to customers or that Tredegar will be able to offset fully or on a timely basis the effects of higher raw material and energy costs through price increases or pass-through arrangements. Further, the Company's cost control efforts may not be sufficient to offset any increases in raw material, energy or other costs.

- **Tredegar may not be able to successfully integrate strategic acquisitions.** Acquisitions involve special risks, including, without limitation, meeting revenue, margin, working capital and capital expenditure expectations that substantially drive valuation, diversion of management’s time and attention from existing businesses, the potential assumption of unanticipated liabilities and contingencies and potential difficulties in integrating acquired businesses and achieving anticipated operational improvements. Acquired businesses may not achieve expected results.
- **Tredegar is subject to current and future governmental regulation, including environmental laws and regulations, and could become exposed to material liabilities and costs associated with such regulation.** The Company is subject to regulation by local, state, federal and foreign governmental authorities. New laws and regulations, or changes to existing laws, including those relating to environmental matters (including global climate change and plastic products), and privacy matters, could subject Tredegar to significant additional capital expenditures, operating expenses or other compliance costs. Moreover, future developments in federal, state, local and international laws and regulations, including environmental laws, are difficult to predict. Environmental laws and privacy restrictions have become and are expected to continue to become increasingly strict. As a result, Tredegar expects to be subject to new environmental and privacy laws and regulations. However, any such changes are uncertain and, therefore, it is not possible for the Company to predict with certainty the amount of additional capital expenditures or operating expenses that could be necessary for compliance with respect to any such changes. See *Environmental Regulation* in Item 1. “Business” for a further discussion of this risk factor.

We are subject to the U.S. Foreign Corrupt Practices Act, Brazilian anti-corruption laws and similar anti-bribery laws in other jurisdictions, which generally prohibit companies and their intermediaries from making improper payments to foreign officials for the purpose of obtaining or retaining business. Although we have policies and procedures designed to facilitate compliance with these laws and regulations, our employees, contractors and agents may take actions in violation of our policies. Any such violation, even if prohibited by our policies, could adversely affect our business and/or our reputation.

- **Material disruptions at one of the Company’s major manufacturing facilities could negatively impact financial results.** Tredegar believes its facilities are operated in compliance with applicable local laws and regulations and that the Company has implemented measures to minimize the risks of disruption at its facilities. Such a disruption could be a result of any number of events: an equipment failure with repairs requiring long lead times, labor stoppages or shortages, cybersecurity attacks, utility disruptions, constraints on the supply or delivery of critical raw materials, and severe weather conditions. A material disruption in one of the Company’s operating locations could negatively impact production and its consolidated financial condition, results of operations and cash flows.
- **An inability to renegotiate the Company’s collective bargaining agreements could adversely impact its consolidated financial condition, results of operations and cash flows.** Approximately 19% of the Company’s employees are represented by labor unions under various collective bargaining agreements with varying durations and expiration dates. Tredegar may not be able to satisfactorily renegotiate collective bargaining agreements when they expire, which could result in strikes or work stoppages or higher labor costs. In addition, existing collective bargaining agreements may not prevent a strike or work stoppage at the Company’s facilities in the future. Any such work stoppages (or potential work stoppages) could negatively impact Tredegar’s ability to manufacture its products and adversely affect its consolidated financial condition, results of operations and cash flows. None of Tredegar’s collective bargaining agreements expire before the fourth quarter of 2021.
- **Our business and operations, and the operations of our suppliers, may be adversely affected by epidemics such as the recent coronavirus (or COVID-19) outbreak.** We may face risks related to health epidemics or outbreaks of communicable diseases. The outbreak of such a communicable disease could result in a widespread health crisis that could adversely affect general commercial activity and the economies and financial markets of many countries. For example, the recent outbreak of the Coronavirus Disease 2019 (COVID-19), which began in China, has been declared by the World Health Organization to be a “pandemic,” has spread across the globe to many countries in which the Company does business and is impacting worldwide economic activity.

A public health epidemic, including COVID-19, poses the risk that we or our employees, contractors, suppliers, customers and other business partners may be prevented from conducting business activities for an indefinite period of time, including due to shutdowns that may be requested or mandated by governmental authorities, or that such epidemic may otherwise interrupt or impair business activities. For example, a majority of protective films made by the PE Films’ Surface Protection unit are sold to customers who produce key components for flat panel displays. A significant proportion of that production and fabrication occurs in China. Although we have not had significant issues at our Surface Protection manufacturing plant in Guangzhou, China, there can be no assurance that COVID-19 will not impact our Surface Protection business as a result of the virus’ potential impact on delays in production and transportation in, and other impacts on, the flat panel display industry and its supply chain. While it is not possible at this time to estimate the impact that COVID-19 could have on our Surface Protection unit and the Company’s other business units, the continued

spread of COVID-19, the measures taken by the governments of countries affected, actions taken to protect employees, and the impact of the pandemic on various business activities in affected countries could adversely affect our financial condition, results of operations and cash flows.

- ***Tredegar's valuation of its \$7.5 million cost-basis investment in kaléo is volatile and uncertain.*** Tredegar uses the fair value method to account for its fully-diluted ownership interest of approximately 18% in kaleo, Inc. ("kaléo"), a privately held specialty pharmaceutical company. There is no active secondary market for buying or selling stock in kaléo. The Company's fair value estimates can fluctuate materially between reporting periods, primarily due to variances in kaléo's performance versus expectations and changes in the valuation of guideline public companies as measured by their enterprise value-to-EBITDA multiples. Additionally, the estimated fair value of the Company's investment in kaléo could decline. Public pressure to lower the price of pharmaceutical products and competitive pressures in the market could affect the price at which kaléo sells its products. The U.S. Department of Justice began an investigation of kaléo's Evzio business in 2018, the impact of which on kaléo and on the value of the Company's interest in kaléo cannot yet be estimated with any certainty. Kaléo initiated a plan in 2019 to reduce the cost structure of the Evzio product line and reallocate resources to its allergy and pediatric product lines, principally Auvi-Q. As a result, kaléo substantially reduced commercial activities associated with Evzio in 2019. See Note 4 to the ***Notes to Financial Statements*** ("Note 4") for more information.
- ***Rising trade tensions could cause an increase in the cost of the Company's products or otherwise negatively impact the Company.*** A significant portion of the Company's business involves imports to and from the U.S. and other countries where the Company produces and sells its products. Trade tensions have been rising between the U.S. and other countries, particularly China. An increase in tariffs and other trade barriers between the U.S. and China, or between the U.S. and other countries, could cause an increase in the cost of the Company's products or otherwise negatively impact the production and sale of the Company's products in world markets.
- ***A failure in the Company's information technology systems as a result of cybersecurity attacks or other causes could negatively affect Tredegar's business.*** The Company depends on information technology ("IT") to record and process customers' orders, manufacture and ship products in a timely manner, secure its production processes and know-how, maintain the financial accuracy of its business records and maintain personally identified information of its employees. An IT system failure due to computer viruses, internal or external security breaches, cybersecurity attacks, or other malicious causes could disrupt our operations and prevent us from being able to process transactions with our customers, operate our manufacturing facilities and properly report transactions in a timely manner. Increased global IT security threats and cyber-crime pose a potential risk to the security and availability of the Company's IT systems, networks, and services, including those that are managed, hosted, provided, or used by third parties, as well as to the confidentiality, availability, and integrity of the Company's data. To date, interruptions of the Company's IT systems have been infrequent and have not had a material impact on the Company's operations. A significant protracted failure of or security breach of the IT systems, networks, or service providers the Company relies upon, or a loss or disclosure of business or other sensitive information, or personally identified information, as a result of a cybersecurity incident or other cause, could result in substantial costs to the Company, damage to the Company's reputation, regulatory enforcement actions and lawsuits, and could adversely affect the Company's results of operations, financial condition or cash flows.

Item 1B. UNRESOLVED STAFF COMMENTS

None.

Item 2. PROPERTIES

General

Most of the improved real property and the other assets used in the Company's operations are owned. Certain of the owned property is subject to an encumbrance under the Company's revolving credit facility (see Note 11 for more information). Tredegar considers the manufacturing facilities, warehouses and other properties and assets that it owns or leases to be in generally good condition. Capacity utilization at its various manufacturing facilities can vary with product mix and normal fluctuations in sales levels. The Company believes that its Bonnell Aluminum, PE Films and Flexible Packaging Films manufacturing facilities have sufficient capacity to meet current production requirements. Tredegar's corporate headquarters, which is leased, is located at 1100 Boulders Parkway, Richmond, Virginia 23225.

The Company's principal manufacturing plants and facilities as of December 31, 2019 are listed below:

Aluminum Extrusions

Locations in the U.S.

Carthage, Tennessee
Elkhart, Indiana
Newnan, Georgia
Niles, Michigan
Clearfield, Utah (leased)

Principal Operations

Production of aluminum extrusions, fabrication and finishing

PE Films

Locations in the U.S.

Durham, North Carolina (technical center and production facility) (leased)
Pottsville, Pennsylvania
Richmond, Virginia (technical center) (leased)
Terre Haute, Indiana (technical center and production facility)

Locations Outside the U.S.

Guangzhou, China
Kerkrade, The Netherlands
Pune, India
Rétság, Hungary
São Paulo, Brazil

Principal Operations

Production of plastic films, elastics and laminate materials

Flexible Packaging Films

Locations in the U.S.

Bloomfield, New York (technical center and production facility)

Locations Outside the U.S.

Cabo de Santo Agostinho, Brazil

Principal Operations

Production of PET-based films

Item 3. LEGAL PROCEEDINGS

None.

Item 4. MINE SAFETY DISCLOSURES

None.

PART II

Item 5. MARKET FOR TREDEGAR'S COMMON EQUITY, RELATED STOCKHOLDER MATTERS AND ISSUER PURCHASES OF EQUITY SECURITIES

Market Prices of Common Stock and Shareholder Data

Tredegar's common stock is traded on the New York Stock Exchange ("NYSE") under the ticker symbol "TG". There were 33,365,039 shares of common stock held by 1,822 shareholders of record on December 31, 2019.

The following table shows the reported high and low closing prices of Tredegar's common stock by quarter for the past two years.

	2019		2018	
	High	Low	High	Low
First quarter	\$ 19.03	\$ 15.69	\$ 20.25	\$ 15.60
Second quarter	18.43	15.59	24.60	16.99
Third quarter	19.78	15.77	26.25	20.60
Fourth quarter	23.31	18.74	21.56	15.00

Dividend Information

Tredegar has paid a dividend every quarter since becoming a public company in July 1989. During 2017, 2018 and the first two quarters of 2019, the Company paid quarterly dividends of 11 cents per share; for the last two quarters of 2019, the Company paid quarterly dividends of 12 cents per share.

All decisions with respect to the declaration and payment of dividends will be made by the Board of Directors ("Board") in its sole discretion based upon earnings, financial condition, anticipated cash needs, restrictions in the Company's revolving credit facility and other such considerations as the Board deems relevant. See Note 11 for the restrictions on the payment of dividends contained in the Company's revolving credit agreement related to aggregate dividends permitted.

Issuer Purchases of Equity Securities

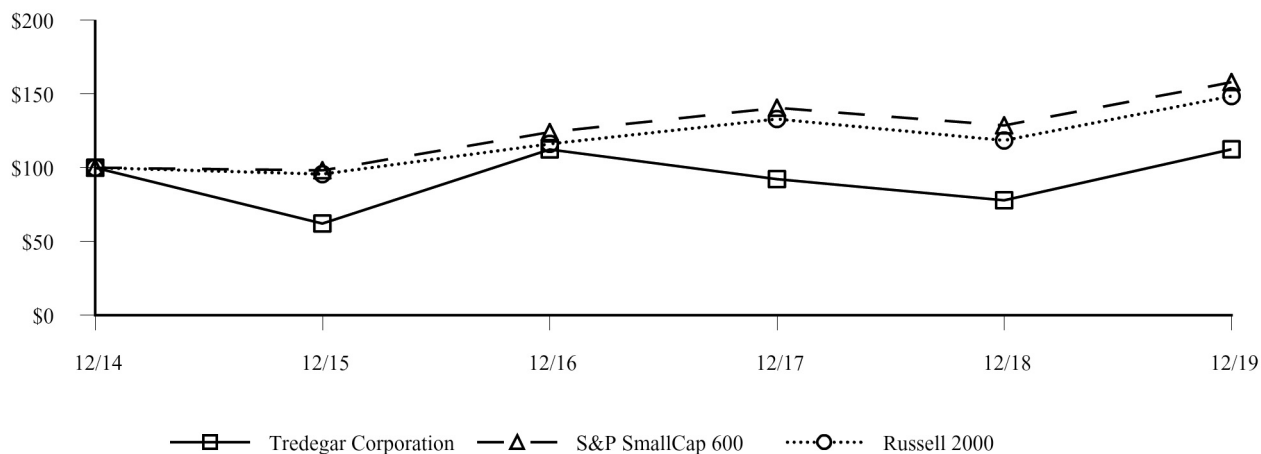
On January 7, 2008, Tredegar announced that its Board approved a share repurchase program whereby management is authorized at its discretion to purchase, in the open market or in privately negotiated transactions, up to 5 million shares of the Company's outstanding common stock. The authorization has no time limit. Tredegar did not repurchase any shares in the open market or otherwise in 2019, 2018 or 2017 under this standing authorization. The maximum number of shares remaining under this standing authorization was 1,732,003 at December 31, 2019.

Comparative Tredegar Common Stock Performance

The following graph compares cumulative total shareholder returns for Tredegar, the S&P SmallCap 600 Stock Index (an index comprised of companies with market capitalizations similar to Tredegar) and the Russell 2000 Index for the five years ended December 31, 2019. Tredegar is part of both the S&P SmallCap 600 Index and Russell 2000 Index.

COMPARISON OF 5 YEAR CUMULATIVE TOTAL RETURN*

Among Tredegar Corporation, the S&P SmallCap 600 Index, and the Russell 2000 Index



*\$100 invested on 12/31/14 in stock or index, including reinvestment of dividends. Fiscal year ending December 31.

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Item 6. SELECTED FINANCIAL DATA

The tables that follow present certain selected financial and segment information for the five years ended December 31, 2019.

FIVE-YEAR SUMMARY

Tredegar Corporation and Subsidiaries

Years Ended December 31	2019	2018	2017	2016	2015
(In thousands, except per-share data)					
Results of Operations:					
Sales	\$ 972,358	\$1,065,471	\$ 961,330	\$ 828,341	\$ 896,177
Other income (expense), net (g)	34,795 (a)	30,459 (a)	51,713 (a)	2,381 (b)	(20,113)
	1,007,153	1,095,930	1,013,043	830,722	876,064
Cost of goods sold (i)	767,511 (a)	849,756 (a)	767,550 (a)	659,867 (b)	715,744 (b)
Freight	36,063	36,027	33,683	29,069	29,838
Selling, general & administrative expenses (i)	94,352 (a)	85,283 (a)	83,386 (a)	73,466 (b)	69,384 (b)
Research and development expenses	19,636	18,707	18,287	19,122	16,173
Amortization of identifiable intangibles	13,601	3,976	6,198	3,978	4,073
Pension and postretirement benefits (i)	9,642	10,406	10,193	11,047	12,242
Interest expense	4,051	5,702	6,170	3,806	3,502
Asset impairments and costs associated with exit and disposal activities	4,125 (a)	2,913 (a)	102,488 (a)	2,684 (b)	3,850 (b)
Goodwill impairment charge	—	46,792 (c)	—	—	44,465 (c)
	948,981	1,059,562	1,027,955	803,039	899,271
Income (loss) before income taxes	58,172	36,368	(14,912)	27,683	(23,207)
Income tax expense (benefit)	9,913	11,526	(53,163)	3,217	8,928
Net income (loss)	\$ 48,259	\$ 24,842	\$ 38,251	\$ 24,466	\$ (32,135)
Diluted earnings (loss) per share	\$ 1.45	\$ 0.75	\$ 1.16	\$ 0.75	\$ (0.99)

Refer to **Notes to Financial Tables** that follow these tables.

FIVE-YEAR SUMMARY

Tredegar Corporation and Subsidiaries

Years Ended December 31	2019	2018	2017	2016	2015
(In thousands, except per-share data)					
Share Data:					
Equity per share (h)	\$ 11.29	\$ 10.70	\$ 10.41	\$ 9.44	\$ 8.35
Cash dividends declared per share	\$ 0.46	\$ 0.44	\$ 0.44	\$ 0.44	\$ 0.42
Weighted average common shares outstanding during the period	33,236	33,068	32,946	32,762	32,578
Shares used to compute diluted earnings (loss) per share during the period	33,258	33,092	32,951	32,775	32,578
Shares outstanding at end of period	33,365	33,176	33,017	32,934	32,682
Closing market price per share:					
High	\$ 23.31	\$ 26.25	\$ 25.00	\$ 25.55	\$ 23.76
Low	\$ 15.59	\$ 15.00	\$ 14.85	\$ 11.68	\$ 12.63
End of year	\$ 22.35	\$ 15.86	\$ 19.20	\$ 24.00	\$ 13.62
Total return to shareholders (d)	43.8%	(15.1)%	(18.2)%	79.4%	(37.6)%
Financial Position:					
Total assets	\$ 712,668	\$ 707,373	\$ 755,743	\$ 651,162	\$ 623,260
Cash and cash equivalents	\$ 31,422	\$ 34,397	\$ 36,491	\$ 29,511	\$ 44,156
Debt	\$ 42,000	\$ 101,500	\$ 152,000	\$ 95,000	\$ 104,000
Shareholders' equity (net book value)	\$ 376,749	\$ 354,857	\$ 343,780	\$ 310,783	\$ 272,748
Equity market capitalization (e)	\$ 745,709	\$ 526,172	\$ 633,935	\$ 790,411	\$ 445,131

Refer to Notes to Financial Tables that follow these tables.

SEGMENT TABLES

Tregear Corporation and Subsidiaries

Net Sales (f)	2019	2018	2017	2016	2015
Years Ended December 31					
(In thousands)					
Aluminum Extrusions	\$ 529,602	\$ 573,126	\$ 466,833	\$ 360,098	\$ 375,457
PE Films	272,758	332,488	352,459	331,146	385,550
Flexible Packaging Films	133,935	123,830	108,355	108,028	105,332
Total net sales	936,295	1,029,444	927,647	799,272	866,339
Add back freight	36,063	36,027	33,683	29,069	29,838
Sales as shown in Consolidated Statements of Income	\$ 972,358	\$ 1,065,471	\$ 961,330	\$ 828,341	\$ 896,177
Identifiable Assets					
As of December 31	2019	2018	2017	2016	2015
(In thousands)					
Aluminum Extrusions	\$ 265,027	\$ 281,372	\$ 268,127	\$ 147,639	\$ 136,935
PE Films	230,415	231,720	289,514	278,558	270,236
Flexible Packaging Films	74,016	58,964	49,915	156,836	146,253
Subtotal	569,458	572,056	607,556	583,033	553,424
General corporate	111,788	100,920	111,696	38,618	25,680
Cash and cash equivalents	31,422	34,397	36,491	29,511	44,156
Total	\$ 712,668	\$ 707,373	\$ 755,743	\$ 651,162	\$ 623,260

Refer to Notes to Financial Tables that follow these tables.

SEGMENT TABLES

Tredgar Corporation and Subsidiaries

EBITDA from Ongoing Operations (l)

Years Ended December 31	2019	2018	2017	2016	2015
(In thousands)					
Aluminum Extrusions:					
Ongoing operations:					
EBITDA	65,683	65,479	58,524	46,967	40,131
Depreciation & amortization	(16,719)	(16,866)	(15,070)	(9,173)	(9,698)
EBIT (m)	48,964	48,613	43,454	37,794	30,433
Plant shutdowns, asset impairments, restructurings and other	(561) (a)	(505) (a)	321 (a)	(741) (b)	(708) (b)
Trade name accelerated amortization	(10,040) (j)	—	—	—	—
PE Films:					
Ongoing operations:					
EBITDA	37,803	51,058	55,889	39,350	63,398
Depreciation & amortization (j)	(14,627)	(14,877)	(14,343)	(13,038)	(15,123)
EBIT (m)	23,176	36,181	41,546	26,312	48,275
Plant shutdowns, asset impairments, restructurings and other	(475) (a)	(5,905) (a)	(4,905) (a)	(4,602) (b)	(4,180) (b)
Goodwill impairment charge	—	(46,792) (c)	—	—	—
Flexible Packaging Films:					
Ongoing operations:					
EBITDA	14,737	11,154	7,817	11,279	15,149
Depreciation & amortization	(1,517)	(1,262)	(10,443)	(9,505)	(9,697)
EBIT (m)	13,220	9,892	(2,626)	1,774	5,452
Plant shutdowns, asset impairments, restructurings and other	—	(45) (a)	(89,398) (a)	(214) (b)	(185) (b)
Goodwill impairment charge	—	—	—	—	(44,465) (c)
Total	74,284	41,439	(11,608)	60,323	34,622
Interest income	296	369	209	261	294
Interest expense	4,051	5,702	6,170	3,806	3,502
Gain (loss) on investment in kaléo accounted for under the fair value method (g)	28,482	30,600	33,800	1,600	(20,500)
Loss on sale of investment property	—	(38)	—	—	—
Unrealized loss on investment property	—	(186)	—	(1,032)	—
Stock option-based compensation expense	4,209	1,221	264	56	483
Corporate expenses, net (k)	36,630 (a)	28,893 (a)	30,879 (a)	29,607 (b)	33,638 (b)
Income (loss) before income taxes	58,172	36,368	(14,912)	27,683	(23,207)
Income tax expense (benefit)	9,913	11,526	(53,163)	3,217	8,928
Net income (loss)	\$ 48,259	\$ 24,842	\$ 38,251	\$ 24,466	\$ (32,135)

Refer to Notes to Financial Tables that follow these tables.

SEGMENT TABLES

Tredegar Corporation and Subsidiaries

Depreciation and Amortization

Years Ended December 31	2019	2018	2017	2016	2015
(In thousands)					
Aluminum Extrusions	\$ 26,759	\$ 16,866	\$ 15,070	\$ 9,173	\$ 9,698
PE Films	15,822	15,513	14,609	13,653	15,480
Flexible Packaging Films	1,517	1,262	10,443	9,505	9,697
Subtotal	44,098	33,641	40,122	32,331	34,875
General corporate (k)	186	163	155	141	107
Total depreciation and amortization expense	\$ 44,284	\$ 33,804	\$ 40,277	\$ 32,472	\$ 34,982

Capital Expenditures

Years Ended December 31	2019	2018	2017	2016	2015
(In thousands)					
Aluminum Extrusions	\$ 17,855	\$ 12,966	\$ 25,653	\$ 15,918	\$ 8,124
PE Films	23,920	21,998	15,029	25,759	21,218
Flexible Packaging Films	8,866	5,423	3,619	3,391	3,489
Subtotal	50,641	40,387	44,301	45,068	32,831
General corporate	223	427	61	389	—
Total capital expenditures	\$ 50,864	\$ 40,814	\$ 44,362	\$ 45,457	\$ 32,831

Refer to Notes to Financial Tables that follow these tables.

NOTES TO FINANCIAL TABLES

- (a) For a description of plant shutdowns, asset impairments, restructurings and other charges for 2019, 2018, and 2017, see the plant shutdowns, asset impairments, restructurings and other tables for 2019, 2018 and 2017 in Results of Continuing Operations “Management’s Discussion and Analysis of Financial Condition and Results of Operations” in Part II, Item 7 of this Form 10-K.
- (b) For a description of plant shutdowns, asset impairments, restructurings and other charges for 2016 and 2015, see “Selected Financial Data” in Part II, Item 6 of the Company’s Annual Report on Form 10-K for the year ended December 31, 2018 (“2018 Form 10-K”), Part II, Item 6.
- (c) Results for 2018 included a goodwill impairment charge of \$46.8 million (\$38.2 million after taxes) recognized in PE Films in the third quarter of 2018 upon completion of an impairment analysis performed as of September 30, 2018. Results for 2015 included a goodwill impairment charge of \$44.5 million (\$44.5 million after taxes) recognized in Flexible Packaging Films in the third quarter of 2015 upon completion of an impairment analysis performed as of September 30, 2015.
- (d) Total return to shareholders is defined as the change in stock price during the year plus dividends per share, divided by the stock price at the beginning of the year.
- (e) Equity market capitalization is the closing market price per share for the period multiplied by the shares outstanding at the end of the period.
- (f) Net sales represents gross sales less freight. The Company uses net sales as its measure of revenues from external customers at the segment level.
- (g) The gains and losses on the Company’s investment in kaléo are included in “Other income (expense), net” in the consolidated statements of income. See Note 4 to the *Notes to financial statements* for more details for the years 2019, 2018 and 2017.
- (h) Equity per share is computed by dividing shareholders’ equity at year end by the shares outstanding at year end.
- (i) For the years ended December 31, 2015 to 2017, the pension and postretirement benefit expenses recorded in Cost of goods sold and Selling, general and administrative expenses were reclassified to a new line item, Pension and postretirement benefits, on the consolidated statements of income, due to the retrospective adoption of Accounting Standards Update (“ASU”) 2017-07.
- (j) Depreciation and amortization (“D&A”) in 2019 for Aluminum Extrusions excludes \$10.0 million for accelerated amortization of trade names as a result of a rebranding initiative. D&A in 2019, 2018, 2017, 2016 and 2015 for PE Films excludes \$1.2 million, \$0.6 million, \$0.3 million, \$0.6 million and \$0.4 million, respectively, for accelerated depreciation associated with restructurings and plant closures.
- (k) Corporate depreciation and amortization is included in Corporate expenses, net, on the EBITDA from ongoing operations table above.
- (l) In the fourth quarter of 2019, the Company changed its segment measure of profit and loss from operating profit from ongoing operations to EBITDA (earnings before interest, taxes, depreciation and amortization) from ongoing operations. EBITDA from ongoing operations is the key profitability metric used by the Company’s chief operating decision maker to assess segment financial performance. See Note 5 to the Notes to Financial Statements in this 2019 Form 10-K for additional business segment information.
- (m) EBIT (earnings before interest and taxes) from ongoing operations is a non-GAAP financial measure included in the reconciliation of segment financial information to consolidated results for the Company. It is not intended to represent the stand-alone results for Tredegar’s ongoing operations under GAAP and should not be considered as an alternative to net income as defined by GAAP. EBIT is a widely understood and utilized metric that is meaningful to certain investors. We believe that including this financial metric in the reconciliation of management’s performance metric, EBITDA from ongoing operations, provides useful information to those investors that primarily utilize EBIT to analyze the Company’s core operations.

Item 7. MANAGEMENT’S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

Forward-looking and Cautionary Statements

Some of the information contained in this Form 10-K may constitute “forward-looking statements” within the meaning of the “safe harbor” provisions of the Private Securities Litigation Reform Act of 1995. When using the words “believe,” “estimate,” “anticipate,” “expect,” “project,” “plan,” “likely,” “may” and similar expressions, Tredegar does so to identify forward-looking statements. Such statements are based on then current expectations and are subject to a number of risks and uncertainties that could cause actual results to differ materially from those addressed in the forward-looking statements. It is possible that actual results and financial condition may differ, possibly materially, from the anticipated results and financial condition indicated in or implied by these forward-looking statements. Accordingly, you should not place undue reliance on these forward-looking statements. For risks and important factors that could cause actual results to differ from expectations, refer to the reports that Tredegar files with or furnishes the SEC from time-to-time, including the risks and important factors set forth in “Risk Factors” in Part I, Item 1A of this Form 10-K. Readers are urged to review and consider carefully the disclosures Tredegar makes in the reports Tredegar files with or furnishes to the SEC. Tredegar does not undertake, and expressly disclaims any duty, to update any forward-looking statement to reflect any change in management’s expectations or any change in conditions, assumptions or circumstances on which such statements are based, except as required by applicable law.

Executive Summary

General

Tredegar is a manufacturer of aluminum extrusions, polyethylene (“PE”) plastic films, and polyester films. Descriptions of all the Company’s businesses are provided in the **Business** section in Part I, Item 1 of this Form 10-K.

Sales were \$1.0 billion in 2019 compared to \$1.1 billion in 2018. Net income was \$48.3 million (\$1.45 per diluted share) in 2019, compared with \$24.8 million (\$0.75 per diluted share) in 2018.

The 2019 results include:

- An after-tax gain on the sale of the Company’s Shanghai manufacturing property of \$5.9 million (\$0.18 per share);

- An after-tax dividend received from kaléo of \$14.8 million (\$0.45 per share); and
- An unrealized after-tax gain on the Company's investment in kaléo of \$8.5 million (\$0.26 per share), which is accounted for under the fair value method (see Note 4 for more details);

The 2018 results include:

- An after-tax impairment of the total goodwill balance of PE Films' Personal Care division of \$38.2 million (\$1.15 per share after-tax). See the *Customer Product Transitions in Personal Care and Surface Protection* section below and Note 8 to the Notes to Financial Statements for more details; and
- An unrealized after-tax gain on the Company's investment in kaléo of \$23.9 million (\$0.72 per share);

Other losses associated with plant shutdowns, asset impairments and restructurings are described in Note 17 to the Notes to Financial Statements. EBITDA from ongoing operations is the measure of profit and loss used by Tredegar's chief operating decision maker for purposes of assessing performance.

Aluminum Extrusions

A summary of operating results for Aluminum Extrusions is provided below:

(In thousands, except percentages)	Year Ended		Favorable/
	December 31,		(Unfavorable)
	2019	2018	% Change
Sales volume (lbs)	208,249	223,866	(7.0)%
Net sales	\$ 529,602	\$ 573,126	(7.6)%
Ongoing operations:			
EBITDA	\$ 65,683	\$ 65,479	0.3 %
Depreciation & amortization**	(16,719)	(16,866)	0.9 %
EBIT*	\$ 48,964	\$ 48,613	0.7 %
Capital expenditures	\$ 17,855	\$ 12,966	

* See the table in Item 6 for a reconciliation of this non-GAAP measure to GAAP and additional information.

**Excludes pre-tax accelerated amortization of trade names of \$10.0 million in 2019. See Note 8 to the Notes to Financial Statements for more information.

Net sales in 2019 decreased versus 2018 primarily due to lower sales volume and the passthrough of lower metal costs, partially offset by an increase in average selling prices to cover higher operating costs.

EBITDA from ongoing operations in 2019 increased slightly in comparison to 2018. Excluding the adverse impact of the accounting for inventories under the last in, first out method in the fourth quarter of 2019 versus 2018 (\$1.5 million), EBITDA from ongoing operations increased \$1.7 million despite a 7% decline in sales volume. The increase was primarily due to higher pricing (\$22.8 million) and fabrication profits (\$1.0 million), partially offset by lower sales volume (\$8.7 million), increased labor and employee-related expenses (\$7.4 million), higher supplies, maintenance, utilities and other operating costs (\$2.0 million), increased freight costs (\$2.0 million) and increased general and administrative expenses (\$1.9 million).

Projected Capital Expenditures and Depreciation & Amortization

Capital expenditures are projected to be \$23 million in 2020, including the expected initial investment for a multi-year project to migrate to a new division-wide enterprise resource planning and manufacturing excellence system (\$6 million), infrastructure upgrades at the Carthage, Tennessee and Newnan, Georgia facilities (\$4 million), and approximately \$12 million required to support continuity of current operations. Depreciation expense is projected to be \$14 million in 2020. Amortization expense is projected to be \$3 million in 2020.

PE Films

A summary of operating results for PE Films is provided below:

(In thousands, except percentages)	Year Ended		Favorable/
	December 31,		(Unfavorable)
	2019	2018	% Change
Sales volume (lbs)	104,497	123,583	(15.4)%
Net sales	\$ 272,758	\$ 332,488	(18.0)%
Ongoing operations:			
EBITDA	\$ 37,803	\$ 51,058	(26.0)%
Depreciation & amortization	(14,627)	(14,877)	1.7 %
EBIT*	\$ 23,176	\$ 36,181	(35.9)%
Capital expenditures	\$ 23,920	\$ 21,998	

* See the table in Item 6 for a reconciliation of this non-GAAP measure to GAAP and additional information.

Net sales in 2019 decreased by \$59.7 million versus 2018 due to lower sales in Personal Care of \$65 million. The decline in net sales in Personal Care was primarily due to lower volume in most product categories from competitive pressures (\$48 million), including a large portion associated with the customer product transition discussed below. In addition, net sales in Personal Care were adversely impacted by pricing, mix and the decline in the value of currencies for operations outside of the U.S. relative to the U.S. Dollar.

EBITDA from ongoing operations in 2019 decreased by \$13.3 million versus 2018 primarily due to:

- A \$6.8 million increase from Surface Protection, primarily due to higher selling prices (\$6.0 million), quality claims in 2018 that did not recur in 2019 (\$1.2 million), production efficiencies (\$1.4 million), and favorable raw material costs (\$1.9 million), partially offset by unfavorable mix (net impact of \$2.0 million) and higher fixed manufacturing and general and administrative costs (\$1.5 million); and
- A \$19.6 million decrease from Personal Care, primarily due to lower volume and unfavorable mix (\$19.3 million), unfavorable pricing (\$4.8 million), and production inefficiencies (\$3.8 million), partially offset by the timing in the passthrough of changes in resin prices (\$2.1 million), lower fixed manufacturing (\$4.4 million) and selling, general and administrative costs (\$1.8 million).

Customer Product Transitions in Personal Care and Surface Protection

The Company previously disclosed a significant customer product transition for the Personal Care component of PE Films. Annual sales for this product declined from approximately \$70 million in 2018 to \$30 million in 2019. The Company recently extended an arrangement with this customer that is expected to generate sales of this product at approximately 2019 levels through at least 2022.

Personal Care had approximately break-even EBITDA from ongoing operations in 2019 as competitive pressures resulted in missed sales and margin goals. Personal Care continues to focus on new business development and cost reduction initiatives in an effort to improve profitability.

The Surface Protection component of PE Films supports manufacturers of optical and other specialty substrates used in flat panel display products. These films are primarily used by customers to protect components of displays in the manufacturing and transportation processes and then discarded.

The Company previously reported the risk that a portion of its film products used in surface protection applications will be made obsolete by possible future customer product transitions to less costly alternative processes or materials. These transitions principally relate to one customer. The full transition continues to encounter delays, resulting in higher than expected sales to this customer in 2019. The Company estimates that during 2020 the adverse impact on EBITDA from ongoing operations from this customer shift versus 2019 could possibly be \$14 million. To offset the potential adverse impact, the Company is aggressively pursuing and making progress generating sales from new surface protection products, applications and customers.

Projected Capital Expenditures and Depreciation & Amortization

Capital expenditures are projected to be \$16 million in 2020, including: \$1.5 million to complete a scale-up line in Surface Protection to improve development and speed to market for new products; \$6 million for other development projects; and \$8 million for capital expenditures required to support continuity of current operations. Depreciation expense is projected to be \$15 million in 2020. There is no amortization expense for PE Films.

Flexible Packaging Films

A summary of operating results for Flexible Packaging Films is provided below:

(In thousands, except percentages)	Year Ended		Favorable/ (Unfavorable) % Change
	December 31,		
	2019	2018	
Sales volume (lbs)	105,276	98,994	6.3 %
Net sales	\$ 133,935	\$ 123,830	8.2 %
Ongoing operations:			
EBITDA	\$ 14,737	\$ 11,154	32.1 %
Depreciation & amortization	(1,517)	(1,262)	(20.2)%
EBIT*	\$ 13,220	\$ 9,892	33.6 %
Capital expenditures	\$ 8,866	\$ 5,423	

* See the table in Item 6 for a reconciliation of this non-GAAP measure to GAAP and additional information.

Net sales in 2019 increased versus 2018 primarily due to higher sales volume and increased selling prices.

Terphane's EBITDA from ongoing operations in 2019 increased by \$3.6 million versus 2018 due to:

- Higher volume (\$2.6 million) and higher selling prices (\$1.6 million), partially offset by higher fixed and variable costs, including costs related to a restarted line (\$2.0 million);
- Net favorable foreign currency translation of Real-denominated operating costs of \$0.4 million; and
- Foreign currency transaction gains of \$1.0 million in 2019 versus losses of \$0.8 million in 2018.

Projected Capital Expenditures and Depreciation & Amortization

Capital expenditures are projected to be \$8 million in 2020, including \$6 million for new capacity for value-added products and productivity projects and \$1 million for capital expenditures required to support continuity of current operations. Depreciation expense is projected to be \$2 million in 2020. Amortization expense is projected to be \$0.4 million in 2020.

Corporate Expenses, Investments, Interest and Income Taxes

Pension expense was \$9.6 million in 2019, a favorable change of \$0.8 million from 2018. The impact on earnings from lower pension expense is reflected in "Corporate expenses, net" in the EBITDA from ongoing operations table in Note 5. Pension expense is projected to be \$14.2 million in 2020. Corporate expenses, net, increased in 2019 versus 2018 primarily due to higher stock-based employee compensation (\$1.7 million), and consulting fees (\$4.1 million) related to the identification and remediation of previously disclosed material weaknesses in the Company's internal control over financial reporting, business development activities, and implementation of new accounting guidance.

Interest expense decreased to \$4.1 million in 2019 from \$5.7 million in 2018, primarily due to lower average debt levels.

During 2019, the Company recognized consolidated income tax expense of \$9.9 million based on pretax income of \$58.2 million. During 2018, the Company recognized consolidated income tax expense of \$11.5 million based on pretax income of \$36.4 million. Information on the differences between the effective tax rate for income and the U.S. federal statutory rate for 2019 and 2018 are further detailed in the effective income tax rate reconciliation provided in Note 16.

Total debt was \$42.0 million at December 31, 2019, compared to \$101.5 million at December 31, 2018. Net debt (debt in excess of cash and cash equivalents) was \$10.6 million at December 31, 2019, compared to \$67.1 million at December 31, 2018. Net debt is calculated as follows:

(In millions)	December 31, 2019		December 31, 2018	
Debt	\$	42.0	\$	101.5
Less: Cash and cash equivalents		31.4		34.4
Net debt	\$	10.6	\$	67.1

Net debt, a financial measure that is not calculated or presented in accordance with GAAP, is not intended to represent debt as defined by GAAP, but is utilized by management in evaluating financial leverage and equity valuation. The Company believes that investors also may find net debt helpful for the same purposes. Consolidated net capitalization and other credit measures are provided in the *Financial Condition* section below.

Critical Accounting Policies

In the ordinary course of business, the Company makes a number of estimates and assumptions relating to the reporting of results of operations and financial position in the preparation of financial statements in conformity with GAAP. Actual results could differ significantly from those estimates under different assumptions and conditions. The Company believes the following discussion addresses its critical accounting policies. These policies require management to exercise judgments that are often difficult, subjective and complex due to the necessity of estimating the effect of matters that are inherently uncertain.

Impairment and Useful Lives of Long-lived Identifiable Assets and Goodwill

The Company assesses its long-lived identifiable assets for impairment when events or circumstances indicate that their carrying value may not be recoverable from future cash flows. Any necessary impairment charges are recorded when the Company does not believe the carrying value of the long-lived asset(s) will be recoverable. Tredegar also reassesses the useful lives of its long-lived assets based on changes in the business and technologies.

The Company assesses goodwill for impairment when events or circumstances indicate that the carrying value may not be recoverable, or, at a minimum, on an annual basis (December 1st of each year). When assessing goodwill for impairment, accounting guidance allows the Company to first perform a qualitative assessment about the likelihood of the carrying value of a reporting unit exceeding its fair value, referred to as the Step 0 assessment. The Step 0 assessment requires the evaluation of certain qualitative factors, including macroeconomic conditions, industry and market considerations, cost factors and overall financial performance, as well as company and reporting unit factors. If the Company's Step 0 analysis indicates that it is more likely than not that the fair value of a reporting unit is less than the carrying amount, then the Company would perform a quantitative impairment test.

As of December 31, 2019, the Company applied the Step 0 assessment to its PE Films' Surface Protection reporting unit and Aluminum Extrusions' reporting units created as a result of acquisitions in 2012 ("AACOA") and in 2017 ("Futura"), each of which had fair values significantly in excess of their carrying amounts when last tested using the quantitative impairment test. The Company's Step 0 analysis in 2019 of the reporting units concluded that it is not more likely than not that the fair value of the reporting unit is less than its carrying amount. Therefore, the quantitative goodwill impairment test for these reporting units was not necessary in 2019.

Goodwill for Surface Protection, AACOA and Futura totaled \$57.3 million, \$13.7 million and \$10.4 million, respectively, at December 31, 2019.

In assessing the recoverability of goodwill and long-lived identifiable assets, the Company primarily estimates fair value using discounted cash flow analysis and comparative enterprise value-to-EBITDA multiples. These calculations require management to make assumptions regarding estimated future cash flows, discount rates and other factors to determine if an impairment exists. If these estimates or their related assumptions change in the future, the Company may be required to record additional impairment charges.

All goodwill associated with PE Films' Personal Care operating unit, in the amount of \$46.8 million (\$38.2 million after deferred income tax benefits), was impaired in the third quarter of 2018. The goodwill impairment charge was recognized upon the completion of an asset recoverability test and impairment analysis performed as of September 30, 2018. This non-operating, non-cash charge, as computed under GAAP, resulted from the expectation of a significant customer transition. The

Company performed an asset recoverability test and impairment analysis using projections under various business planning scenarios and concluded that the fair value of the Personal Care reporting unit was less than its carrying value.

In 2017, Flexible Packaging Films recorded a charge for the impairment of assets in the amount of \$101 million. As part of this write-down, trade names, customer relationships and proprietary technology were impaired by \$4.0 million, \$9.4 million and \$4.1 million, respectively; the remaining part of the write-down was related to property, plant and equipment.

Investment Accounted for Under the Fair Value Method

In August 2007 and December 2008, Tredegar made an aggregate investment of \$7.5 million in kaléo (formerly Intelliject, Inc.), a privately held specialty pharmaceutical company. This investment is accounted for under the fair value method. At the time of the initial investment, the Company elected the fair value option of accounting since its investment objectives were similar to those of venture capitalists, which typically do not have controlling financial interests (venture capital funds generally use the fair value option to account for their investment portfolios). At December 31, 2019, Tredegar's ownership interest was approximately 18% on a fully diluted basis.

The Company considers its investment in kaléo to be a Level 3 investment under the hierarchy described in GAAP. The Company discloses the level of its investments within the fair value hierarchy in which fair value measurements in their entirety fall, segregating fair value measurements using quoted prices in active markets for identical assets or liabilities (Level 1), significant other observable inputs (Level 2), and significant unobservable inputs (Level 3). The Company believes that its fair value estimates will continue to be based upon Level 3 inputs since there is no secondary market for Tredegar's ownership. See Note 4 for more information on valuation methods used. Adjustments to the estimated fair value of this investment will be made in the period in which such changes can be quantified.

At December 31, 2019 and 2018, the fair value of the Company's investment in kaléo (also the carrying value, which is separately stated in the consolidated balance sheets) was estimated at \$95.5 million and \$84.6 million, respectively. The ultimate value of the Company's ownership interest in kaléo will be determined and realized only if and when a liquidity event occurs, and the ultimate value could be materially different from the \$95.5 million estimated fair value reflected in the Company's financial statements at December 31, 2019.

Pension Benefits

Tredegar sponsors noncontributory defined benefit (pension) plans in its continuing operations that have resulted in varying amounts of net pension income or expense, as developed from actuarial valuations. Inherent in these valuations are key assumptions including discount rates, expected return on plan assets and rate of future compensation increases. The Company is required to consider current market conditions, including changes in interest rates and plan asset investment returns, in determining these assumptions. Actuarial assumptions may differ materially from actual results due to changing market and economic conditions, higher or lower withdrawal rates or longer or shorter life spans of participants. These differences may result in a significant impact to the amount of net pension income or expense recorded in future periods.

The discount rate is used to determine the present value of future payments. The discount rate is the single rate that, when applied to expected benefit payments, provides a present value equal to the present value of expected benefit payments determined by using the AA-rated bond yield curve. In general, the pension liability increases as the discount rate decreases and vice versa. The weighted average discount rate utilized was 3.27%, 4.40% and 3.72% at the end of 2019, 2018 and 2017, respectively, with changes between periods due to changes in market interest rates. Pay for active participants of the plan was frozen as of December 31, 2007. As of January 31, 2018, the plan no longer accrued benefits associated with crediting employees for service, thereby freezing all future benefits under the plan.

A lower expected return on plan assets increases the amount of expense and vice versa. Decreases in the level of actual plan assets will also serve to increase the amount of pension expense. The total return on plan assets (net of fees and plan expenses), which is primarily affected by the change in fair value of plan assets, current year contributions and current year payments to participants, was approximately 11.8% in 2019, negative 5.4% in 2018 and 10.0% in 2017. The expected long-term return on plan assets relating to continuing operations, which is estimated by asset class and generally based on inflation-adjusted historical returns, volatilities, risk premiums and managed asset premiums, was 6.00%, 6.50% and 6.50% in 2019, 2018 and 2017, respectively. The Company anticipates that its expected long-term return on plan assets will be 5.00% for 2020. See Note 13 for more information on expected long-term return on plan assets and asset mix.

See the *Executive Summary* section above for further discussion regarding the financial impact of the Company's pension plans.

Income Taxes

On a quarterly basis, Tredegar reviews its judgments regarding uncertain tax positions and the likelihood that the benefits of a deferred income tax asset will be realized. As circumstances change, the Company reflects in earnings any adjustments to unrecognized benefits for uncertain tax positions and valuation allowances for deferred income tax assets.

For financial reporting purposes, unrecognized tax benefits on uncertain tax positions were \$0.9 million, \$3.4 million and \$2.0 million as of December 31, 2019, 2018 and 2017, respectively. Tax payments resulting from the successful challenge by the taxing authority on uncertain tax positions taken by Tredegar would possibly result in the payment of interest and penalties. Accordingly, the Company also accrues for possible interest and penalties on uncertain tax positions. The balance of accrued interest and penalties on deductions taken relating to uncertain tax positions was \$0.1 million, \$0.2 million and \$0.1 million at December 31, 2019, 2018 and 2017, respectively (\$0.1 million, \$0.2 million and \$0.1 million, respectively, net of corresponding U.S. federal and state income tax benefits). Accruals for possible interest and penalties on uncertain tax positions are reflected in income tax expense for financial reporting purposes.

Tredegar, or one of its subsidiaries, files income tax returns in the U.S. federal jurisdiction, various states and jurisdictions outside the U.S. With few exceptions, Tredegar is no longer subject to U.S. federal, state or non-U.S. income tax examinations by tax authorities for years before 2016.

As of December 31, 2019 and 2018, valuation allowances relating to deferred income tax assets were \$5.1 million and \$24.7 million, respectively. For more information on deferred income tax assets and liabilities, see Note 16.

Recently Issued Accounting Standards

Refer to the section ***Recently Issued Accounting Standards*** in Note 1 for information concerning the effect of recently issued accounting pronouncements.

Results of Operations

2019 versus 2018

Revenues. Sales in 2019 decreased by 8.7% compared with 2018 due to lower sales in both Aluminum Extrusions and PE Films. Net sales decreased 7.6% in Aluminum Extrusions primarily due to lower sales volume and the passthrough of lower metal costs, partially offset by an increase in average selling prices to cover higher operating costs. Net sales decreased 18.0% in PE Films primarily due to lower volume in most product categories in Personal Care from competitive pressures. Net sales increased in Flexible Packaging Films by 8.2% primarily due to higher sales volume and increased selling prices. For more information on changes in net sales and volume, see the ***Executive Summary*** section above.

Operating Costs and Expenses. Consolidated gross profit margin (sales minus cost of goods sold and freight as a percentage of sales) was 17.4% in 2019 versus 16.9% in 2018. The gross profit margin in Aluminum Extrusions increased primarily as a result of higher selling prices. The gross profit margins in PE Films and Flexible Packaging Films were essentially unchanged from 2018 to 2019.

For more information on changes in operating costs and expenses, see the ***Executive Summary*** section above.

Selling, General and Administrative. As a percentage of sales, selling, general and administrative and R&D expenses were 11.7% in 2019, which increased from 9.8% in 2018. The increase in selling, general and administrative and R&D expenses as a percentage of sales can be primarily attributed to lower sales for Aluminum Extrusions and PE Films. Increased spending was due to higher stock-based compensation and consulting fees due to remediation activities and other costs relating to the Company's material weaknesses in internal control over financial reporting, business development activities, and implementation of new accounting guidance.

Plant shutdowns, asset impairments, restructurings and other. Pre-tax losses associated with plant shutdowns, asset impairments, restructurings and other items in 2019 as detailed below are shown in the EBITDA from ongoing operations table in Note 5 and are included in "Asset impairments and costs associated with exit and disposal activities, net of adjustments" in the consolidated statements of income, unless otherwise noted. A discussion of unrealized gains and losses on investments can also be found in Note 4 and additional information on restructuring costs can be found in Note 17.

(\$ in millions)	Q1	Q2	Q3	Q4	2019
Aluminum Extrusions:					
(Gains) losses from sale of assets, investment writedowns and other items:					
Wind damage to roof of Elkhart, Indiana plant ²	\$ —	\$ —	\$ 0.3	\$ (0.4)	\$ (0.1)
Environmental charges at Carthage Tennessee plant ¹	—	—	0.3	0.2	0.5
Total for Aluminum Extrusions	\$ —	\$ —	\$ 0.6	\$ (0.2)	\$ 0.4
PE Films:					
(Gains) losses associated with plant shutdowns, asset impairments and restructurings:					
Shanghai plant shutdown:					
Asset-related expenses	\$ 0.2	\$ 0.2	\$ 0.2	\$ 0.1	\$ 0.7
Gain from sale of plant ³	—	—	(6.3)	—	(6.3)
Consolidation of Personal Care manufacturing facilities - U.S. and Europe: ⁴					
Severance	—	0.1	0.5	—	0.6
Asset impairment	—	0.1	—	—	0.1
Product qualifications ¹	—	—	0.1	—	0.1
Lake Zurich, Illinois plant shutdown and transfer of production to new elastics lines in Terre Haute, Indiana: ⁴					
Severance	—	0.3	0.4	0.2	0.9
Asset impairment	—	0.2	—	—	0.2
Safety/quality initiative ¹	—	—	0.1	0.1	0.2
Accelerated depreciation ¹	—	0.3	0.5	0.4	1.2
Product qualifications ¹	—	—	0.1	0.1	0.2
Reserve for inventory impairment - Personal Care's Hungary facility	—	—	0.2	—	0.2
Other restructuring costs - severance	0.4	0.1	0.1	0.2	0.8
Write-off Personal Care production line - Guangzhou, China facility	0.4	—	—	—	0.4
Subtotal for PE Films	1.0	1.3	(4.1)	1.1	(0.7)
Losses from sale of assets, investment writedowns and other items:					
Estimated excess costs associated with ramp-up of new product offerings and additional expenses related to strategic capacity expansion projects ¹	0.3	0.2	0.3	0.3	1.1
Total for PE Films	\$ 1.3	\$ 1.5	\$ (3.8)	\$ 1.4	\$ 0.4
Corporate:					
Professional fees associated with: internal control over financial reporting; business development activities; and implementation of new accounting guidance ²	\$ 0.9	\$ 2.0	\$ 1.6	\$ 0.8	\$ 5.3
Accelerated recognition of stock option-based compensation ⁵	—	—	—	1.3	1.3
Environmental costs not associated with a business unit ²	—	—	—	0.6	0.6
Total for Corporate	\$ 0.9	\$ 2.0	\$ 1.6	\$ 2.7	\$ 7.2

1. Included in "Cost of goods sold" in the consolidated statements of income.

2. Included in "Selling, general and administrative" in the consolidated statements of income.

3. Included in "Other income (expense), net" in the consolidated statements of income.

4. Additional information on costs associated with exit and disposal activities and other details are available in Note 17.

5. Included in "Stock option-based compensation" in the EBITDA from ongoing operations table in Note 5.

Interest Income and Expense. Interest income, which is included in “Other income (expense), net” in the consolidated statements of income, was \$0.3 million in 2019 and \$0.4 million in 2018.

Interest expense, which is net of amounts capitalized and included in property, plant and equipment (\$0.9 million and \$0.3 million capitalized in 2019 and 2018, respectively), was \$4.1 million in 2019, compared to \$5.7 million for 2018. Average debt outstanding and interest rates were as follows:

(In millions, except percentages)	2019	2018
Floating-rate debt with interest charged on a rollover basis at one-month LIBOR plus a credit spread:		
Average outstanding debt balance	\$ 85.0	\$ 121.3
Average interest rate	4.0%	3.8%

Identifiable Assets. A summary of identifiable assets for the year ended December 31, 2019 versus 2018 is provided below:

(In thousands)	Year Ended December 31,		
	2019	2018	Variance
Aluminum Extrusions	\$ 265,027	\$ 281,372	\$ (16,345)
PE Films	230,415	231,720	(1,305)
Flexible Packaging Films	74,016	58,964	15,052
Subtotal	569,458	572,056	(2,598)
General corporate	111,788	100,920	10,868
Cash and cash equivalents	31,422	34,397	(2,975)
Total	\$ 712,668	\$ 707,373	\$ 5,295

Identifiable assets in Aluminum Extrusions decreased at December 31, 2019 from December 31, 2018 primarily due to accelerated trade name amortization, lower accounts receivable balances due to lower sales and the timing of collections and lower inventory balances, partially offset by the addition of the right-of-use assets resulting from the implementation of the new lease accounting guidance. Identifiable assets in PE Films decreased slightly at December 31, 2019 from December 31, 2018. Identifiable assets in Flexible Packaging Films increased at December 31, 2019 from December 31, 2018 primarily due to current year capital expenditures partially offset by lower inventory balances. Identifiable assets in General corporate increased at December 31, 2019 from December 31, 2018 primarily due to the increase in the fair value of the Company’s investment in kaléo.

2018 versus 2017

Revenues. Sales in 2018 increased by 10.8% compared with 2017 due to higher sales in all segments, except PE Films. Net sales increased 22.8% in Aluminum Extrusions primarily due to a full year of sales by Futura (acquired February 15, 2017), higher volume and an increase in average selling prices from the pass-through of higher market-driven raw material costs. Net sales decreased 5.7% in PE Films primarily due to topsheet business lost from competitive pressures in Europe and Asia, including at the Shanghai, China, facility that was recently shut down. Net sales increased in Flexible Packaging Films by 14.3% primarily due to higher sales volume, increased selling prices associated with the pass-through of higher resin costs and increased production capacity from an idle line that was restarted in June 2018. For more information on changes in net sales and volume, see the **Segment Analysis** below.

Operating Costs and Expenses. Consolidated gross profit margin (sales minus cost of goods sold and freight as a percentage of sales) was 16.9% in 2018 versus 16.7% in 2017. The gross profit margin in Aluminum Extrusions decreased primarily as a result of operating inefficiencies relating to the operation of its Niles, Michigan facility. The gross profit margin in PE Films decreased due to lower volume, as discussed above, unfavorable product mix and increased operating costs, partially offset by the realized cost savings of a restructuring completed in 2017. The gross profit margin in Flexible Packaging Films increased due to significantly lower depreciation and amortization costs in 2018 compared to 2017, resulting from the \$101 million non-cash asset impairment charge recognized in the fourth quarter of 2017, higher production primarily from the restart of an idle line in June 2018, and higher overall demand.

For more information on changes in operating costs and expenses, see the **Segment Analysis** below.

Selling, General and Administrative. As a percentage of sales, selling, general and administrative and R&D expenses were 9.8% in 2018, which decreased from 10.6% in 2017. The decrease in selling, general and administrative and R&D expenses as a percentage of sales can be primarily attributed to higher sales as a result of the acquisition of Futura and the restart of a production line by Flexible Packaging Films, overall higher demand at Aluminum Extrusions and higher selling prices primarily due to the pass-through to customers of higher market-driven raw material costs.

During 2019, the Company changed the presentation of plant shutdowns, asset impairments, restructuring and other. The table below for 2018 has been provided to be consistent with the 2019 presentation.

Plant shutdowns, asset impairments, restructurings and other. Pre-tax losses associated with plant shutdowns, asset impairments, restructurings and other items in 2018 as detailed below are shown in the EBITDA from ongoing operations table in Note 5 and are included in “Asset impairments and costs associated with exit and disposal activities, net of adjustments” in the consolidated statements of income, unless otherwise noted. A discussion of unrealized gains and losses on investments can also be found in Note 4 and additional information on restructuring costs can be found in Note 17.

(\$ in millions)	Q1	Q2	Q3	Q4	2018
Aluminum Extrusions:					
Losses associated with plant shutdowns, asset impairments and restructurings:					
Other restructuring costs - severance	\$ 0.1	\$ —	\$ —	\$ —	\$ 0.1
Losses from sale of assets, investment writedowns and other items:					
Aluminum Extrusions:					
Wind damage to roof of Elkhart, Indiana plant ²	—	—	0.1	—	0.1
Environmental charges at Carthage, Tennessee facility ¹	—	—	0.2	0.1	0.3
Subtotal for Aluminum Extrusions	—	—	0.3	0.1	0.4
Total for Aluminum Extrusions	\$ 0.1	\$ —	\$ 0.3	\$ 0.1	\$ 0.5
PE Films:					
(Gains) losses associated with plant shutdowns, asset impairments and restructurings:					
Shanghai plant shutdown:					
Asset-related expenses	\$ —	\$ —	\$ 0.1	\$ 0.3	\$ 0.4
Severance & employee-related expenses	—	0.3	1.1	0.4	1.8
Severance & employee-related expenses - administrative ¹	—	0.1	0.2	0.1	0.4
Legal	—	0.1	(0.1)	—	—
Accelerated depreciation ¹	—	0.1	0.4	0.1	0.6
Other restructuring costs - severance	0.1	—	0.2	0.3	0.6
Subtotal for PE Films	0.1	0.6	1.9	1.2	3.7
(Gains) losses from sale of assets, investment writedowns and other items:					
Estimated excess costs associated with ramp-up of new product offerings and additional expenses related to strategic capacity expansion projects ¹	1.0	0.6	0.2	0.3	2.1
Costs related to a fire that occurred at a facility in Rétság, Hungary ²	—	—	—	0.1	0.1
Costs to prepare a market study ²	—	—	0.2	—	0.2
Gain on reversal of contingent liability ³	—	—	—	(0.3)	(0.3)
Subtotal for PE Films	1.0	0.6	0.4	0.1	2.1
Total for PE Films	\$ 1.1	\$ 1.2	\$ 2.3	\$ 1.3	\$ 5.8
Corporate:					
Professional fees associated with: internal control over financial reporting; and implementation of new accounting guidance ²	\$ 0.3	\$ —	\$ 0.2	\$ 0.6	\$ 1.1
Loss on investment in Harbinger Capital Partners Special Situations Fund, L.P. ³	—	0.2	0.2	0.1	0.5
Business development projects ²	—	—	—	0.5	0.5
Total for Corporate	\$ 0.3	\$ 0.2	\$ 0.4	\$ 1.2	\$ 2.1

1. Included in "Cost of goods sold" in the consolidated statements of income.

2. Included in "Selling, general and administrative" in the consolidated statements of income.

3. Included in "Other income (expense), net" in the consolidated statements of income.

Segment Analysis. A summary of operating results for 2018 versus 2017 for each of the Company's reporting segments is shown below.

Aluminum Extrusions

A summary of operating results for Aluminum Extrusions is provided below:

	Year Ended		Favorable/ (Unfavorable) % Change
	December 31,		
(In thousands, except percentages)	2018	2017	
Sales volume (lbs)*	190,696	176,269	8.2%
Net sales	\$ 573,126	\$ 466,833	22.8%
Ongoing operations:			
EBITDA	\$ 65,479	\$ 58,524	11.9%
Depreciation & amortization	(16,866)	(15,070)	11.9%
EBIT**	\$ 48,613	\$ 43,454	11.9%
Capital expenditures	\$ 12,966	\$ 25,653	

* Sales volume for the years ended December 31, 2018 and 2017 excludes sales volume of 33,170 lbs. and 23,166 lbs., respectively, associated with Futura, which was acquired on February 15, 2017.

** See the table in Item 6 for a reconciliation of this non-GAAP measure to GAAP and additional information.

Net sales in 2018 increased versus 2017 primarily due to higher volume and an increase in average selling prices from the pass-through of higher market-driven raw material costs. Futura contributed \$102.5 million of net sales in 2018 versus \$71.0 million for the 10½ months owned during 2017. Excluding the impact of Futura, the increase in net sales was the result of higher sales volume (\$32.4 million), an increase in average selling prices as noted above (\$31.7 million) and improved mix (\$10.8 million).

Volume on an organic basis, (which excludes the impact of the Futura acquisition) increased by 8.2% in 2018 versus 2017 due to higher volume in all of Aluminum Extrusion's primary markets. Overall average capacity utilization during the fourth quarter of 2018 was in excess of 90%.

EBITDA from ongoing operations in 2018 increased by \$7.0 million in comparison to 2017. Excluding the favorable impact of owning Futura for a full twelve-month period (\$3.8 million) and the benefit for inventories accounted for under the LIFO method in the fourth quarter of 2018 (\$2.3 million), EBITDA from ongoing operations increased \$0.9 million, primarily due to:

- Higher volume (\$5.1 million) and favorable mix (\$5.8 million), which were offset by higher employee-related costs (\$5.2 million), higher supplies and maintenance (\$2.3 million), higher freight (\$1.7 million), and higher utilities, primarily in the first quarter of 2018 at the Newnan, Georgia facility (\$0.9 million).

The Company focused on fixing inefficiencies associated with the new extrusion line at its Niles, Michigan plant and estimated that EBITDA from ongoing operations in 2018 would have been higher by \$3 million if not for these inefficiencies. These inefficiencies are reflected in the higher costs noted above.

PE Films

A summary of operating results for PE Films is provided below:

(In thousands, except percentages)	Year Ended		Favorable/ (Unfavorable)
	December 31,		% Change
	2018	2017	
Sales volume (lbs)	123,583	138,999	(11.1)%
Net sales	\$ 332,488	\$ 352,459	(5.7)%
Ongoing operations:			
EBITDA	\$ 51,058	\$ 55,889	(8.6)%
Depreciation & amortization	(14,877)	(14,343)	3.7%
EBIT*	\$ 36,181	\$ 41,546	(12.9)%
Capital expenditures	\$ 21,998	\$ 15,029	

* See the table in Item 6 for a reconciliation of this non-GAAP measure to GAAP and additional information.

Net sales in 2018 decreased by \$20.0 million versus 2017 primarily due to:

- The volume decline in Personal Care was primarily related to topsheet business lost from competitive pressures in North America, Europe and Asia, including at the Shanghai, China, facility that was shut down in the fourth quarter of 2018. A small portion of the volume decline was associated with the start of a customer product transition. Volume for elastics products in Personal Care increased year-over-year; and
- Slightly lower sales in Surface Protection caused by lower volume and the adverse impact of quality claims, partially offset by higher volume-based selling prices.

EBITDA from ongoing operations in 2018 decreased by \$4.8 million versus 2017 primarily due to:

- Lower contribution to profits from Personal Care, primarily due to lower volume and unfavorable product mix (\$9.3 million), partially offset by volume-based higher selling pricing (\$2.2 million), lower fixed and selling, general and administrative costs (\$1.1 million), the timing of resin cost passthroughs (\$0.7 million), productivity improvements (\$0.3 million) and net favorable impact from the change in U.S. Dollar value of currencies for operations outside of the U.S. (\$0.8 million);
- Lower contribution to profits from Surface Protection, primarily due to lower volumes and unfavorable product mix (\$4.1 million), the adverse impact of quality claims (\$1.3 million), higher fixed and other manufacturing costs (\$1.6 million), higher research and development spending and selling, general and administrative costs (\$0.4 million) and higher freight costs (\$0.5 million), partially offset by volume-based higher selling prices (\$4.4 million); and
- Realized cost savings associated with the North American consolidation of our PE Films manufacturing facilities completed in 2017 (\$2.4 million).

Flexible Packaging Films

A summary of operating results for Flexible Packaging Films is provided below:

(In thousands, except percentages)	Year Ended		Favorable/ (Unfavorable) % Change
	December 31,		
	2018	2017	
Sales volume (lbs)	98,994	89,325	10.8 %
Net sales	\$ 123,830	\$ 108,355	14.3 %
Ongoing operations:			
EBITDA	\$ 11,154	\$ 7,817	42.7 %
Depreciation & amortization	(1,262)	(10,443)	(87.9)%
EBIT*	\$ 9,892	\$ (2,626)	N/A
Capital expenditures	\$ 5,423	\$ 3,619	

* See the table in Item 6 for a reconciliation of this non-GAAP measure to GAAP and additional information.

Net sales in 2018 increased versus 2017 primarily due to higher sales volume and increased selling prices associated with the pass-through of higher resin costs. The higher sales volume was supported by increased production capacity for Brazilian operations resulting from the re-start in June 2018 of a previously idled production line.

Terphane had EBITDA from ongoing operations in 2018 of \$11.2 million versus \$7.8 million in 2017. The resulting favorable change of \$3.3 million for the period was primarily due to:

- A benefit from higher volume (\$5.5 million) and favorable tax incentives (\$1.3 million), partially offset by the unfavorable impact of mix and higher resin costs, net of higher selling prices (\$2.2 million);
- Higher fixed and other manufacturing costs and selling, general and administrative costs, primarily related to higher volume (\$2.0 million);
- Favorable foreign currency translation of Real-denominated operating costs (\$3.2 million), which was offset by a \$1.7 million loss on foreign currency forward contracts that partially hedged Real-denominated operating costs; and
- Unfavorable net foreign currency transaction impact (\$0.6 million) resulting from foreign currency transaction losses of \$0.8 million in 2018 and losses of \$0.2 million in 2017.

Depreciation and amortization expense in 2018 was significantly lower than 2017 due to the non-cash write-down of Terphane's long-lived assets during the fourth quarter of 2017.

During 2019, the Company changed the presentation of plant shutdowns, asset impairments, restructuring and other. The table below for 2017 has been provided to be consistent with the 2019 presentation.

Plant shutdowns, asset impairments, restructurings and other. Pre-tax losses associated with plant shutdowns, asset impairments, restructurings and other items 2017 as detailed below are shown in the EBITDA from ongoing operations table in Note 5 and are included in "Asset impairments and costs associated with exit and disposal activities, net of adjustments" in the consolidated statements of income, unless otherwise noted. A discussion of unrealized gains and losses on investments can also be found in Note 4 and additional information on restructuring costs can be found in Note 17.

(\$ in millions)	Q1	Q2	Q3	Q4	2017
Aluminum Extrusions:					
Losses associated with plant shutdowns, asset impairments and restructurings:					
Other restructuring costs - severance	\$ —	\$ —	\$ —	\$ 0.1	\$ 0.1
Kentland shutdown - settlement of claims and other costs	—	—	0.2	—	0.2
Total	—	—	0.2	0.1	0.3
(Gains) losses from sale of assets, investment writedowns and other items:					
Aluminum Extrusions:					
Estimated excess costs associated with ramp-up of new product offerings and additional expenses related to strategic capacity expansion projects ¹	0.3	0.1	0.1	—	0.5
(Gains) losses related to the explosion at the Newnan, Georgia facility in June 2016:					
Gain on involuntary conversion of damaged plant ³	—	—	—	(5.3)	(5.3)
Other excess production costs and adjustments ¹	0.3	(0.9)	—	0.2	(0.4)
Non-reimbursable legal and consulting fees ²	0.1	—	—	—	0.1
(Gains) losses related to the acquisition and integration of Futura:					
Fair valuation of earnout provision ³	—	(0.7)	—	—	(0.7)
Acquisition costs ²	1.5	—	—	—	1.5
Integration costs ²	0.1	—	—	—	0.1
Accounting adjustments upon inventory revaluation ¹	1.7	—	—	—	1.7
Environmental charges Newnan, Georgia and Carthage, Tennessee plants ¹	0.4	—	—	1.5	1.9
Subtotal for Aluminum Extrusions	4.4	(1.5)	0.1	(3.6)	(0.6)
Total for Aluminum Extrusions	\$ 4.4	\$ (1.5)	\$ 0.3	\$ (3.5)	\$ (0.3)
PE Films:					
(Gains) losses associated with plant shutdowns, asset impairments and restructurings:					
Lake Zurich plant downsizing and restructuring:					
Severance & employee-related expenses	\$ 0.2	\$ (0.3)	\$ —	\$ —	\$ (0.1)
Accelerated depreciation ¹	0.2	0.1	—	—	0.3
Other exit & disposal costs	0.1	—	—	—	0.1
Other costs related to the downsizing ¹	0.2	0.2	0.1	—	0.5
Other restructuring costs - severance	—	—	0.1	0.1	0.2
Asset impairments at the Hungary production facility	—	—	—	0.3	0.3
Subtotal for PE Films	0.7	—	0.2	0.4	1.3
Losses from sale of assets, investment writedowns and other items:					
Estimated excess costs associated with ramp-up of new product offerings and additional expenses related to strategic capacity expansion projects ¹	1.5	0.9	0.6	0.6	3.6
Total for PE Films	\$ 2.2	\$ 0.9	\$ 0.8	\$ 1.0	\$ 4.9
Flexible Packaging:					
(Gains) losses from sale of assets, investment writedowns and other items:					
Impairment of assets	\$ —	\$ —	\$ —	\$ 101.3	\$ 101.3
Terphane acquisition escrow payout gain ³	—	(11.9)	—	—	(11.9)
Subtotal for Flexible Packaging	\$ —	\$ (11.9)	\$ —	\$ 101.3	\$ 89.4

Corporate:					
Severance	0.3	—	—	0.1	\$ 0.4
Professional fees associated with: Terphane’s Limitada worthless stock deduction; and the impairment of assets of Flexible Packaging Films ²	—	—	—	0.4	\$ 0.4
Business development projects ²	0.3	0.6	0.2	1.3	\$ 2.4
Environmental costs not associated with a business unit ²	—	—	—	0.8	\$ 0.8
Total for Corporate	\$ 0.6	\$ 0.6	\$ 0.2	\$ 2.6	\$ 4.0

1. Included in “Cost of goods sold” in the consolidated statements of income.

2. Included in “Selling, general and administrative” in the consolidated statements of income.

3. Included in “Other income (expense), net” in the consolidated statements of income.

Financial Condition

Assets and Liabilities

Tredegar’s management continues to focus on working capital management. Measures such as days sales outstanding (“DSO”), days inventory outstanding (“DIO”) and days payables outstanding (“DPO”) are used by the Company to evaluate changes in working capital. Significant changes in assets and liabilities from December 31, 2018 to December 31, 2019 are summarized below:

- Accounts and other receivables decreased \$17.2 million (13.8%).
 - Accounts and other receivables in Aluminum Extrusions decreased by \$11.6 million primarily due to lower sales. DSO (computed using trailing 12 months net sales and a rolling 12-month average of accounts and other receivables balances) was approximately 48.5 days in 2019 and 44.6 days in 2018.
 - Accounts and other receivables in PE Films decreased by \$7.0 million due mainly to lower net sales for Personal Care products. DSO was approximately 44.0 days in 2019 and 43.2 days in 2018.
 - Accounts and other receivables in Flexible Packaging Films increased by \$1.5 million primarily due to higher sales. DSO was approximately 37.7 days in 2019 and 43.7 days in 2018.
- Inventories decreased \$12.4 million (13.3%).
 - Inventories in Aluminum Extrusions decreased by \$5.4 million primarily due to a decrease in raw material prices and reduced purchases of inventory in light of lower sales. DIO (computed using trailing 12 months costs of goods sold calculated on a first in, first out basis and a rolling 12-month average of inventory balances calculated on the first-in, first-out basis) was approximately 38.6 days in 2019 and 33.5 days in 2018.
 - Inventories in PE Films decreased by \$2.1 million primarily due to lower sales and the timing of raw material purchases. DIO was approximately 55.7 days in 2019 and 54.9 days in 2018.
 - Inventories in Flexible Packaging Films decreased by \$5.0 million primarily due to a reduction of finished goods on hand and an overall reduction in raw material levels. DIO was approximately 94.3 days in 2019 and 77.9 days in 2018.
- Net property, plant and equipment increased by \$14.5 million (6.4%) primarily due to capital expenditures of \$50.9 million, offset by depreciation of \$30.7 million and the disposal of fixed assets (\$2.1 million decrease).
- Identifiable intangible assets decreased by \$13.7 million (37.6%) primarily due to amortization expense of \$13.6 million, including \$10.0 million of accelerated amortization of trade names associated with the Bonnell Aluminum rebranding initiative. For information on the rebranding initiative, see Note 8.
- Accounts payable decreased by \$9.1 million (8.1%).
 - Accounts payable in Aluminum Extrusions decreased by \$6.5 million, primarily due to lower volume, a decrease in metal prices and the normal volatility associated with the timing of payments. DPO (computed using trailing 12 months costs of goods sold calculated on a first in, first out basis and a rolling 12-month average of accounts payable balances) was approximately 49.9 days in 2019 and 49.7 days in 2018.
 - Accounts payable in PE Films decreased by \$0.9 million primarily due to the normal volatility associated with the timing of payments. DPO was approximately 44.9 days in 2019 and 43.7 days in 2018.

- Accounts payable in Flexible Packaging Films decreased by \$1.3 million, primarily due to lower inventory levels and the normal volatility associated with the timing of payments. DPO was approximately 55.2 days in 2019 and 51.9 days in 2018.
- Accrued expenses increased by \$3.3 million (7.8%) from December 31, 2018 due to normal fluctuations in the accrual accounts.
- Net noncurrent deferred income tax assets in excess of noncurrent deferred income tax liabilities decreased by \$1.3 million primarily due to numerous changes between years in the balance of the components shown in the December 31, 2019 and 2018 schedule of deferred income tax assets and liabilities provided in Note 16. The Company had a current income tax receivable of \$4.1 million at December 31, 2019 compared to a current income tax receivable of \$6.8 million at December 31, 2018. The change is primarily due to timing of tax payments and refunds from net operating losses and tax credits carried back to prior years.

On June 28, 2019, Tredegar entered into a \$500 million five-year, secured revolving credit agreement (“revolving credit agreement”), with an option to increase that amount by \$100 million. The revolving credit agreement amends and restates the Company’s previous \$400 million five-year agreement that was due to expire on March 1, 2021. Net capitalization and indebtedness as defined under the revolving credit agreement as of December 31, 2019 were as follows:

Net Capitalization and Indebtedness as of December 31, 2019	
(In thousands)	
Net capitalization:	
Cash and cash equivalents	\$ 31,422
Debt:	
Revolving credit agreement	42,000
Other debt	—
Total debt	42,000
Debt net of cash and cash equivalents	10,578
Shareholders’ equity	376,749
Net capitalization	\$ 387,327
Indebtedness as defined in revolving credit agreement:	
Total debt	\$ 42,000
Other	—
Indebtedness	\$ 42,000

The credit spread and commitment fees charged on the unused amount under our revolving credit agreement at various indebtedness-to-adjusted EBITDA levels are as follows:

Pricing Under Revolving Credit Agreement (Basis Points)		
Indebtedness-to-Adjusted EBITDA Ratio	Credit Spread Over LIBOR	Commitment Fee
> 3.5x but <= 4.0x	200.0	40
> 3.0x but <= 3.5x	187.5	35
> 2.0x but <= 3.0x	175.0	30
> 1.0x but <= 2.0x	162.5	25
<= 1.0x	150.0	20

At December 31, 2019, the interest rate on debt under the revolving credit agreement existing at that date was priced at one-month LIBOR plus the applicable credit spread of 150 basis points. Under the revolving credit agreement, borrowings are permitted up to \$500 million, and approximately \$370 million was available to borrow at December 31, 2019, based upon the most restrictive covenant within the revolving credit agreement.

As of December 31, 2019, Tredegar was in compliance with all financial covenants outlined in its revolving credit agreement. Noncompliance with any of the debt covenants may have a material adverse effect on financial condition or liquidity in the event such noncompliance cannot be cured or should the Company be unable to obtain a waiver from the

lenders. Renegotiation of the covenant(s) through an amendment to the revolving credit agreement may effectively cure the noncompliance, but may have an effect on financial condition or liquidity depending upon how the amended covenant is renegotiated.

The computations of adjusted EBITDA, the leverage ratio and interest coverage ratio as defined in the revolving credit agreement are presented below along with the related most restrictive covenants. Adjusted EBITDA as defined in the revolving credit agreement is not intended to represent net income or cash flow from operations as defined by GAAP and should not be considered as either an alternative to net income or to cash flow.

Computations of Adjusted EBITDA, Leverage Ratio and Interest Coverage Ratio as Defined in the Revolving Credit Agreement Along with Related Most Restrictive Covenants	
As of and for the Twelve Months Ended December 31, 2019 (In thousands)	
Computations of adjusted EBITDA as defined in revolving credit agreement for the twelve months ended December 31, 2019	
Net income	\$ 48,259
Plus:	
After-tax losses related to discontinued operations	—
Total income tax expense for continuing operations	9,913
Interest expense	4,051
Depreciation and amortization expense for continuing operations	44,284
All non-cash losses and expenses, plus cash losses and expenses not to exceed \$10,000, for continuing operations that are classified as unusual, extraordinary or which are related to plant shutdowns, asset impairments and/or restructurings (cash-related of \$10,000)	11,116
Charges related to stock option grants and awards accounted for under the fair value-based method	4,209
Losses related to the application of the equity method of accounting	—
Losses related to adjustments in the estimated fair value of assets accounted for under the fair value method of accounting	—
Minus:	
After-tax income related to discontinued operations	—
Total income tax benefits for continuing operations	—
Interest income	(296)
All non-cash gains and income, plus cash gains and income in excess of \$10,000, for continuing operations that are classified as unusual, extraordinary or which are related to plant shutdowns, asset impairments and/or restructurings	—
Income related to changes in estimates for stock option grants and awards accounted for under the fair value-based method	—
Income related to the application of the equity method of accounting	—
Income related to adjustments in the estimated fair value of assets accounted for under the fair value method of accounting	(28,482)
Plus cash dividends declared on investments in an amount not to exceed \$10,000 for such period	10,000
Plus or minus, as applicable, pro forma EBITDA adjustments associated with acquisitions and asset dispositions	—
Adjusted EBITDA as defined in revolving credit agreement	\$ 103,054
Computations of leverage and interest coverage ratios as defined in revolving credit agreement at December 31, 2019:	
Leverage ratio (indebtedness-to-adjusted EBITDA)	.41x
Interest coverage ratio (adjusted EBITDA-to-interest expense)	25.44x
Most restrictive covenants as defined in revolving credit agreement:	
Maximum permitted aggregate amount of dividends that can be paid by Tredegar during the term of the revolving credit agreement (\$100,000 plus 50% of net income generated for each quarter beginning April 1, 2019)	\$ 145,805
Maximum leverage ratio permitted	4.00x
Minimum interest coverage ratio permitted	3.00x

Tredegar is obligated to make future payments under various contracts as set forth below:

(In millions)	Payments Due by Period						
	2020	2021	2022	2023	2024	Remainder	Total
Debt:							
Principal payments	\$ —	\$ —	\$ —	\$ —	\$ 42.0	\$ —	\$ 42.0
Estimated interest expense	1.4	1.4	1.4	1.4	0.7	—	6.3
Estimated contributions required: ⁽¹⁾							
Defined benefit plans	12.3	11.1	14.3	13.2	13.9	29.5	94.3
Other postretirement benefits	0.5	0.5	0.5	0.5	0.5	2.1	4.6
Capital expenditure commitments	2.3	—	—	—	—	—	2.3
Leases ⁽²⁾	4.7	3.6	2.6	2.4	2.4	9.8	25.5
Estimated obligations relating to uncertain tax positions ⁽³⁾	0.1	—	—	—	—	0.8	0.9
Other ⁽⁴⁾	3.7	2.3	0.6	—	—	—	6.6
Total	\$ 25.0	\$ 18.9	\$ 19.4	\$ 17.5	\$ 59.5	\$ 42.2	\$ 182.5

(1) Estimated minimum required contributions for defined benefit plans and benefit payments for other postretirement plans are based on actuarial estimates using current assumptions for discount rates, long-term rate of return on plan assets, rate of compensation increases and health care cost trends. The expected defined benefit plan contribution estimates for 2020 through 2029 were determined under provisions of the Pension Protection Act of 2006 using the preliminary assumptions chosen by Tredegar for the 2020 plan year. Tredegar has determined that it is not practicable to present defined benefit contributions and other postretirement benefit payments beyond 2029.

(2) Contractual lease payments for 2020 include \$0.4 million of short term lease payments and \$0.5 million of variable lease costs.

(3) Amounts for which reasonable estimates about the timing of payments cannot be made are included in the remainder column.

(4) Includes contractual severance and other miscellaneous contractual arrangements.

From time to time, the Company enters into transactions with third parties in connection with the sale of assets or businesses in which it agrees to indemnify the buyers or third parties involved in the transaction, or the sellers or third parties involved in the transaction agree to indemnify Tredegar, for certain liabilities or risks related to the assets or business. Also, in the ordinary course of business, the Company may enter into agreements with third parties for the sale of goods or services that may contain indemnification provisions. In the event that an indemnification claim is asserted, liability for indemnification would be subject to an assessment of the underlying facts and circumstances under the terms of the applicable agreement. Further, any indemnification payments may be limited or barred by a monetary cap, a time limitation, or a deductible or basket. For these reasons, the Company is unable to estimate the maximum potential amount of the potential future liability under the indemnity provisions of these agreements. Tredegar does, however, accrue for losses for any known contingent liability, including those that may arise from indemnification provisions, when future payment is probable and the amount is reasonably estimable. The Company discloses contingent liabilities if the probability of loss is reasonably possible and material.

At December 31, 2019, Tredegar had cash and cash equivalents of \$31.4 million, including funds held in locations outside the U.S. of \$23.0 million.

The Company believes that existing borrowing availability, current cash balances and cash flow from operations will be sufficient to satisfy working capital, capital expenditure and dividend requirements for at least the next twelve months.

Shareholders' Equity

At December 31, 2019, Tredegar had 33,365,039 shares of common stock outstanding and a total market capitalization of \$745.7 million, compared with 33,176,024 shares of common stock outstanding and a total market capitalization of \$526.2 million at December 31, 2018.

Tredegar did not repurchase any shares on the open market in 2019, 2018 or 2017 under its approved share repurchase program.

Cash Flows

The discussion in this section supplements the information presented in the Consolidated statements of cash flows.

Cash provided by operating activities was \$115.9 million in 2019 compared with \$97.8 million in 2018. The increase is primarily due to lower net working capital (accounts receivables, prepaids, accounts payable and accrued expenses) from changing business conditions (\$43.4 million) and a dividend received from kaleo (\$17.6 million), partially offset by income taxes paid in 2019 (\$2.6 million) versus refunds received in 2018 (\$24.0 million), lower EBITDA from ongoing operations by the operating segments (\$9.5 million), and higher corporate costs and cash expenses for plant shutdowns and restructurings (\$8.0 million).

Cash used in investing activities was \$39.9 million in 2019 compared with \$34.1 million in 2018. Cash used in investing activities primarily represents capital expenditures, which were \$50.9 million and \$40.8 million in 2019 and 2018, respectively. Additionally, in the first quarter of 2018, the Company received \$5 million from escrowed funds related to an earnout from the acquisition of Futura, of which \$4.3 million was classified in cash flows for investing activities, while in 2019, the Company received \$10.9 million in proceeds from the sale of the Shanghai facility, which was shut down in 2018.

Net cash flow used in financing activities was \$77.3 million in 2019, primarily due to net repayments under the revolving credit agreement of \$59.5 million and the payment of regular quarterly dividends aggregating for the year to \$15.3 million (\$0.46 per share annually). Cash used in financing activities was \$64.1 million in 2018, including net repayments under the revolving credit agreement of \$50.5 million and regular quarterly dividends aggregating for the year to \$14.6 million (\$0.44 per share annually).

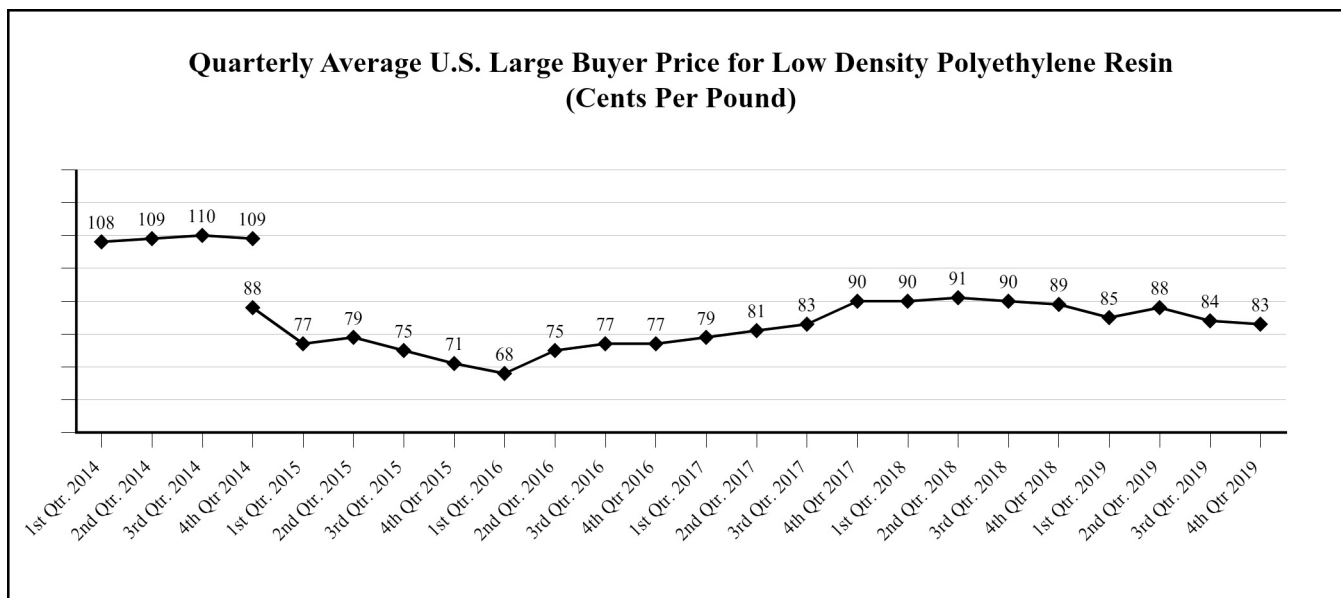
Quantitative and Qualitative Disclosures about Market Risk

Tredegar has exposure to the volatility of interest rates, polyethylene, polypropylene and polyester resin prices, PTA and MEG prices, aluminum ingot and scrap prices, energy prices, foreign currencies and emerging markets. See the *Assets and Liabilities* section above regarding interest rate exposures related to borrowings under the revolving credit agreement.

Changes in polyethylene resin prices, and the timing of those changes, could have a significant impact on profit margins in PE Films. Changes in polyester resin, PTA and MEG prices, and the timing of those changes, could have a significant impact on profit margins in Flexible Packaging Films. Profit margins in Aluminum Extrusions are sensitive to fluctuations in aluminum ingot and scrap prices as well as natural gas prices (natural gas is the principal energy source used to operate its casting furnaces). There is no assurance of the Company's ability to pass through higher raw material and energy costs to its customers.

See the *Executive Summary* and the *Results of Continuing Operations* sections above for discussion regarding the impact of the lag in the pass-through of resin price changes.

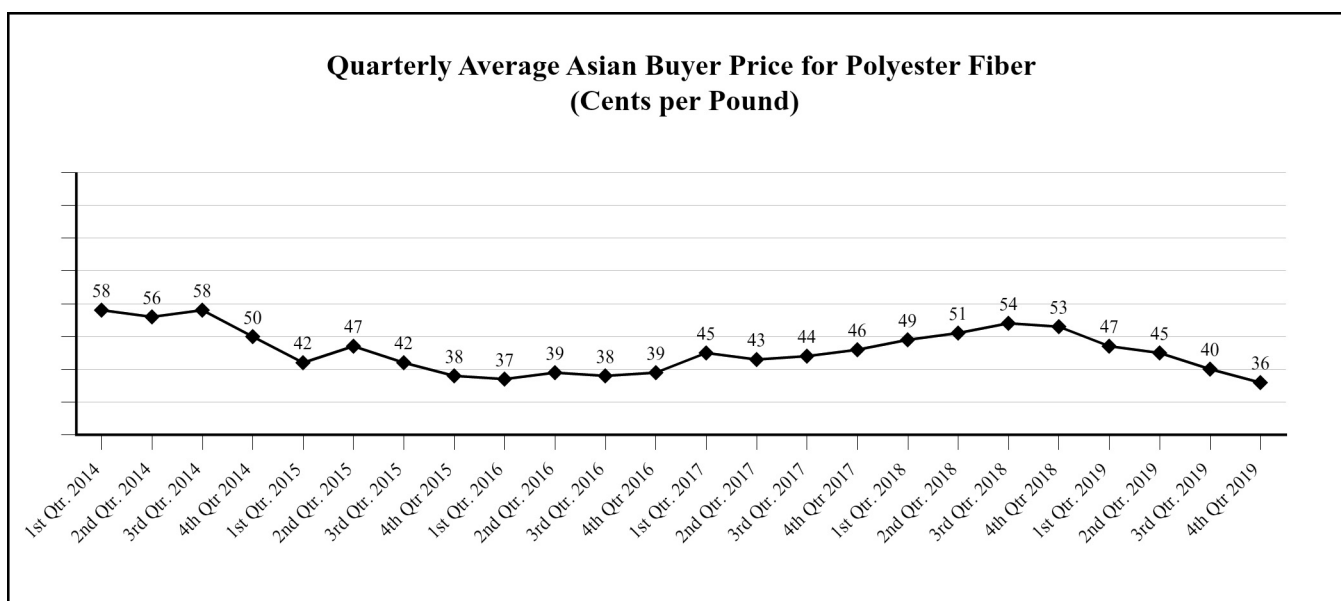
The volatility of average quarterly prices of low density polyethylene resin in the U.S. (a primary raw material for PE Films products) is shown in the chart below:



Source: Quarterly averages computed by Tredegar using monthly data provided by IHS, Inc. In January 2015, IHS reflected a 21 cents per pound non-market adjustment based on their estimate of the growth of discounts in prior periods. The 4th quarter 2014 average rate of \$1.09 per pound is shown on a pro forma basis as if the non-market adjustment was made in the fourth quarter of 2014.

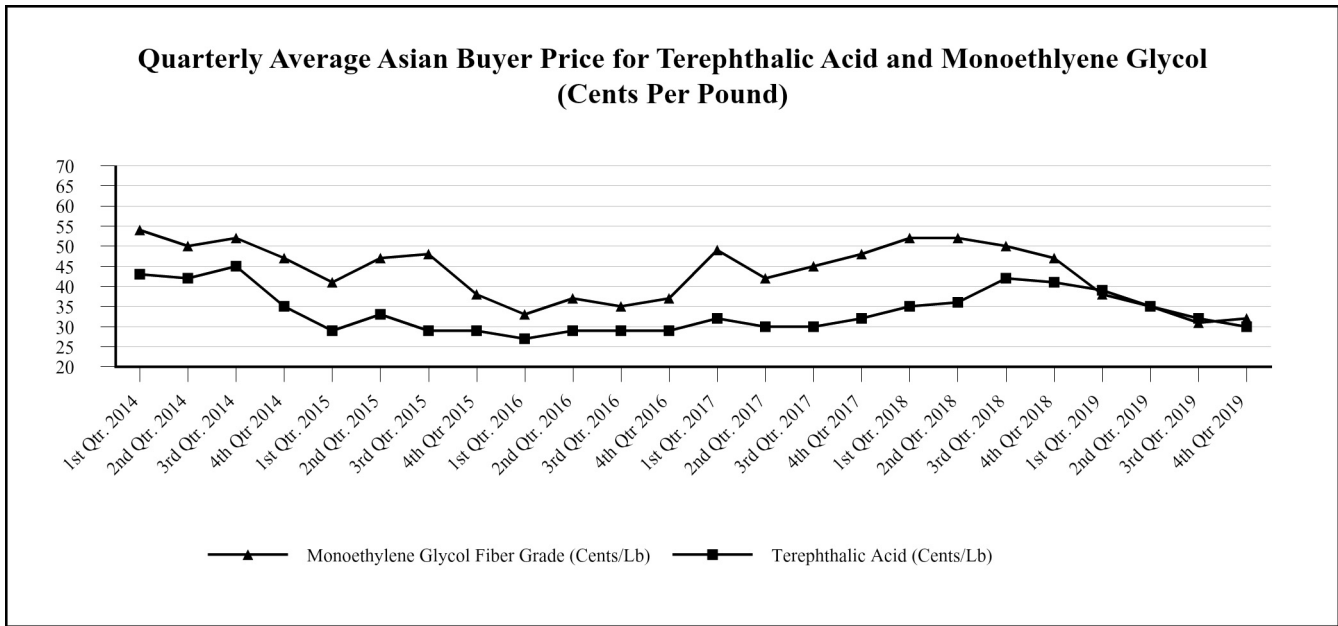
Polyethylene resin prices in Europe, Asia and South America have exhibited similar long-term trends. The price of resin is driven by several factors, including supply and demand and the price of oil, ethylene and natural gas. To address fluctuating resin prices, PE Films has index-based pass-through raw material cost agreements for the majority of its business. However, under certain agreements, changes in resin prices are not passed through for an average period of 90 days (see the *Executive Summary* and the *Results of Continuing Operations* sections above for more information). Pricing on the remainder of the business is based upon raw material costs and supply/demand dynamics within the markets in which the Company operates.

Polyester resins, MEG and PTA used by Flexible Packaging Films in Brazil are primarily purchased domestically, with other sources available, mostly from Asia and the U.S. Given the nature of these products as commodities, pricing is derived from Asian pricing indexes. The volatility of the average quarterly prices for polyester fibers in Asia, which is representative of polyester resin (a primary raw material for polyester film products) prices, is shown in the chart below:



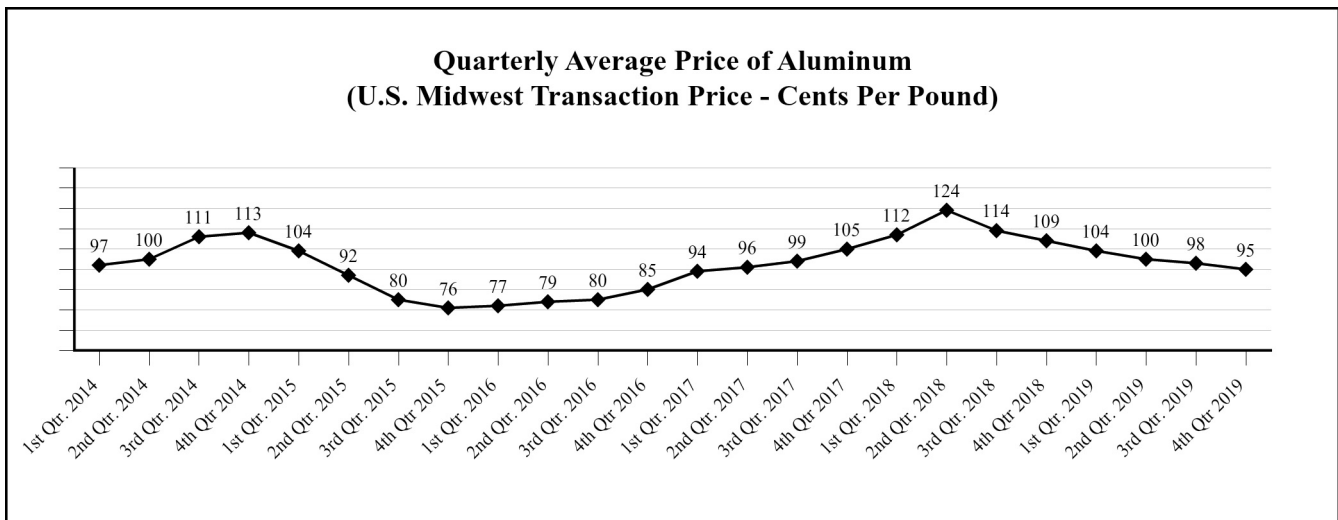
Source: Quarterly averages computed by Tredegar using monthly data from CMAI Global Index data.

The volatility of average quarterly prices of PTA and MEG in Asia (raw materials used in the production of polyester resins produced by Flexible Packaging Films) is shown in the chart below:



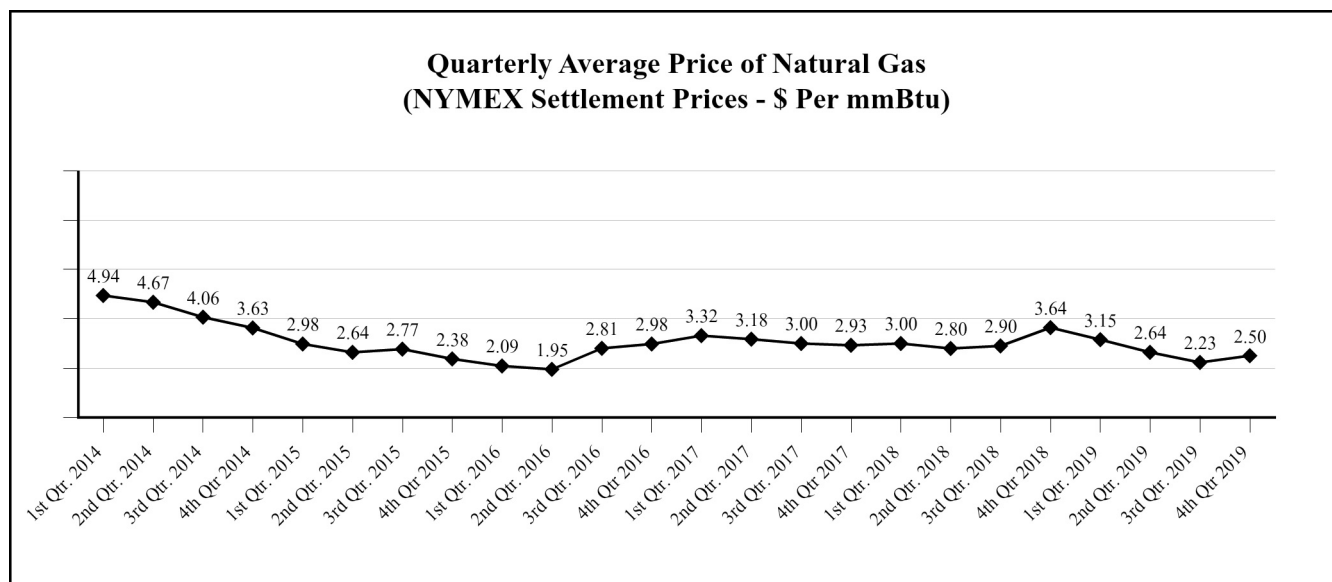
Source: Quarterly averages computed by Tredegar using monthly data from CMAI Global Index data.

In the normal course of business, Aluminum Extrusions enters into fixed-price forward sales contracts with certain customers for the sale of fixed quantities of aluminum extrusions at scheduled intervals. In order to hedge its exposure to aluminum price volatility (see the chart below) under these fixed-price arrangements, which generally have a duration of not more than 12 months, the Company enters into a combination of forward purchase commitments and futures contracts to acquire or hedge aluminum, based on the scheduled deliveries. See Note 9 for more information. The volatility of quarterly average aluminum prices is shown in the chart below:



Source: Quarterly averages computed by Tredegar using daily Midwest average prices provided by Platts.

The volatility of quarterly average natural gas prices is shown in the chart below:



Source: Quarterly averages computed by Tredegar using monthly NYMEX settlement prices.

Tredegar sells to customers in foreign markets through its foreign operations and through exports from U.S. plants. The percentage of sales and total assets for manufacturing operations related to foreign markets for 2019, 2018 and 2017 are as follows:

Tredegar Corporation - Continuing Operations									
Percentage of Net Sales and Total Assets Related to Foreign Markets									
	2019			2018			2017		
	% of Total Net Sales *		% Total Assets - Foreign Operations *	% of Total Net Sales *		% Total Assets - Foreign Operations *	% of Total Net Sales *		% Total Assets - Foreign Operations *
	Exports From U.S.	Foreign Operations		Exports From U.S.	Foreign Operations		Exports From U.S.	Foreign Operations	
Canada	2	—	—	5	—	—	5	—	—
Europe	1	7	5	1	8	6	1	9	6
Latin America	1	12	8	1	10	8	2	9	7
Asia	9	1	3	7	1	4	9	2	5
Total % exposure to foreign markets	13	20	16	14	19	18	17	20	18

* The percentages for foreign markets are relative to Tredegar's consolidated net sales and total assets.

Tredegar attempts to match the pricing and cost of its products in the same currency and generally views the volatility of foreign currencies and emerging markets, and the corresponding impact on earnings and cash flow, as part of the overall risk of operating in a global environment (for additional information, see trends for the Euro, Brazilian Real and Chinese Yuan in the charts on the following page). Exports from the U.S. are generally denominated in U.S. Dollars. The Company's foreign currency exposure on income from continuing foreign operations relates to the Euro, the Chinese Yuan, the Hungarian Forint, the Brazilian Real and the Indian Rupee.

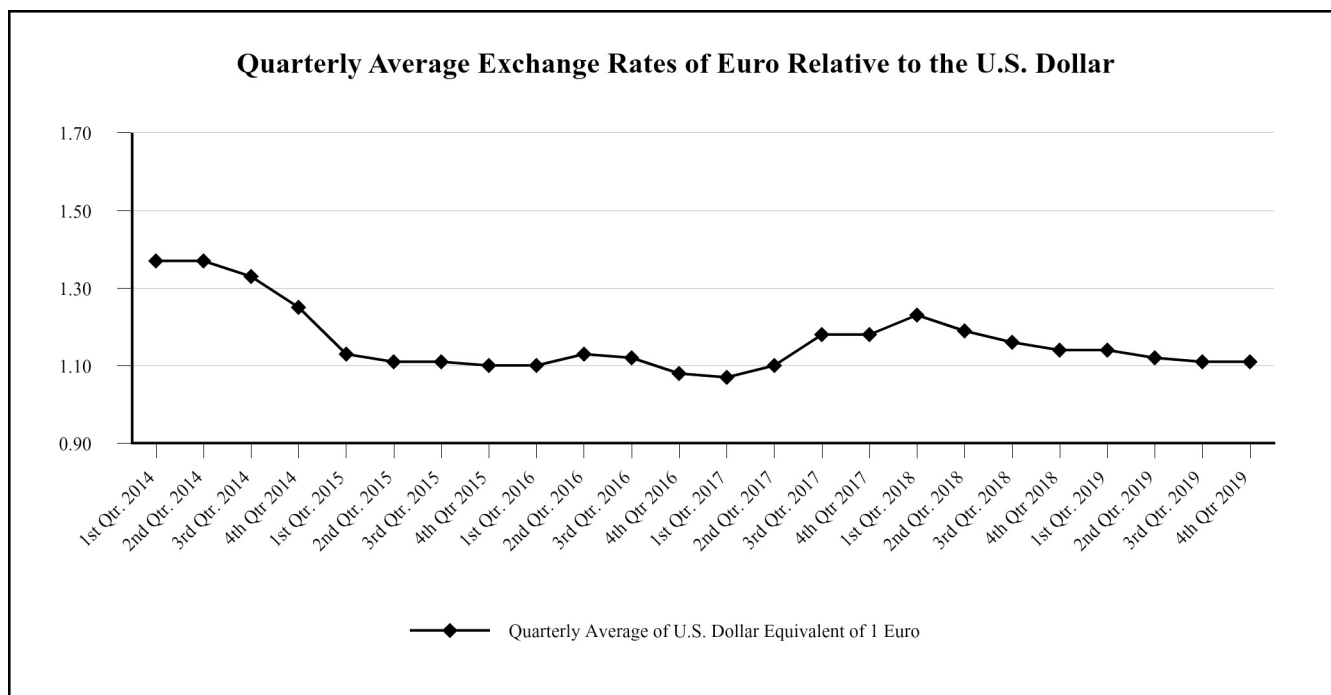
PE Films is generally able to match the currency of its sales and costs for its product lines. For flexible packaging films Terphane produced in Brazil, selling prices and key raw material costs are principally determined in U.S. Dollars and are impacted by local economic conditions. Competition in Brazil, Terphane's primary market, has been exacerbated by global overcapacity in the polyester industry generally, particularly in Latin America. These factors have resulted in significant competitive pricing pressures and U.S. Dollar equivalent margin compression. Moreover, variable conversion, fixed conversion and sales, general and administrative costs for operations in Brazil have been adversely impacted by inflation in Brazil that is higher than in the U.S. Terphane is exposed to additional foreign exchange translation risk (its functional currency is the Brazilian Real) because almost 90% of its sales in Latin America are quoted or priced in U.S. Dollars, while a

large majority of its Brazilian costs are quoted or priced in Brazilian Real. This mismatch, together with a variety of economic variables impacting currency exchange rates, causes volatility that could negatively or positively impact EBITDA from ongoing operations for Terphane.

The Company estimates that the net mismatch translation exposure between Terphane Ltda.'s U.S. Dollar quoted or priced sales and underlying Brazilian Real quoted or priced operating costs (excluding depreciation and amortization) is annual net costs of R\$137 million. Terphane Ltda. has outstanding foreign exchange average forward rate contracts to purchase Brazilian Real and sell U.S. Dollars to hedge its exposure. See Note 9 for more information on outstanding hedging contracts and this hedging program.

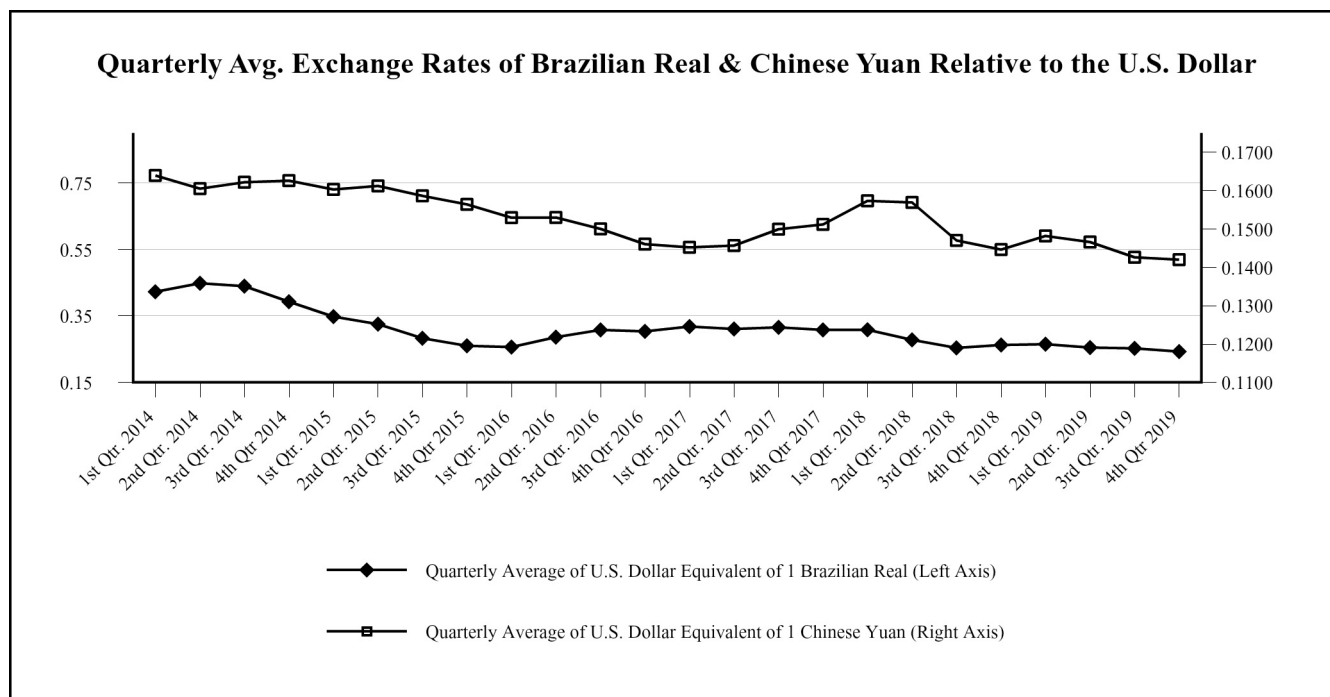
Tredegear estimates that the change in the value of foreign currencies relative to the U.S. Dollar on PE Films had a favorable impact on EBITDA from ongoing operations in PE Films of \$0.7 million in 2019 compared to 2018 and an unfavorable impact on EBITDA from ongoing operations of \$0.8 million in 2018 compared with 2017.

Trends for the Euro are shown in the chart below:



Source: Quarterly averages computed by Tredegear using daily closing data provided by Bloomberg.

Trends for the Brazilian Real and Chinese Yuan are shown in the chart below:



Source: Quarterly averages computed by Tredegar using daily closing data provided by Bloomberg.

Item 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

See discussion of *Quantitative and Qualitative Disclosures about Market Risk* in Management’s Discussion and Analysis of Financial Condition and Results of Operations.

Item 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

See the *Index to Financial Statements and Supplementary Data* for references to the report of the independent registered public accounting firm, the consolidated financial statements and selected quarterly financial data.

Item 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE

None.

Item 9A. CONTROLS AND PROCEDURES

On November 1, 2018, the Company filed a Current Report on Form 8-K (the “November Form 8-K”) to disclose deficiencies in internal control over financial reporting. For further information, see the November Form 8-K and Item 4. “Controls and Procedures” of the Company’s Quarterly Report on Form 10-Q for the quarterly period ended September 30, 2018 (the “2018 Third Quarter 10-Q”).

Evaluation of Disclosure Controls and Procedures as of December 31, 2019

In connection with the preparation of this Form 10-K, pursuant to Rule 13a-15(b) under the Exchange Act, the Company carried out an evaluation, with the participation of its management, including its Chief Executive Officer (principal executive officer) and Chief Financial Officer (principal financial officer), of the effectiveness of disclosure controls and procedures (as defined under Rule 13a-15(e) or 15d-15(e) under the Exchange Act) as of December 31, 2019.

Based on this evaluation, the Company's Chief Executive Officer and Chief Financial Officer concluded that, because of the material weaknesses in internal control over financial reporting discussed below, the Company's disclosure controls and procedures were not effective as of December 31, 2019, to ensure that information required to be disclosed by the Company in the reports that it files or submits under the Exchange Act, is recorded, processed, summarized and reported, within the time periods specified in the SEC's rules and forms, and that such information is accumulated and communicated to management, including the Chief Executive Officer and Chief Financial Officer, as appropriate, to allow timely decisions regarding required disclosure.

Management's Report on Internal Control Over Financial Reporting as of December 31, 2019

The Company's management is responsible for establishing and maintaining adequate internal control over financial reporting, as such term is defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act. The Company's internal control over financial reporting is a process designed by or under the supervision of the Company's Chief Executive Officer and Chief Financial Officer, and overseen by the Board of Directors, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of published financial statements for external purposes in accordance with GAAP and includes policies and procedures that:

- Pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the Company's assets;
- Provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with GAAP, and that the Company's receipts and expenditures are being made only in accordance with the authorization of its management and directors; and
- Provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of the Company's assets that could have a material effect on the consolidated financial statements.

Because of its inherent limitations, internal control over financial reporting is not intended to provide absolute assurance that a misstatement of the Company's consolidated financial statements would be prevented or detected. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

A material weakness is a deficiency, or combination of deficiencies, in internal control over financial reporting, such that there is a reasonable possibility that a material misstatement of the annual or interim financial statements will not be prevented or detected on a timely basis.

Management conducted an evaluation of the effectiveness of the Company's internal control over financial reporting using the criteria in Internal Control - Integrated Framework 2013 issued by the Committee of Sponsoring Organizations of the Treadway Commission (the "2013 COSO Framework"). As a result of this evaluation, management concluded that the Company's internal control over financial reporting was not effective as of December 31, 2019, because of the material weaknesses in internal control over financial reporting discussed below.

- **Control Environment**: The Company did not have a sufficient number of trained resources with assigned responsibility and accountability for the design, operation and documentation of internal control over financial reporting in accordance with the 2013 COSO Framework.
- **Risk Assessment**: The Company did not have an effective risk assessment process that defined clear financial reporting objectives and evaluated risks, including fraud risks, and risks resulting from changes in the external environment and business operations, at a sufficient level of detail to identify all relevant risks of material misstatement across the entity.
- **Information and Communication**: The Company did not have an effective information and communication process that identified and assessed the source of and controls necessary to ensure the reliability of information used in financial reporting and that communicates relevant information about roles and responsibilities for internal control over financial reporting.
- **Monitoring Activities**: The Company did not have effective monitoring activities to assess the operation of internal control over financial reporting, including the continued appropriateness of control design and level of documentation maintained to support control effectiveness.

- **Control Activities:** As a consequence of the material weaknesses described above, internal control deficiencies related to the design and operation of process-level controls and general information technology controls were determined to be pervasive throughout the Company's financial reporting processes.

While these material weaknesses did not result in material misstatements of the Company's financial statements as of and for the year ended December 31, 2019, these material weaknesses create a reasonable possibility that a material misstatement of account balances or disclosures in annual or interim consolidated financial statements may not be prevented or detected in a timely manner. Accordingly, the Company concluded that the deficiencies represent material weaknesses in its internal control over financial reporting and its internal control over financial reporting was not effective as of December 31, 2019.

The Company's independent registered public accounting firm, KPMG LLP, which audited the 2019 consolidated financial statements included in this Form 10-K, has expressed an adverse opinion on the operating effectiveness of the Company's internal control over financial reporting. KPMG LLP's report appears on pages 50-51 of this Form 10-K.

Remediation Plan

The Company's remediation efforts are ongoing and it will continue its initiatives to implement and document policies and procedures, and strengthen the Company's internal control environment. Remediation of the identified material weaknesses and strengthening the Company's internal control environment will require a substantial effort throughout 2020 and, we anticipate, the first quarter of 2021. The material weaknesses cannot be considered completely remediated until the applicable controls have operated for a sufficient period of time and management has concluded, through testing, that these controls are operating effectively. In addition, we anticipate that certain controls the Company plans to implement in 2020 will not have operated for a sufficient period of time in 2020 to test their operating effectiveness as part of the Company's evaluation of internal control over financial reporting as of December 31, 2020.

To remediate the material weaknesses described above, the Company is pursuing the six remediation steps identified in the 2018 Third Quarter 10-Q. To date, the Company has accomplished the following as part of those remediation steps:

- a. Identified material processes and significant locations for the purpose of identifying risks of material misstatement to the Company's financial statements,
- b. Conducted interviews with relevant parties to ensure our understanding of the activities involved in the recording of transactions within material processes,
- c. Substantially completed a comprehensive review and update, as necessary, of the documentation of relevant processes with respect to the Company's internal control over financial reporting, and
- d. Documented significant elements of a comprehensive risk assessment and internal control gap analysis and commenced the validation thereof with key stakeholders.

The Company continues to work with its outside consultant, an internationally recognized accounting firm, to assist in completing the remediation plan. The Company believes that its remediation plan will be sufficient to remediate the identified material weaknesses and strengthen its internal control over financial reporting. As the Company continues to evaluate, and works to improve, its internal control over financial reporting, management may determine that additional measures to address control deficiencies or modifications to the remediation plan are necessary. The Company cannot assure you, however, when it will remediate such weaknesses, nor can it be certain whether additional actions will be required or the costs of any such actions. Moreover, the Company cannot assure you that additional material weaknesses will not arise in the future.

Changes in Internal Control Over Financial Reporting

The Company is in the process of implementing certain changes in its internal controls to remediate the material weaknesses described above. The implementation of the plan began in the second quarter of 2019. Except as noted above with respect to the implementation of the remediation plan, there has been no change in the Company's internal control over financial reporting during the quarter ended December 31, 2019, that has materially affected, or is reasonably likely to materially affect, its internal control over financial reporting.

Item 9B. OTHER INFORMATION

None.

PART III

Item 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

The information concerning directors and persons nominated to become directors of Tredegar to be included in the Proxy Statement under the headings “Proposal 1: Election of Directors” and “Tredegar’s Board of Directors” is incorporated herein by reference.

The information concerning corporate governance to be included in the Proxy Statement under the headings “Board Meetings, Meetings of Non-Management Directors and the Board Committees” and “Corporate Governance” is incorporated herein by reference.

The information to be included in the Proxy Statement under the heading “Section 16(a) Beneficial Ownership Reporting Compliance” is incorporated herein by reference.

Set forth below are the names, ages and titles of the Company’s executive officers:

<u>Name</u>	<u>Age</u>	<u>Title</u>
John M. Steitz	61	President and Chief Executive Officer
D. Andrew Edwards	61	Vice President and Chief Financial Officer
Michael J. Schewel	66	Vice President, General Counsel and Corporate Secretary

John M. Steitz. Mr. Steitz was elected President and Chief Executive Officer effective March 19, 2019. He previously served as President and Chief Executive Officer of Addivant Corporation, a leading global supplier of antioxidants, intermediates, inhibitors, modifiers, UV stabilizers and other additives to the plastic and rubber industries, from March 2015 until January 2019, as President and Chief Operating Officer of PQ Corporation, a leading worldwide producer of specialty inorganic performance chemicals and catalysts, from October 2013 until March 2015, as President and Chief Executive Officer of Avantor Performance Materials, a global supplier of ultra-high-purity life sciences materials with strict regulatory and performance specifications, from September 2012 until September 2013, as President and Chief Operating Officer of Albemarle from March 2012 until August 2012, and as Chief Operating Officer and Executive Vice President of Albemarle from April 2007 until March 2012.

D. Andrew Edwards. Mr. Edwards was elected Vice President and Chief Financial Officer effective July 20, 2015. He previously served as the Chief Financial Officer of United Sporting Companies, Inc., a wholesale distributor of outdoor sporting goods, from February 2013 until July 2015 and as Vice President, Controller and Chief Accounting Officer of Owens & Minor, Inc., a distributor of acute medical products, from April 2010 to February 2013 and as Acting Chief Financial Officer of Owens & Minor, Inc. from March 2012 to February 2013. Mr. Edwards also served as Vice President, Finance, of Owens & Minor, Inc. from December 2009 until April 2010. Mr. Edwards previously served as the Company’s Vice President, Chief Financial Officer and Treasurer from August 2003 to December 2009 and as the Company’s Vice President, Finance from November 1998 to August 2003. Mr. Edwards also served as the Company’s Treasurer from May 1997 to December 2009 and as the Company’s Controller from October 1992 until July 2000.

Michael J. Schewel. Mr. Schewel was elected Vice President, General Counsel and Corporate Secretary effective May 9, 2016. He was previously a partner with the law firm of McGuire Woods, LLP from 1986 until May 2016, except for four years from 2002 until 2006 when he served as Secretary of Commerce and Trade for the Commonwealth of Virginia.

Tredegar has adopted a Code of Conduct that applies to all of its directors, officers and employees (including its chief executive officer, chief financial officer and principal accounting officer) and has posted the Code of Conduct on its website. All amendments to or waivers from any provision of the Company’s Code of Conduct applicable to the chief executive officer, chief financial officer and principal accounting officer will be disclosed on the Company’s website. The Company’s internet address is www.tredegar.com.

Item 11. EXECUTIVE COMPENSATION

The information to be included in the Proxy Statement under the headings “Compensation of Directors,” “Board Meetings, Meetings of Non-Management Directors and Board Committees - Executive Compensation Committee Interlocks and Insider Participation,” “Compensation Discussion and Analysis,” “Executive Compensation Committee Report” and “Compensation of Executive Officers” is incorporated herein by reference.

Item 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS

The information to be included in the Proxy Statement under the heading “Stock Ownership” is incorporated herein by reference. The following table summarizes information with respect to equity compensation plans under which securities are authorized for issuance as of December 31, 2019.

	Column (a)	Column (b)	Column (c)
Plan Category	Number of Securities to be Issued Upon Exercise of Outstanding Options, Warrants and Rights*	Weighted-Average Exercise Price of Outstanding Options, Warrants and Rights	Number of Securities Remaining Available for Future Issuance Under Equity Compensation Plans, Excluding Securities Reflected in Column (a)
Equity compensation plans approved by security holders	2,062,501	\$ 19.13	954,454
Equity compensation plans not approved by security holders	—	—	—
Total	2,062,501	\$ 19.13	954,454

* Includes performance stock units that give the holder the right to receive shares of Tredegar common stock upon the satisfaction of certain performance criteria.

Item 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE

The information to be included in the Proxy Statement under the headings “Certain Relationships and Related Transactions,” “Tredegar’s Board of Directors” and “Board Meetings, Meetings of Non-Management Directors and Board Committees” is incorporated herein by reference.

Item 14. PRINCIPAL ACCOUNTING FEES AND SERVICES

The following is incorporated herein by reference:

- Information on accounting fees and services to be included in the Proxy Statement under the heading “Audit and Non-Audit Fees;” and
- Information on the Audit Committee’s procedures for pre-approving certain audit and non-audit services to be included in the Proxy Statement under the heading “Board Meetings, Meetings of Non-Management Directors and Board Committees—Audit Committee Matters.”

PART IV

Item 15. EXHIBITS AND FINANCIAL STATEMENT SCHEDULES

(a) List of documents filed as a part of the report:

(1) Financial statements:

Tredegar Corporation
Index to Financial Statements and Supplementary Data

	Page
Auditors' Opinions:	
Reports of Independent Registered Public Accounting Firm - KPMG LLP	49
Report of Independent Registered Public Accounting Firm - PricewaterhouseCoopers LLP	52
Financial Statements:	
Consolidated Balance Sheets as of December 31, 2019 and 2018	53
Consolidated Statements of Income for the Years Ended December 31, 2019, 2018 and 2017	54
Consolidated Statements of Comprehensive Income (Loss) for the Years Ended December 31, 2019, 2018 and 2017	55
Consolidated Statements of Cash Flows for the Years Ended December 31, 2019, 2018 and 2017	56
Consolidated Statements of Shareholders' Equity for the Years Ended December 31, 2019, 2018 and 2017	57
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(2) Financial statement schedules:

None

(3) Exhibits:

See Exhibit Index on pages: 96-98

Report of Independent Registered Public Accounting Firm

To the Shareholders and Board of Directors
Tredegar Corporation:

Opinion on the Consolidated Financial Statements

We have audited the accompanying consolidated balance sheets of Tredegar Corporation and subsidiaries (the Company) as of December 31, 2019 and 2018, the related consolidated statements of income, comprehensive income (loss), cash flows, and shareholders' equity for each of the years in the two-year period ended December 31, 2019, and the related notes (collectively, the consolidated financial statements). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2019 and 2018, and the results of its operations and its cash flows for each of the years in the two-year period ended December 31, 2019, in conformity with U.S. generally accepted accounting principles.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Company's internal control over financial reporting as of December 31, 2019, based on criteria established in *Internal Control - Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission, and our report dated March 16, 2020 expressed an adverse opinion on the effectiveness of the Company's internal control over financial reporting.

Change in Accounting Principles

As discussed in Note 1 to the consolidated financial statements, the Company has changed its method of accounting for leases as of January 1, 2019 due to the adoption of Accounting Standards Codification (ASC) Topic 842, *Leases* and revenue as of January 1, 2018 due to the adoption of ASC Topic 606, *Revenue from Contracts with Customers*.

Basis for Opinion

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

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. We believe that our audits provide a reasonable basis for our opinion.

/s/ KPMG LLP

We have served as the Company's auditor since 2018.

Richmond, Virginia
March 16, 2020

Report of Independent Registered Public Accounting Firm

To the Shareholders and Board of Directors
Tredegar Corporation:

Opinion on Internal Control Over Financial Reporting

We have audited Tredegar Corporation and subsidiaries' (the Company) internal control over financial reporting as of December 31, 2019, based on criteria established in *Internal Control - Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission. In our opinion, because of the effect of the material weaknesses, described below, on the achievement of the objectives of the control criteria, the Company has not maintained effective internal control over financial reporting as of December 31, 2019, based on criteria established in *Internal Control - Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated balance sheets of the Company as of December 31, 2019 and 2018, the related consolidated statements of income, comprehensive income (loss), cash flows, and shareholders' equity for each of the years in the two-year period ended December 31, 2019, and the related notes (collectively, the consolidated financial statements), and our report dated March 16, 2020 expressed an unqualified opinion on those consolidated financial statements.

A material weakness is a deficiency, or a combination of deficiencies, in internal control over financial reporting, such that there is a reasonable possibility that a material misstatement of the company's annual or interim financial statements will not be prevented or detected on a timely basis. Material weaknesses related to an ineffective control environment resulting from an insufficient number of trained resources, ineffective risk assessment, ineffective information and communication, and ineffective monitoring activities resulting in ineffective control activities related to the design and operation of process-level controls and general information technology controls across all financial reporting processes have been identified and included in management's assessment. The material weaknesses were considered in determining the nature, timing, and extent of audit tests applied in our audit of the 2019 consolidated financial statements, and this report does not affect our report on those consolidated financial statements.

Basis for Opinion

The Company's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying *Management's Report on Internal Control Over Financial Reporting as of December 31, 2019*. Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audit also included performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

Definition and Limitations of Internal Control Over Financial Reporting

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

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

/s/ KPMG LLP

Richmond, Virginia

March 16, 2020

Report of Independent Registered Public Accounting Firm

To the Board of Directors and Shareholders of Tredegar Corporation

Opinion on the Financial Statements

We have audited the consolidated statements of income, of comprehensive income (loss), of shareholders' equity, and of cash flows of Tredegar Corporation and its subsidiaries (the "Company") for the year ended December 31, 2017, including the related notes (collectively referred to as the "consolidated financial statements"). In our opinion, the consolidated financial statements present fairly, in all material respects, the results of operations and cash flows of the Company for the year ended December 31, 2017 in conformity with accounting principles generally accepted in the United States of America.

Basis for Opinion

These consolidated financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's consolidated financial statements based on our audit. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audit of these consolidated financial statements in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud.

Our audit included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audit also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. We believe that our audit provides a reasonable basis for our opinion.

/s/ PricewaterhouseCoopers LLP

Richmond, Virginia

February 21, 2018, except for the change in the manner in which the Company accounts for pension and postretirement benefits discussed in Note 1 (not presented herein) to the consolidated financial statements appearing under Item 15 of the Company's 2018 annual report on Form 10-K, as to which the date is March 18, 2019, and except for the change in the manner in which the Company measures segment profit and loss discussed in Note 5 to the consolidated financial statements, as to which the date is March 16, 2020.

We served as the Company's auditor from 1989 to 2018.

CONSOLIDATED BALANCE SHEETS

Tredegar Corporation and Subsidiaries

December 31	2019	2018
(In thousands, except share data)		
Assets		
Current assets:		
Cash and cash equivalents	\$ 31,422	\$ 34,397
Accounts and other receivables, net of allowance for doubtful accounts and sales returns of \$3,036 in 2019 and \$2,937 in 2018	107,558	124,727
Income taxes recoverable	4,100	6,783
Inventories	81,380	93,810
Prepaid expenses and other	8,696	9,564
Total current assets	233,156	269,281
Property, plant and equipment, at cost:		
Land and land improvements	9,744	8,772
Buildings	106,551	101,332
Machinery and equipment	694,506	682,968
Total property, plant and equipment	810,801	793,072
Less accumulated depreciation	(567,911)	(564,703)
Net property, plant and equipment	242,890	228,369
Right-of-use leased assets	19,220	—
Investment in kaléo (cost basis of \$7,500)	95,500	84,600
Identifiable intangible assets, net	22,636	36,295
Goodwill	81,404	81,404
Deferred income tax assets	13,129	3,412
Other assets	4,733	4,012
Total assets	\$ 712,668	\$ 707,373
Liabilities and Shareholders' Equity		
Current liabilities:		
Accounts payable	\$ 103,657	\$ 112,758
Accrued expenses	45,809	42,495
Lease liability, short-term	3,002	—
Total current liabilities	152,468	155,253
Lease liability, long-term	17,689	—
Long-term debt	42,000	101,500
Pension and other postretirement benefit obligations, net	107,446	88,124
Deferred income tax liabilities	11,019	—
Other noncurrent liabilities	5,297	7,639
Total liabilities	335,919	352,516
Shareholders' equity:		
Common stock (no par value):		
Authorized 150,000,000 shares;		
Issued and outstanding—33,365,039 shares in 2019 and 33,176,024 in 2018 (including restricted stock)	45,514	38,892
Common stock held in trust for savings restoration plan (74,798 shares in 2019 and 72,883 in 2018)	(1,592)	(1,559)
Accumulated other comprehensive income (loss):		
Foreign currency translation adjustment	(100,663)	(96,940)
Gain (loss) on derivative financial instruments	(1,307)	(1,601)
Pension and other postretirement benefit adjustments	(95,681)	(81,446)
Retained earnings	530,478	497,511
Total shareholders' equity	376,749	354,857
Total liabilities and shareholders' equity	\$ 712,668	\$ 707,373

See accompanying notes to financial statements.

CONSOLIDATED STATEMENTS OF INCOME

Tredegar Corporation and Subsidiaries

Years Ended December 31	2019	2018	2017
(In thousands, except per-share data)			
Revenues and other:			
Sales	\$ 972,358	\$ 1,065,471	\$ 961,330
Other income (expense), net	34,795	30,459	51,713
	1,007,153	1,095,930	1,013,043
Costs and expenses:			
Cost of goods sold	767,511	849,756	767,550
Freight	36,063	36,027	33,683
Selling, general and administrative	94,352	85,283	83,386
Research and development	19,636	18,707	18,287
Amortization of identifiable intangibles	13,601	3,976	6,198
Pension and postretirement benefits	9,642	10,406	10,193
Interest expense	4,051	5,702	6,170
Asset impairments and costs associated with exit and disposal activities	4,125	2,913	102,488
Goodwill impairment charge	—	46,792	—
Total	948,981	1,059,562	1,027,955
Income (loss) before income taxes	58,172	36,368	(14,912)
Income tax expense (benefit)	9,913	11,526	(53,163)
Net income	\$ 48,259	\$ 24,842	\$ 38,251
Earnings per share:			
Basic	\$ 1.45	\$ 0.75	\$ 1.16
Diluted	\$ 1.45	\$ 0.75	\$ 1.16

See accompanying notes to financial statements.

CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME (LOSS)

Tredegar Corporation and Subsidiaries

Years Ended December 31	2019	2018	2017
(In thousands, except per-share data)			
Net income	\$ 48,259	\$ 24,842	\$ 38,251
Other comprehensive income (loss):			
Unrealized foreign currency translation adjustment (net of tax benefit of \$623 in 2019, tax of \$281 in 2018 and tax benefit of \$371 in 2017)	(3,723)	(10,762)	7,792
Derivative financial instruments adjustment (net of tax of \$71 in 2019, tax benefit of \$503 in 2018 and tax of \$111 in 2017)	294	(2,060)	(404)
Pension & other postretirement benefit adjustments:			
Net gains (losses) and prior service costs (net of tax benefit of \$6,417 in 2019, tax benefit of \$319 in 2018 and tax benefit of \$2,518 in 2017)	(22,508)	(1,118)	(8,634)
Amortization of prior service costs and net gains or losses (net of tax of \$2,359 in 2019, tax of \$3,028 in 2018 and tax of \$4,234 in 2017)	8,273	10,622	7,811
Other comprehensive income (loss)	(17,664)	(3,318)	6,565
Comprehensive income (loss)	\$ 30,595	\$ 21,524	\$ 44,816

See accompanying notes to financial statements.

CONSOLIDATED STATEMENTS OF CASH FLOWS

Tredegar Corporation and Subsidiaries

Years Ended December 31	2019	2018	2017
(In thousands)			
Cash flows from operating activities:			
Net income	\$ 48,259	\$ 24,842	\$ 38,251
Adjustments for noncash items:			
Depreciation	30,683	29,828	34,079
Amortization of identifiable intangibles	13,601	3,976	6,198
Goodwill impairment charge	—	46,792	—
Reduction of right-of-use lease asset	2,588	—	—
Deferred income taxes	5,856	8,626	(36,414)
Accrued pension and postretirement benefits	9,642	10,406	10,193
(Gain) loss on investment in kaléo accounted for under the fair value method	(10,900)	(30,600)	(33,800)
Loss on asset impairments	519	223	101,282
(Gain) loss on sale of assets	(6,334)	(46)	553
Gain from insurance recoveries	—	—	(5,261)
Changes in assets and liabilities:			
Accounts and other receivables	16,471	(11,883)	(10,566)
Inventories	11,315	(9,577)	(9,128)
Income taxes recoverable/payable	2,644	25,018	(24,449)
Prepaid expenses and other	795	(1,924)	(784)
Accounts payable and accrued expenses	(2,937)	5,571	21,123
Lease liability	(2,723)	—	—
Pension and postretirement benefit plan contributions	(8,614)	(8,907)	(5,829)
Other, net	4,998	5,449	2,767
Net cash provided by operating activities	115,863	97,794	88,215
Cash flows from investing activities:			
Capital expenditures	(50,864)	(40,814)	(44,362)
Acquisitions, net of cash acquired	—	—	(87,110)
Return of escrowed funds relating to acquisition earn-out	—	4,250	—
Net proceeds from the sale of investment property	—	1,384	—
Insurance proceeds from cast house explosion	—	—	5,739
Proceeds from the sale of assets and other	10,936	1,098	129
Net cash used in investing activities	(39,928)	(34,082)	(125,604)
Cash flows from financing activities:			
Borrowings	65,500	76,750	190,750
Debt principal payments	(125,000)	(127,250)	(133,750)
Dividends paid	(15,325)	(14,592)	(14,532)
Debt financing costs	(1,817)	—	—
Repurchase of employee common stock for tax withholdings	(854)	(328)	(124)
Proceeds from exercise of stock options and other	184	1,332	819
Net cash provided by (used in) financing activities:	(77,312)	(64,088)	43,163
Effect of exchange rate changes on cash	(1,598)	(1,718)	1,206
Increase (decrease) in cash and cash equivalents	(2,975)	(2,094)	6,980
Cash and cash equivalents at beginning of period	34,397	36,491	29,511
Cash and cash equivalents at end of period	\$ 31,422	\$ 34,397	\$ 36,491
Supplemental cash flow information:			
Interest payments	\$ 4,358	\$ 5,421	\$ 5,808
Income tax payments (refunds), net	\$ 2,595	\$ (24,020)	\$ 9,193

See accompanying notes to financial statements.

CONSOLIDATED STATEMENTS OF SHAREHOLDERS' EQUITY

Tredegar Corporation and Subsidiaries

(In thousands, except share and per-share data)	Common Stock		Retained Earnings	Trust for Savings Restoration Plan	Accumulated Other Comprehensive Income (Loss)			Total Shareholders' Equity
	Shares	Amount			Foreign Currency Translation	Gain (Loss) on Derivative Financial Instruments	Pension & Other Post-retirement Benefit Adjust.	
Balance at January 1, 2017	32,933,807	\$ 32,007	\$463,507	\$ (1,497)	\$ (93,970)	\$ 863	\$ (90,127)	\$ 310,783
Net income	—	—	38,251	—	—	—	—	38,251
Foreign currency translation adjustment (net of tax benefit of \$371)	—	—	—	—	7,792	—	—	7,792
Derivative financial instruments adjustment (net of tax of \$111)	—	—	—	—	—	(404)	—	(404)
Net gains or losses and prior service costs (net of tax benefit of \$2,518)	—	—	—	—	—	—	(8,634)	(8,634)
Amortization of prior service costs and net gains or losses (net of tax of \$4,234)	—	—	—	—	—	—	7,811	7,811
Cash dividends declared (\$0.44 per share)	—	—	(14,532)	—	—	—	—	(14,532)
Stock-based compensation expense	49,475	2,018	—	—	—	—	—	2,018
Repurchase of employee common stock for tax withholdings	(7,125)	(124)	—	—	—	—	—	(124)
Issued upon exercise of stock options	41,265	819	—	—	—	—	—	819
Cumulative effect adjustment for adoption of stock-based compensation accounting guidance	—	27	(27)	—	—	—	—	—
Tredegar common stock purchased by trust for savings restoration plan	—	—	31	(31)	—	—	—	—
Balance at December 31, 2017	33,017,422	34,747	487,230	(1,528)	(86,178)	459	(90,950)	343,780
Net income	—	—	24,842	—	—	—	—	24,842
Foreign currency translation adjustment (net of tax of \$281)	—	—	—	—	(10,762)	—	—	(10,762)
Derivative financial instruments adjustment (net of tax benefit of \$503)	—	—	—	—	—	(2,060)	—	(2,060)
Net gains or losses and prior service costs (net of tax benefit of \$319)	—	—	—	—	—	—	(1,118)	(1,118)
Amortization of prior service costs and net gains or losses (net of tax of \$3,028)	—	—	—	—	—	—	10,622	10,622
Cash dividends declared (\$0.44 per share)	—	—	(14,592)	—	—	—	—	(14,592)
Stock-based compensation expense	102,762	3,141	—	—	—	—	—	3,141
Repurchase of employee common stock for tax withholdings	(17,558)	(328)	—	—	—	—	—	(328)
Issued upon exercise of stock options	73,398	1,332	—	—	—	—	—	1,332
Tredegar common stock purchased by trust for savings restoration plan	—	—	31	(31)	—	—	—	—
Balance at December 31, 2018	33,176,024	38,892	497,511	(1,559)	(96,940)	(1,601)	(81,446)	354,857
Net income	—	—	48,259	—	—	—	—	48,259
Foreign currency translation adjustment (net of tax benefit of \$623)	—	—	—	—	(3,723)	—	—	(3,723)
Derivative financial instruments adjustment (net of tax of \$71)	—	—	—	—	—	294	—	294
Net gains or losses (net of tax benefit of \$6,417)	—	—	—	—	—	—	(22,508)	(22,508)
Amortization of net gains or losses (net of tax of \$2,359)	—	—	—	—	—	—	8,273	8,273
Cash dividends declared (\$0.46 per share)	—	—	(15,325)	—	—	—	—	(15,325)
Stock-based compensation expense	228,959	7,292	—	—	—	—	—	7,292
Repurchase of employee common stock for tax withholdings	(49,444)	(854)	—	—	—	—	—	(854)
Issued upon exercise of stock options	9,500	184	—	—	—	—	—	184
Tredegar common stock purchased by trust for savings restoration plan	—	—	33	(33)	—	—	—	—
Balance at December 31, 2019	33,365,039	\$ 45,514	\$530,478	\$ (1,592)	\$100,663	\$ (1,307)	\$ (95,681)	\$ 376,749

See accompanying notes to financial statements.

NOTES TO FINANCIAL STATEMENTS

Tredegar Corporation and Subsidiaries

1 SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Organization and Nature of Operations. Tredegar Corporation and subsidiaries (collectively “Tredegar,” “the Company,” “we,” “us” or “our”) are primarily engaged in the manufacture of aluminum extrusions, polyethylene films and polyester films, which are reported for business segment purposes under Aluminum Extrusions (also referred to as Bonnell Aluminum), PE Films and Flexible Packaging Films (also referred to as Terphane), respectively. More information on the Company’s business segments is provided in Note 5. See Note 17 regarding restructurings.

Basis of Presentation. The consolidated financial statements include the accounts and operations of Tredegar and all of its wholly-owned subsidiaries. Intercompany accounts and transactions have been eliminated in consolidation.

The preparation of financial statements in conformity with United States (“U.S.”) generally accepted accounting principles (“GAAP”) requires Tredegar to make estimates and assumptions that affect the reported amounts of revenues, expenses, assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements. Actual results could differ from those estimates.

Certain amounts for the prior years have been reclassified to conform to current year presentation.

Fiscal Year End. The Company operates on a calendar fiscal year except the Aluminum Extrusions segment, which operates on a 52/53-week fiscal year basis. References to Aluminum Extrusions for 2019, 2018 and 2017 relate to the 52-week fiscal year ended December 29, 2019, the 53-week fiscal year ended December 30, 2018 and the 52-week fiscal year ended December 24, 2017, respectively. The Company does not believe the impact of reporting the results of this segment as stated above is material to the consolidated financial results.

Foreign Currency Translation. The financial statements of subsidiaries located outside the U.S., where the local currency is the functional currency, are translated into U.S. Dollars using exchange rates in effect at the period end for assets and liabilities and average exchange rates during each reporting period for results of operations. Adjustments resulting from the translation of these financial statements are reflected as a separate component of shareholders’ equity. There are no operating subsidiaries located outside the U.S. where the U.S. Dollar is the functional currency.

Transaction and remeasurement gains or losses included in income were losses of \$0.7 million, \$0.5 million and \$0.8 million in 2019, 2018 and 2017, respectively. These amounts do not include the effects between reporting periods that exchange rate changes have on income of the locations outside the U.S. that result from translation into U.S. Dollars.

Cash and Cash Equivalents. Cash and cash equivalents consist of cash on hand in excess of daily operating requirements and highly liquid investments with original maturities of three months or less. At December 31, 2019 and 2018, Tredegar had cash and cash equivalents of \$31.4 million and \$34.4 million, respectively, including funds held in locations outside the U.S. of \$23.0 million and \$31.1 million, respectively.

The Company’s policy permits investment of excess cash in marketable securities that have the highest credit ratings and maturities of less than one year. The primary objectives of the policy are safety of principal and liquidity.

Accounts and Other Receivables. Accounts receivable are stated at the amount invoiced to customers less allowances for doubtful accounts and sales returns. Accounts receivable are non-interest bearing and arise from the sale of product to customers under typical industry trade terms. Notes receivable are not significant. Past due amounts are determined based on established terms and charged-off when deemed uncollectible. The allowance for doubtful accounts is determined based on an assessment of probable losses taking into account past due amounts, customer credit profile, historical experience and current economic conditions. Other receivables include value-added taxes related to certain foreign subsidiaries and other miscellaneous receivables due within one year. For certain customers, the Company has arrangements in place with financial institutions whereby certain customer receivables are sold to the financial institution at a discount and without recourse. Upon sale, the associated receivable is derecognized and the discount is recognized.

Inventories. Inventories are stated at the lower of cost or market, with cost determined using the last in, first out (“LIFO”), the weighted average cost or the first in, first out method. Cost elements included in work-in-process and finished goods inventories are raw materials, direct labor and manufacturing overhead. Finished goods, work-in-process, raw materials and supplies, stores and other inventory are reviewed to determine if inventory quantities are in excess of forecasted usage or if they have become obsolete.

Property, Plant and Equipment. Accounts include costs of assets constructed or purchased, related delivery and installation costs and interest incurred on significant capital projects during their construction periods. Expenditures for renewals and betterments also are capitalized, but expenditures for repairs and maintenance are expensed as incurred. The cost and accumulated depreciation applicable to assets retired or sold are removed from the respective accounts, and gains or losses thereon are included in income.

Capital expenditures for property, plant and equipment include capitalized interest. Capitalized interest included in capital expenditures for property, plant and equipment was \$0.9 million, \$0.3 million and \$0.4 million in 2019, 2018 and 2017, respectively.

Depreciation is computed primarily by the straight-line method based on the estimated useful lives of the assets that, except for isolated exceptions, range from 5 to 40 years for buildings and land improvements and 2 to 20 years for machinery and equipment.

Investments in Private Entities with Less Than or Equal to 50% Voting Ownership Interest. The Company accounts for its investments in private entities where its voting ownership is less than or equal to 50% based on the facts and circumstances surrounding the investment.

For those investments measured at fair value, GAAP requires disclosure of the level within the fair value hierarchy in which fair value measurements in their entirety fall, segregating fair value measurements using quoted prices in active markets for identical assets or liabilities (Level 1), significant other observable inputs (Level 2), and significant unobservable inputs (Level 3).

For more information on investments, see Note 4.

Goodwill and Identifiable Intangibles. The excess of the purchase price over the fair value of identifiable net assets of acquired companies is allocated to goodwill. The Company assesses goodwill for impairment when events or circumstances indicate that the carrying value may not be recoverable or, at a minimum, on an annual basis (December 1st of each year). When assessing goodwill for impairment, accounting guidance allows the Company to first perform a qualitative assessment about the likelihood of the carrying value of a reporting unit exceeding its fair value, referred to as the "Step 0" assessment. The Step 0 assessment requires the evaluation of certain qualitative factors, including macroeconomic conditions, industry and market considerations, cost factors and overall financial performance, as well as company and reporting unit factors. If the Company's Step 0 analysis indicates that it is more likely than not that the fair value of a reporting unit is less than the carrying amount, then the Company would perform a quantitative impairment test.

There are two reporting units in Aluminum Extrusions that have goodwill as a result of acquisitions in 2012 ("AACOA") and in 2017 ("Futura"). The Company's significant reporting unit in PE Films with goodwill is Surface Protection. Each of these reporting units has separately identifiable operating net assets (operating assets including goodwill and identifiable intangible assets net of operating liabilities).

The Company estimates the fair value of its reporting units using discounted cash flow analysis and comparative enterprise value-to-EBITDA (earnings before interest, taxes, depreciation and amortization) multiples. The Surface Protection reporting unit of PE Films, AACOA and Futura had goodwill in the amounts of \$57.3 million, \$13.7 million and \$10.4 million, respectively, at December 31, 2019.

As of December 1, 2019, the Company applied the Step 0 goodwill assessment to Surface Protection, AACOA and Futura, which all had fair values significantly in excess of their carrying amounts when last tested using the quantitative impairment test. The Company's Step 0 analysis in 2019 of the reporting units concluded that it is not more likely than not that the fair values of the reporting units are less than their carrying amounts. Therefore, the quantitative goodwill impairment test for these reporting units was not necessary in 2019.

Indefinite-lived identifiable intangible assets are assessed for impairment when events or circumstances indicate that the carrying value may not be recoverable. The Company estimates the fair value of its trade names using a relief-from-royalty method that relies upon a corresponding discounted cash flow analysis.

Additional disclosure of Tredegar's goodwill and identifiable intangible assets and the impairments recorded in 2018 and 2017 are included in Note 8.

Impairment of Long-Lived Assets. The Company reviews long-lived assets for possible impairment when events indicate that an impairment may exist. For assets that are held and used in operations, if events indicate that an asset may be impaired, the Company estimates the future unlevered pre-tax cash flows expected to result from the use of the asset and its eventual disposition. Assets are grouped for this purpose at the lowest level for which there are identifiable and independent cash flows.

If the sum of these undiscounted pre-tax cash flows is less than the carrying amount of the asset group, an impairment loss is calculated. Measurement of the impairment loss is the amount by which the carrying amount exceeds the estimated fair value of the asset group.

Assets that are held for sale are reported at the lower of their carrying amount or estimated fair value less cost to sell, with an impairment loss recognized for any write-down required.

Pension Costs and Postretirement Benefit Costs Other than Pensions. Pension costs and postretirement benefit costs other than pensions have been accrued over the period employees provided service to Tredegar. Liabilities and expenses for pension plans and other postretirement benefits are determined using actuarial methodologies and incorporate significant assumptions, including the rate used to discount the future estimated liability, the long-term rate of return on plan assets, and several assumptions relating to the employee workforce. The Company recognizes the funded status of its pension and other postretirement plans in the accompanying consolidated balance sheets. Tredegar's policy is to fund its pension plans at amounts not less than the minimum requirements of the Employee Retirement Income Security Act ("ERISA") of 1974 and to fund postretirement benefits other than pensions when claims are incurred.

Additional disclosure regarding Tredegar's pension costs and postretirement benefit costs other than pensions is included in Note 13.

Revenue Recognition. The Company's revenue is primarily generated from the sale of finished products to customers. Those sales predominantly contain a single performance obligation and revenue is recognized at the point in time when control of the product is transferred to customers, along with the title, risk of loss and rewards of ownership. Depending on the arrangement with the customer, these criteria are met either at the time the product is shipped or when the product is made available or delivered at the destination specified in the agreement with the customer.

Sales revenue is recognized in an amount that reflects the consideration the Company expects to be entitled to in exchange for that finished product. The Company offers various discounts, rebates and allowances to customers, (collectively, "allowances"), all of which are considered when determining the transaction price. Certain allowances are fixed and determinable at the time of sale and are recorded at the time of sale as a reduction to revenues. Other allowances can vary depending on future outcomes such as customer sales volume and represent variable consideration.

Amounts billed to customers related to freight are classified as sales revenue and the cost of freight is classified as a separate line in the accompanying consolidated statements of income. Taxes assessed by a governmental authority that are both imposed on and concurrent with a specific revenue-producing transaction between Tredegar and its customers (such as value-added taxes) are accounted for on a net basis and therefore excluded from revenues. See Note 5 for disaggregation of revenue by segment and type. See Note 6 for a table showing accounts and other receivables, net of allowance for bad debts and sales returns.

Revenue expected to be recognized in any future period related to remaining performance obligations, excluding i) revenue pertaining to contracts that have an original expected duration of one year or less, ii) contracts where revenue is recognized as invoiced and iii) variable consideration related to unsatisfied performance obligations, is not expected to materially impact the Company's financial results.

Research & Development ("R&D") Costs. R&D costs are expensed as incurred and include primarily salaries, wages, employee benefits, equipment depreciation, facility costs and the cost of materials consumed relating to R&D efforts. R&D costs include a reasonable allocation of indirect costs.

Income Taxes. Income taxes are recognized during the period in which transactions enter into the determination of income for financial reporting purposes, with deferred income taxes being provided at enacted statutory tax rates on the differences between the financial reporting and tax bases of assets and liabilities (see Note 16). Tredegar's policy is to accrue U.S. federal income taxes to the extent required under GAAP on unremitted earnings of all foreign subsidiaries where required. However, due to changes in the taxation of dividends under the Tax Cuts and Jobs Act (the "TCJA") enacted by the U.S. government in December 2017, Tredegar only records U.S. federal income taxes on unremitted earnings of its foreign subsidiaries where Tredegar cannot take steps to eliminate any potential tax on future distributions from its foreign subsidiaries. Because of the accumulation of significant losses related to foreign currency translations at Terphane Limitada, there were no unrecorded deferred income tax liabilities associated with U.S. federal income taxes and foreign withholding taxes on Terphane Limitada's undistributed earnings as of December 31, 2019 and December 31, 2018.

A valuation allowance is recorded in the period when the Company determines that it is more likely than not that all or a portion of deferred income tax assets may not be realized. The establishment and removal of a valuation allowance requires the Company to consider all positive and negative evidence and make a judgmental decision regarding the amount of valuation

allowance required as of a reporting date. The benefit of an uncertain tax position is included in the accompanying financial statements when the Company determines that it is more likely than not that the position will be sustained, based on the technical merits of the position, if the taxing authority examines the position and the dispute is litigated. This determination is made on the basis of all the facts, circumstances and information available as of the reporting date.

Earnings Per Share. Basic earnings per share is computed using the weighted average number of shares of common stock outstanding. Diluted earnings per share is computed using the weighted average common and potentially dilutive common equivalent shares outstanding, determined as follows:

	2019	2018	2017
Weighted average shares outstanding used to compute basic earnings per share	33,236,115	33,067,800	32,945,961
Incremental shares attributable to stock options and restricted stock	22,022	24,674	5,327
Shares used to compute diluted earnings per share	33,258,137	33,092,474	32,951,288

Incremental shares attributable to stock options and restricted stock are computed using the average market price during the related period. The out-of-the-money options to purchase shares that were excluded from the calculation of incremental shares attributable to stock options and restricted stock were 209,592, 726,475, and 397,669 as of December 31, 2019, 2018 and 2017, respectively.

Stock-Based Employee Compensation Plans. Compensation expense is recorded on all share-based awards using its calculated fair value over the requisite service period under the graded-vesting method. The fair value of stock option awards was estimated as of the grant date using the Black-Scholes options-pricing model. The fair value of restricted stock awards was estimated as of the grant date using the closing stock price on that date.

The assumptions used in this model for valuing Tredegar stock options granted in 2019, 2018 and 2017 were as follows:

	2019	2018	2017
Dividend yield	2.4%	2.3%	1.9%
Weighted average volatility percentage	38.3%	38.3%	38.3%
Weighted average risk-free interest rate	2.4%	2.8%	1.8%
Holding period (years):			
Officers	5	5	5
Management	5	5	5
Weighted average exercise price at date of grant (also weighted average market price at date of grant):			
Officers	\$ 18.48	\$ 19.35	\$ 15.65
Management	\$ 18.48	\$ 19.35	\$ 15.65

The dividend yield is the actual dividend yield on Tredegar's common stock at the date of grant, which the Company believes is a reasonable estimate of the expected yield during the holding period. The expected volatility is based on the historical volatility of Tredegar's common stock using a sequential period of historical data equal to the expected holding period of the option. The Company has no reason to believe that future volatility for this period is likely to differ from the past. The assumed risk-free interest rate is based on observed interest rates for U.S. Treasury debt securities appropriate for the expected holding period.

Tredegar stock options granted during 2019, 2018 and 2017, and related estimated fair value at the date of grant, are as follows:

	2019	2018	2017
Stock options granted (number of shares):			
Officers	729,810	425,228	151,992
Management	28,477	25,855	57,559
Total	758,287	451,083	209,551
Estimated weighted average fair value of options per share at date of grant:			
Officers	\$ 5.43	\$ 5.87	\$ 4.69
Management	\$ 5.43	\$ 5.87	\$ 4.69
Total estimated fair value of stock options granted (in thousands)	\$ 4,117	\$ 2,648	\$ 983

Additional disclosure of Tredegar stock options is included in Note 12.

Financial Instruments. Tredegar uses derivative financial instruments for the purpose of hedging aluminum price volatility and currency exchange rate exposures that exist as part of transactions associated with ongoing business operations. The Company's derivative financial instruments are designated as and qualify as cash flow hedges and are recognized in the accompanying balance sheet at fair value. A change in the fair value of the derivative that is highly effective and that is designated and qualifies as a cash flow hedge is recorded in other comprehensive income. Gains and losses reported in other comprehensive income (loss) are reclassified to earnings in the periods in which earnings are affected by the variability of cash flows of the hedged transaction. Such gains and losses are reported on the same line as the underlying hedged item, and the cash flows related to financial instruments are classified in the consolidated statements of cash flows in a manner consistent with those of the transactions being hedged. Any hedge ineffectiveness (which represents the amount by which the changes in the fair value of the derivative exceed the variability in the cash flows of the forecasted transaction) is recorded in current period earnings. The amount of gains and losses recognized for hedge ineffectiveness were not material in 2019, 2018 and 2017.

The Company's policy requires that it formally document all relationships between hedging instruments and hedged items, as well as its risk management objective and strategy for undertaking various hedge transactions. The Company also formally assesses (both at the hedge's inception and on an ongoing basis) whether the derivatives that are used in hedging transactions have been highly effective in offsetting changes in the fair value or cash flows of hedged items and whether those derivatives may be expected to remain highly effective in future periods. When it is determined that a derivative is not (or has ceased to be) highly effective as a hedge, the Company discontinues hedge accounting prospectively.

As a policy, Tredegar does not engage in speculative or leveraged transactions, nor does it hold or issue financial instruments for trading purposes. Additional disclosure of the utilization of derivative hedging instruments is included in Note 9.

Comprehensive Income (Loss). Comprehensive income (loss) is defined as net income or loss as adjusted by other comprehensive income or loss items. Other comprehensive income (loss) includes changes in foreign currency translation adjustments, unrealized gains and losses on derivative financial instruments, prior service costs and net gains or losses from pension and other postretirement benefit plans arising during the period and amortization of these prior service costs and net gain or loss adjustments, all recorded net of deferred income taxes.

The following table summarizes the after-tax changes in accumulated other comprehensive income (loss) for the year ended December 31, 2019:

(In thousands)	Foreign currency translation adjustment	Gain (loss) on derivative financial instruments	Pension and other post-retirement benefit adjustments	Total
Beginning balance, January 1, 2019	\$ (96,940)	\$ (1,601)	\$ (81,446)	\$ (179,987)
Other comprehensive income (loss) before reclassifications	(3,723)	(2,686)	(22,508)	(28,917)
Amounts reclassified from accumulated other comprehensive income (loss)	—	2,980	8,273	11,253
Net other comprehensive income (loss) - current period	(3,723)	294	(14,235)	(17,664)
Ending balance, December 31, 2019	\$ (100,663)	\$ (1,307)	\$ (95,681)	\$ (197,651)

The following table summarizes the after-tax changes in accumulated other comprehensive income (loss) for the year ended December 31, 2018:

(In thousands)	Foreign currency translation adjustment	Gain (loss) on derivative financial instruments	Pension and other post-retirement benefit adjustments	Total
Beginning balance, January 1, 2018	\$ (86,178)	\$ 459	\$ (90,950)	\$ (176,669)
Other comprehensive income (loss) before reclassifications	(10,762)	(2,978)	(1,118)	(14,858)
Amounts reclassified from accumulated other comprehensive income (loss)	—	918	10,622	11,540
Net other comprehensive income (loss) - current period	(10,762)	(2,060)	9,504	(3,318)
Ending balance, December 31, 2018	\$ (96,940)	\$ (1,601)	\$ (81,446)	\$ (179,987)

Reclassifications of balances out of accumulated other comprehensive income (loss) into net income during 2019 are summarized as follows:

(In thousands)	Amount reclassified from other comprehensive income (loss)	Location of gain (loss) reclassified from accumulated other comprehensive income (loss) to net income (loss)
Gain (loss) on derivative financial instruments:		
Aluminum future contracts, before taxes	\$ (2,736)	Cost of goods sold
Foreign currency forward contracts, before taxes	(904)	Selling, general and administrative
Foreign currency forward contracts, before taxes	62	Cost of goods sold
Total, before taxes	(3,578)	
Income tax expense (benefit)	(598)	Income taxes
Total, net of tax	\$ (2,980)	
Amortization of pension and other post-retirement benefits:		
Actuarial gain (loss) and prior service costs, before taxes	\$ (10,632)	(a)
Income tax expense (benefit)	(2,359)	Income taxes
Total, net of tax	\$ (8,273)	

(a) This component of accumulated other comprehensive income is included in the computation of net periodic pension cost (see Note 13 for additional detail).

Reclassifications of balances out of accumulated other comprehensive income (loss) into net income during 2018 are summarized as follows:

(In thousands)	Amount reclassified from other comprehensive income (loss)	Location of gain (loss) reclassified from accumulated other comprehensive income (loss) to net income
Gain (loss) on derivative financial instruments:		
Aluminum future contracts, before taxes	\$ 1,069	Cost of goods sold
Foreign currency forward contracts, before taxes	(1,796)	Selling, general and administrative
Foreign currency forward contracts, before taxes	62	Cost of goods sold
Total, before taxes	(665)	
Income tax expense (benefit)	253	Income taxes
Total, net of tax	\$ (918)	
Amortization of pension and other post-retirement benefits:		
Actuarial gain (loss) and prior service costs, before taxes	\$ (13,650)	(a)
Income tax expense (benefit)	(3,028)	Income taxes
Total, net of tax	\$ (10,622)	

(a) This component of accumulated other comprehensive income is included in the computation of net periodic pension cost (see Note 13 for additional detail).

Reclassifications of balances out of accumulated other comprehensive income (loss) into net income during 2017 are summarized as follows:

(In thousands)	Amount reclassified from other comprehensive income (loss)	Location of gain (loss) reclassified from accumulated other comprehensive income (loss) to net income
Gain (loss) on derivative financial instruments:		
Aluminum future contracts, before taxes	\$ 1,210	Cost of goods sold
Foreign currency forward contracts, before taxes	(43)	Selling, general and administrative
Foreign currency forward contracts, before taxes	62	Cost of goods sold
Total, before taxes	1,229	
Income tax expense (benefit)	287	Income taxes
Total, net of tax	\$ 942	
Amortization of pension and other post-retirement benefits:		
Actuarial gain (loss) and prior service costs, before taxes	\$ (12,045)	(a)
Income tax expense (benefit)	(4,234)	Income taxes
Total, net of tax	\$ (7,811)	

(a) This component of accumulated other comprehensive income is included in the computation of net periodic pension cost (see Note 13 for additional detail).

Recently Issued Accounting Standards.

Accounting pronouncements adopted prior to 2019:

ASU 2014-09, REVENUE FROM CONTRACTS WITH CUSTOMERS (TOPIC 606)

In May 2014, the FASB and International Accounting Standards Board issued their converged standard on revenue recognition. The revised revenue standard contains principles that an entity will apply to direct the measurement of revenue and timing of when it is recognized. The core principle of the guidance is that the recognition of revenue should depict the transfer of promised goods or services to customers in an amount that reflects the consideration to which an entity expects to be entitled in exchange for those goods and services. To achieve that core principle, an entity will utilize a principle-based five-step approach model. The converged standard also includes more robust disclosure requirements which requires entities to provide sufficient information to enable users of financial statements to understand the nature, amount, timing and uncertainty of revenue and cash flows arising from contracts with customers. In March 2016, amended guidance was issued regarding clarifying the implementation guidance on principal versus agent considerations and in April 2016, clarifying guidance was issued relating to identifying performance obligations and licensing implementation. The Company adopted the new standard effective January 1, 2018, using the modified retrospective approach applied to all contracts as of the date of adoption. Comparative periods have not been adjusted and continue to be reported under the accounting standards in effect for those periods. The adoption of ASU 2014-09, as amended, had no material impact on the Company's consolidated financial position, results of operations, equity or cash flows upon adoption. The Company has included the disclosures required by ASU 2014-09.

New accounting pronouncements adopted in 2019:

ASU 2016-02, LEASES (TOPIC 842)

In February 2016, the Financial Accounting Standards Board ("FASB") issued a revised standard on lease accounting. Lessees will need to recognize virtually all of their leases with a term longer than 12 months on the balance sheet, by recording a right-of-use ("ROU") asset and lease liability. The revised standard requires additional analysis of the components of a transaction to determine if a right-of-use asset is embedded in the transaction that needs to be treated as a lease. Substantial additional disclosures are also required by the revised standard. The revised standard is effective for the Company for fiscal years beginning after December 31, 2018, including the interim periods within those fiscal years. A modified retrospective transition approach which requires a cumulative-effect adjustment to the opening balance of retained earnings on the effective date is required for leases existing at, or entered into after, the effective date, with certain practical expedients available. The Company elected to use certain transition practical expedients that allow it to elect to not reassess: i) whether expired or existing contracts contain leases under the new definition of a lease; ii) lease classification for expired or existing leases; and iii) whether previously capitalized initial direct costs would qualify for capitalization under Topic 842. The Company adopted the new guidance in the first quarter of 2019, electing the modified retrospective transition approach. The adoption did not have a material effect on the Company's consolidated financial statements. The most significant impact of the new standard was the initial recognition of ROU assets of approximately \$21 million and lease liabilities of approximately \$22 million for real estate, office equipment and vehicle operating leases as of the date of adoption.

ASU 2017-12, DERIVATIVES AND HEDGING (TOPIC 815)

In August 2017, the FASB issued amended guidance on the accounting for hedging activities. The amended guidance makes more hedging strategies qualify for hedge accounting. After initial qualification, the amended guidance permits a qualitative effectiveness assessment for certain hedges instead of a quantitative test, if the company can reasonably support an expectation of effectiveness throughout the term of the hedge. The amended guidance is effective for annual and interim periods beginning after January 1, 2019, but may be adopted immediately. The Company adopted the amended guidance in the first quarter of 2019 and there was no impact from adoption on the Company's consolidated financial statements.

ASU 2018-2, REPORTING COMPREHENSIVE INCOME (TOPIC 220)

In February 2018, the FASB issued ASU 2018-2 to provide entities an option to reclassify certain "stranded tax effects" resulting from the recent U.S. tax reform from accumulated other comprehensive income (AOCI) to retained earnings. This new standard takes effect for all entities in fiscal years beginning after December 15, 2018, and interim periods within those fiscal years. The Company has elected to not reclassify the income tax effects resulting from tax reform from AOCI to retained earnings.

Accounting Standards Not Yet Implemented:

ASU 2016-13, FINANCIAL INSTRUMENTS - CREDIT LOSSES (TOPIC 326)

In June 2016, the FASB issued ASU 2016-13 related to the measurement of credit losses on financial instruments. The pronouncement replaces the incurred loss methodology to record credit losses with a methodology that reflects the expected credit losses for financial assets not accounted for at fair value with gains and losses recognized through net income. This standard is effective for fiscal years beginning after December 15, 2019 and interim periods therein, with early adoption permitted for fiscal years, and interim periods therein, beginning after December 15, 2018. The Company is in the process of evaluating the guidance and expects to adopt ASU 2016-13 in the first quarter of 2020, with no material impact on the Company's consolidated financial statements.

ASU 2018-13, FAIR VALUE MEASUREMENT (TOPIC 820)

In August 2018, the FASB issued ASU 2018-13, which amended the fair value measurement guidance by removing and modifying certain disclosure requirements, while also adding new disclosure requirements. The amendments on changes in unrealized gains and losses, the range and weighted average of significant unobservable inputs used to develop Level 3 fair value measurements and the narrative description of measurement uncertainty should be applied prospectively for only the most recent interim or annual period presented in the initial fiscal year of adoption. All other amendments should be applied retrospectively to all periods presented upon their effective date. The amendments are effective for all companies for fiscal years, and interim periods within those years, beginning after December 15, 2019. Early adoption is permitted for all amendments. Further, a company may elect to early adopt the removal or modification of disclosures immediately and delay adoption of the new disclosure requirements until the effective date. The Company plans to adopt all disclosure requirements in the first quarter of 2020, with no material impact on the Company's consolidated financial statements.

2 ACQUISITIONS

On February 15, 2017, Bonnell Aluminum acquired 100% of the stock of Futura Industries Corporation on a net debt-free basis for approximately \$92 million (the "Initial Purchase Price"). The amount actually funded in cash at the transaction date was approximately \$87.0 million (the "Initial Cash Funding"), which was the Initial Purchase Price net of preliminary closing adjustments for working capital and seller transaction-related obligations assumed and subsequently paid by Bonnell Aluminum. In addition, the Company was refunded \$5 million in the first quarter of 2018 since Futura did not meet certain performance requirements for the 2017 fiscal year ("Earnout Provision"). The acquisition, which was funded using Tredegar's revolving credit facility, was treated as an asset purchase for U.S. federal income tax purposes.

Under the terms of the transaction, \$5 million of the Initial Cash Funding was placed in escrow (the "Earnout Escrow") and was returned to Bonnell Aluminum because Futura did not achieve a targeted EBITDA level (as defined in the Stock Purchase Agreement) for the last eleven months of the fiscal year ended December 2017. At the acquisition date, the Company performed a probability weighted assessment in order to determine the fair value of this contingent asset. The assessment estimated a fair value of \$4.3 million and a receivable ("Initial Earnout Receivable") was recorded by Bonnell Aluminum. At December 31, 2017, the Company updated its valuation of this contingent asset, which resulted in a fair value of \$5.0 million. The receivable was increased to \$5.0 million, and an additional \$0.7 million was recognized as income in 2017 in Other income (expense), net in the Consolidated Statements of Income.

The net purchase price for financial reporting purposes was set at approximately \$82.9 million (the "Adjusted Net Purchase Price"), which was the Initial Cash Funding less the Initial Earnout Receivable and the net settlement of certain post-closing adjustments of \$0.1 million paid to the seller in 2017. Adjustments to the purchase price were made retrospectively as if the accounting had been completed on the acquisition date. Based upon management's valuation of the fair value of tangible and identifiable intangible assets acquired (net of cash acquired) and liabilities assumed, the allocation of the Adjusted Net Purchase Price is as follows:

(In thousands)	
Accounts receivable	\$ 6,680
Inventories	10,342
Prepaid expenses and other current assets	240
Property, plant & equipment	32,662
Identifiable intangible assets:	
Customer relationships	24,000
Trade names	6,700
Trade payables & accrued expenses	(8,135)
Total identifiable net assets	72,489
Adjusted Net Purchase Price	82,860
Goodwill	\$ 10,371

The goodwill and identifiable intangible asset balances associated with this acquisition are deductible for tax purposes on a straight-line basis over a period of approximately 15 years. For financial reporting purposes, customer relationships are being amortized over 12 years; trade names were being amortized over 13 years but were fully amortized in 2019 as a result of a rebranding initiative by Bonnell Aluminum (see Note 8 for more details on the rebranding initiative). Goodwill is not subject to amortization for financial reporting purposes.

For the year ended December 31, 2017, Tredegar's consolidated results of operations and its Aluminum Extrusions business segment included the following Futura results for the 10.5 months owned: sales of \$71.0 million, EBITDA from ongoing operations of \$13.2 million, depreciation and amortization of \$5.0 million, and capital expenditures of \$2.5 million.

The following unaudited supplemental pro forma data presents Tredegar's consolidated sales, net income and related earnings per share as if the acquisition of Futura had been consummated at the beginning of 2017, and is not necessarily indicative of the Company's financial performance if the acquisition had actually been consummated as of that date, or of future performance. The supplemental unaudited pro forma measures for the year ended December 31, 2017 is presented below:

<i>Tredegar Pro Forma Results with Futura Acquisition</i>	
(In thousands, except per-share data)	2017
Sales	\$ 968,340
Net income	\$ 37,974
Earnings per share:	
Basic	\$ 1.15
Diluted	\$ 1.15

Futura's pre-acquisition results for the period from January 1 to February 14, 2017, and therefore the pro forma information for 2017 presented above, were adversely impacted by significant disruptions to manufacturing operations and sales caused by the renovation of its anodizing line. The actual accretion to Tredegar's diluted earnings per share from Futura since the acquisition date was 12 cents per share for 2017.

The Company's pro forma net income was computed for the periods shown as: (i) the Company's reported net income, plus (ii) Futura's historical pre-acquisition period earnings before interest, taxes, depreciation and amortization and excluding one-time purchase accounting and transaction-related expenses, minus (iii) the pro forma pre-acquisition period depreciation and amortization for Futura under purchase accounting for the Company, minus (iv) the pro forma pre-acquisition period interest expense for the Company applied at an annual rate of 3.0% to the \$87.0 million Initial Cash Funding, minus (v) the pro forma pre-acquisition period income taxes applied at a rate of 39.1% to the pro forma pre-acquisition earnings before income taxes computed from items (ii) through (iv).

3 OTHER INCOME (EXPENSE), NET

Other income (expense), net consists of the following:

(In thousands)	2019	2018	2017
Gain on investment in kaléo accounted for under fair value method	\$ 28,482	\$ 30,600	\$ 33,800
Gain on sale of manufacturing plant in Shanghai, China	6,316	—	—
Gain associated with the settlement of an escrow agreement related to Terphane, acquired in October 2011	—	—	11,856
Gain from insurance recoveries	—	—	5,261
Unrealized loss on investment property	—	(186)	—
Other	(3)	45	796
Total	\$ 34,795	\$ 30,459	\$ 51,713

The gain on investment in kaléo accounted for under the fair value method of \$28.5 million includes a cash dividend of \$17.6 million from kaléo. See Note 4 for more details on the investment in kaléo. See Note 17 for more details on the closing of the manufacturing plant in Shanghai, China.

The gain associated with the settlement of an escrow agreement related to the settlement of an escrow arrangement established upon the acquisition of Terphane Holdings, LLC in 2011. In settling the escrow arrangement, the Company assumed the risk of the claims (and associated legal fees) against which the escrow previously secured the Company. While the ultimate amount of such claims is unknown, the Company believes that it could be liable for some portion of these claims, and currently estimates the amount of such future claims at approximately \$1.0 million.

The gain of \$5.3 million from insurance recoveries related to the explosion that occurred in the second quarter of 2016 at the Aluminum Extrusions manufacturing facility in Newnan, Georgia, which includes the recognition of a gain on the involuntary conversion of an asset for insurance proceeds used for the replacement of capital equipment.

4 INVESTMENTS

In August 2007 and December 2008, the Company made an aggregate investment of \$7.5 million in kaleo, Inc. (“kaléo”), a privately held specialty pharmaceutical company dedicated to building innovative solutions for serious and life-threatening medical conditions. Tredegar owns Series A-3 Preferred Stock and Series B Preferred Stock in kaléo that, taken together, represents on a fully-diluted basis an approximate 18% interest in kaléo. Tredegar accounts for its investment in kaléo under the fair value option. At the time of the initial investment, the Company elected the fair value option of accounting since its investment objectives were similar to those of venture capitalists, which typically do not have controlling financial interests. Kaléo’s stock is not publicly traded.

The estimated fair value of the Company’s investment was \$95.5 million as of December 31, 2019 and \$84.6 million as of December 31, 2018. The Company recognized net appreciation on its investment in kaléo of \$28.5 million (\$23.4 million after taxes) and \$30.6 million (\$23.9 million after taxes) in 2019 and 2018, respectively, including a \$17.6 million dividend paid on April 30, 2019. Future dividends are subject to the discretion of kaléo’s board of directors. Amounts recognized associated with the Company’s investment in kaléo are included in “Other income (expense), net” in the consolidated statements of income and separately stated in the EBITDA from ongoing operations table in Note 5.

The Company estimates the fair value of its investment in kaléo by: (i) computing the weighted average estimated enterprise value (“EV”) utilizing both the discounted cash flow method (the “DCF Method”) and the application of a market multiple to earnings before interest, taxes, depreciation and amortization (the “EBITDA Multiple Method”), (ii) applying adjustments for any surplus or deficient working capital and estimates of contingent liabilities, (iii) adding cash and cash equivalents, (iv) subtracting interest-bearing debt, (v) subtracting a private company liquidity discount estimated at 10% and 15% at December 31, 2019 and 2018, respectively, of the net result of (i) through (iv), and (vi) applying liquidation preferences and fully diluted ownership percentages to the estimated equity value computed in (i) through (v).

The Company’s estimate of kaléo’s EV as of December 31, 2019 was determined by weighting the EBITDA Multiple Method by 80% and the DCF Method by 20%, which was consistent with the weighting applied at December 31, 2018. The heavier weighting towards the EBITDA Multiple Method was due to its heuristic nature versus the hypothetical nature of the projections used in the DCF Method. The DCF Method projections rely on numerous assumptions and Level 3 inputs, including estimating market growth, market share, pricing, net margins (after allowances for temporary discounts, prompt pay

discounts, product returns, wholesaler fees, chargebacks, rebates and copays), selling expenses, R&D expenses, general and administrative expenses, income taxes on unlevered pretax income, working capital, capital expenditures and the risk-adjusted discount rate. In addition, there are various regulatory and legal enforcement efforts, including an ongoing Department of Justice investigation related to kaléo's Evzio business, which could have a material adverse effect on kaléo's business that require assessment in any valuation method applied.

The table below provides a sensitivity analysis of the estimated fair value at December 31, 2019, of the Company's investment in kaléo for changes in the EBITDA multiple used in applying the EBITDA Multiple Method and the changes in the weighting of the DCF Method.

(\$ Millions)	EV-to-Adjusted EBITDA Multiple				
	7.0 x	8.0 x	9.0 x	10.0x	11.0x
50%	\$ 89.8	\$ 95.6	\$ 101.4	\$ 107.3	\$ 113.1
40%	\$ 85.5	\$ 92.5	\$ 99.5	\$ 106.5	\$ 113.5
30%	\$ 81.1	\$ 89.3	\$ 97.5	\$ 105.7	\$ 113.8
20%	\$ 76.8	\$ 86.2	\$ 95.5	\$ 104.9	\$ 114.2
10%	\$ 72.5	\$ 83.1	\$ 93.6	\$ 104.1	\$ 114.6
—%	\$ 68.2	\$ 79.9	\$ 91.6	\$ 103.3	\$ 114.9

The ultimate value of the Company's ownership interest in kaléo will be determined and realized only if and when a liquidity event occurs (including dividends), and the ultimate value could be materially different from the \$95.5 million estimated fair value reflected in the Company's financial statements at December 31, 2019.

5 BUSINESS SEGMENTS

The Company's business segments are Aluminum Extrusions, PE Films and Flexible Packaging Films. Aluminum Extrusions, also known as Bonnell Aluminum, produces high-quality, soft-alloy and medium-strength aluminum extrusions primarily for the following markets: building and construction, automotive, and specialty (which consists of consumer durables, machinery and equipment, electrical and distribution end-use products). PE Films is comprised of the following operating segments: surface protection films, personal care materials, and films for other markets. Flexible Packaging Films is comprised of the Company's polyester films business, Terphane Holdings LLC ("Terphane").

The Company's reportable segments are based on its method of internal reporting, which is generally segregated by differences in products. Accounting standards for presentation of segments require an approach based on the way the Company organizes the segments for making operating decisions and how the chief operating decision maker ("CODM") assesses performance.

Earnings before interest, taxes, depreciation and amortization from ongoing operations ("EBITDA from ongoing operations") is the measure of profit and loss used by the CODM (Tredegar's President and Chief Executive Officer) for purposes of assessing financial performance. In the fourth quarter of 2019, the Company concluded that "EBITDA from ongoing operations," instead of "operating profit from ongoing operations," is the most relevant metric for measuring segment financial performance. EBITDA from ongoing operations is the key profitability metric used by Tredegar's President and Chief Executive Officer, who was elected by the Tredegar Board of Directors in March 2019. This change resulted in a revision of the Company's segment disclosures for all periods to report EBITDA from ongoing operations as the measure of segment financial performance. The Company uses sales less freight ("net sales") as its measure of revenues from external customers at the segment level. This measure is separately included in the financial information regularly provided to the CODM.

PE Films' net sales to The Procter & Gamble Company ("P&G") totaled \$58.8 million in 2019, \$106.5 million in 2018 and \$122.4 million in 2017. These sales include plastic film sold to others that convert the film into materials used with products manufactured by P&G.

Information by business segment and geographic area for the last three years is provided in the segment tables below. There were no accounting transactions between segments and no allocations to segments.

<i>Net Sales</i>			
(In thousands)	2019	2018	2017
Aluminum Extrusions	\$ 529,602	\$ 573,126	\$ 466,833
PE Films	272,758	332,488	352,459
Flexible Packaging Films	133,935	123,830	108,355
Total net sales	936,295	1,029,444	927,647
Add back freight	36,063	36,027	33,683
Sales as shown in consolidated statements of income	\$ 972,358	\$ 1,065,471	\$ 961,330
<i>EBITDA from Ongoing Operations</i>			
(In thousands)	2019	2018	2017
Aluminum Extrusions:			
Ongoing operations:			
EBITDA	\$ 65,683	\$ 65,479	\$ 58,524
Depreciation & amortization (c)	(16,719)	(16,866)	(15,070)
EBIT	48,964	48,613	43,454
Plant shutdowns, asset impairments, restructurings and other (a)	(561)	(505)	321
Trade name accelerated amortization	(10,040)	—	—
PE Films:			
Ongoing operations:			
EBITDA	37,803	51,058	55,889
Depreciation & amortization (c)	(14,627)	(14,877)	(14,343)
EBIT	23,176	36,181	41,546
Plant shutdowns, asset impairments, restructurings and other (a)	(475)	(5,905)	(4,905)
Goodwill impairment charge	—	(46,792)	—
Flexible Packaging Films:			
Ongoing operations:			
EBITDA	14,737	11,154	7,817
Depreciation & amortization	(1,517)	(1,262)	(10,443)
EBIT	13,220	9,892	(2,626)
Plant shutdowns, asset impairments, restructurings and other (a)	—	(45)	(89,398)
Total	74,284	41,439	(11,608)
Interest income	296	369	209
Interest expense	4,051	5,702	6,170
Gain on investment in kaléo accounted for under the fair value method (a)	28,482	30,600	33,800
Loss on sale of investment property (a)	—	(38)	—
Unrealized loss on investment property (a)	—	(186)	—
Stock option-based compensation expense	4,209	1,221	264
Corporate expenses, net (a)(d)	36,630	28,893	30,879
Income (loss) before income taxes	58,172	36,368	(14,912)
Income tax expense (benefit) (a)	9,913	11,526	(53,163)
Net income (loss)	\$ 48,259	\$ 24,842	\$ 38,251

See footnotes following the tables.

<i>Identifiable Assets</i>			
(In thousands)	2019	2018	
Aluminum Extrusions	\$ 265,027	\$	281,372
PE Films	230,415		231,720
Flexible Packaging Films	74,016		58,964
Subtotal	569,458		572,056
General corporate	111,788		100,920
Cash and cash equivalents (b)	31,422		34,397
Total	\$ 712,668	\$	707,373

(In thousands)	<i>Depreciation and Amortization</i>			<i>Capital Expenditures</i>		
	2019	2018	2017	2019	2018	2017
Aluminum Extrusions	\$ 26,759	\$ 16,866	\$ 15,070	\$ 17,855	\$ 12,966	\$ 25,653
PE Films	15,822	15,513	14,609	23,920	21,998	15,029
Flexible Packaging Films	1,517	1,262	10,443	8,866	5,423	3,619
Subtotal	44,098	33,641	40,122	50,641	40,387	44,301
General corporate (d)	186	163	155	223	427	61
Total	\$ 44,284	\$ 33,804	\$ 40,277	\$ 50,864	\$ 40,814	\$ 44,362

<i>Net Sales by Geographic Area (b)</i>			
(In thousands)	2019	2018	2017
United States	\$ 638,815	\$ 691,232	\$ 584,066
Exports from the United States to:			
Asia	82,829	75,904	84,846
Canada	16,846	51,984	46,505
Europe	6,091	6,203	8,505
Latin America	13,735	12,106	15,199
Operations outside the United States:			
Brazil	111,246	101,217	87,155
The Netherlands	35,871	45,667	54,380
Hungary	25,530	33,512	24,727
China	225	7,814	12,199
India	5,107	3,805	10,065
Total	\$ 936,295	\$ 1,029,444	\$ 927,647

(In thousands)	<i>Identifiable Assets by Geographic Area (b)</i>		<i>Property, Plant & Equipment, Net by Geographic Area (b)</i>	
	2019	2018	2019	2018
United States	\$ 458,066	\$ 454,178	\$ 181,989	\$ 166,550
Operations outside the United States:				
Brazil	54,698	52,796	20,542	16,072
The Netherlands	12,579	15,020	5,729	6,005
Hungary	20,179	23,615	13,715	15,436
China	18,056	21,610	16,210	19,213
India	5,880	4,837	3,316	3,692
General corporate	111,788	100,920	1,389	1,401
Cash and cash equivalents (b)	31,422	34,397	n/a	n/a
Total	\$ 712,668	\$ 707,373	\$ 242,890	\$ 228,369

See footnotes following the tables and a reconciliation of net sales to sales as shown in the *Consolidated Statements of Income* in the first table of this Note 5.

Net Sales by Product Group

(In thousands)	2019	2018	2017
Aluminum Extrusions:			
Nonresidential building & construction	\$ 272,729	\$ 289,572	\$ 239,713
Consumer durables	57,607	66,416	54,126
Automotive	46,461	48,037	38,261
Machinery & equipment	38,657	41,899	33,450
Distribution	34,753	40,924	30,202
Residential building & construction	43,554	43,943	40,354
Electrical	35,841	42,335	30,727
Subtotal	529,602	573,126	466,833
PE Films:			
Personal care materials	161,493	227,090	246,416
Surface protection films	103,893	98,126	99,079
LED-based products	7,372	7,272	6,964
Subtotal	272,758	332,488	352,459
Flexible Packaging Films	133,935	123,830	108,355
Total	\$ 936,295	\$ 1,029,444	\$ 927,647

- (a) See Notes 1, 3, 4 and 17 for more information on losses associated with plant shutdowns, asset impairments and restructurings, unusual items, gains or losses from sale of assets, gains or losses on an investment accounted for under the fair value method and other items.
- (b) Information on exports and foreign operations are provided on the previous page. Cash and cash equivalents includes funds held in locations outside the U.S. of \$23.0 million and \$31.1 million at December 31, 2019 and 2018, respectively. Export sales relate almost entirely to PE Films. Operations outside the U.S. in The Netherlands, Hungary, China and India also relate to PE Films. Operations in Brazil are primarily related to Flexible Packaging Films, but also include PE Films operations. Sales from locations in The Netherlands and Hungary are primarily to customers located in Europe. Sales from locations in China (Guangzhou and Shanghai) are primarily to customers located in China, but also include other customers in Asia. The facility in Shanghai was shut down in the fourth quarter of 2018.
- (c) Depreciation and amortization for Aluminum Extrusions in 2019 excludes \$10.0 million for accelerated amortization of trade names as a result of a rebranding initiative (see Note 8 for more information) and for PE Films in 2019, 2018 and 2017 excludes \$1.2 million, \$0.6 million and \$0.3 million, respectively, for accelerated depreciation associated with restructurings and plant closures.
- (d) Corporate depreciation and amortization is included in Corporate expenses, net, on the EBITDA from ongoing operations table above.

6 ACCOUNTS AND OTHER RECEIVABLES

As of December 31, 2019 and 2018, accounts receivable and other receivables, net, were \$107.6 million and \$124.7 million, respectively, made up of the following:

(In thousands)	2019	2018
Customer receivables	\$ 106,153	\$ 122,182
Other accounts and notes receivable	4,441	5,482
Total accounts and other receivables	110,594	127,664
Less: Allowance for bad debts and sales returns	(3,036)	(2,937)
Total accounts and other receivables, net	\$ 107,558	\$ 124,727

A reconciliation of the beginning and ending balances of the allowance for doubtful accounts and sales returns for the three years ended December 31, 2019 is as follows:

(In thousands)	2019	2018	2017
Balance, beginning of year	\$ 2,937	\$ 3,304	\$ 3,102
Charges to expense	1,188	553	2,369
Recoveries	(38)	(56)	(857)
Write-offs and settlements	(974)	(710)	(1,322)
Foreign exchange and other	(77)	(154)	12
Balance, end of year	\$ 3,036	\$ 2,937	\$ 3,304

7 INVENTORIES

Inventories consist of the following:

(In thousands)	2019	2018
Finished goods	\$ 24,504	\$ 24,938
Work-in-process	12,328	15,648
Raw materials	24,735	33,741
Stores, supplies and other	19,813	19,483
Total	\$ 81,380	\$ 93,810

Inventories stated on the LIFO basis amounted to \$17.6 million at December 31, 2019 and \$18.2 million at December 31, 2018, which were below replacement costs by \$11.1 million at December 31, 2019 and \$16.4 million at December 31, 2018. During 2018, certain PE Films inventories accounted for on a LIFO basis declined, which resulted in cost of goods sold being stated at below current costs by \$0.3 million.

8 GOODWILL AND IDENTIFIABLE INTANGIBLE ASSETS

The components of goodwill and identifiable intangibles at December 31, 2019 and 2018, and related amortization periods for continuing operations are as follows:

(In thousands)	2019	2018	Amortization Periods
Goodwill	\$ 81,404	\$ 81,404	Not amortized
Identifiable intangible assets:			
Customer relationships (cost basis of \$29,550 in 2019 and \$29,568 in 2018)	20,198	22,785	10-12 years
Proprietary technology (cost basis of \$6,181 in 2019 and \$6,185 in 2018)	895	1,093	Not more than 15 years
Trade names (cost basis of \$13,645 in 2019 and \$13,690 in 2018)	1,543	12,417	5 - 13 years
Total carrying value of identifiable intangibles	22,636	36,295	
Total carrying value of goodwill and identifiable intangible assets	\$ 104,040	\$ 117,699	

In the third quarter of 2019, the Company implemented a rebranding initiative at Bonnell Aluminum whereby the use of the AACOA and Futura trade names was discontinued as of December 31, 2019. The associated trade names assets, with a remaining net book value of \$10.2 million, were amortized over the last four months of 2019.

A reconciliation of the beginning and ending balance of goodwill for each of the two years in the period ended December 31, 2019 is as follows:

(In thousands)	Aluminum Extrusions	PE Films	Total
Net carrying value of goodwill at January 1, 2018	\$ 24,066	\$ 104,142	\$ 128,208
Goodwill impairment charge	—	(46,792)	(46,792)
Increase (decrease) due to foreign currency translation	—	(12)	(12)
Net carrying value of goodwill at December 31, 2018	24,066	57,338	81,404
Goodwill impairment charge	—	—	—
Increase (decrease) due to foreign currency translation	—	—	—
Net carrying value of goodwill at December 31, 2019	\$ 24,066	\$ 57,338	\$ 81,404

The goodwill of Aluminum Extrusions is carried by the reporting units AACOA and Futura, in the amounts of \$13.7 million and \$10.4 million, respectively, as of December 31, 2019. The goodwill of PE Films is carried by its Surface Protection component in the amount of \$57.3 million as of December 31, 2019.

The Company recorded a goodwill impairment charge of \$46.8 million (\$38.2 million after taxes) for goodwill associated with the acquisition of certain components of PE Films. During the third quarter of 2018, the Company performed a goodwill impairment analysis related to the Personal Care reporting unit of PE Films. This review was undertaken as a result of the expected loss of business from a key customer and revised projections for PE Films. Based on an evaluation of projections under various business planning scenarios, the Company concluded that the fair value of the Personal Care reporting unit of PE Films was less than its carrying value.

A reconciliation of the beginning and ending balance of identifiable intangibles for each of the two years in the period ended December 31, 2019 is as follows:

(In thousands)	Customer Relationships	Proprietary Technology	Trade Names	Total
Aluminum Extrusions:				
Net carrying value at January 1, 2018	\$ 24,613	\$ 495	\$ 11,071	\$ 36,179
Amortization expense	(2,489)	(420)	(516)	(3,425)
Net carrying value at December 31, 2018	22,124	75	10,555	32,754
Amortization expense	(2,480)	(20)	(10,555)	(13,055)
Net carrying value at December 31, 2019	\$ 19,644	\$ 55	\$ —	\$ 19,699
PE Films:				
Net carrying value at January 1, 2018	\$ —	\$ 845	\$ —	\$ 845
Amortization expense	—	(115)	—	(115)
Net carrying value at December 31, 2018	—	730	—	730
Amortization expense	—	(120)	—	(120)
Net carrying value at December 31, 2019	\$ —	\$ 610	\$ —	\$ 610
Flexible Packaging Films:				
Net carrying value at January 1, 2018	\$ 831	\$ 360	\$ 2,337	\$ 3,528
Amortization expense	(82)	(55)	(299)	(436)
Increase (decrease) due to foreign currency translation	(88)	(17)	(176)	(281)
Net carrying value at December 31, 2018	661	288	1,862	2,811
Amortization expense	(91)	(55)	(280)	(426)
Increase (decrease) due to foreign currency translation	(16)	(3)	(39)	(58)
Net carrying value at December 31, 2019	\$ 554	\$ 230	\$ 1,543	\$ 2,327
Total net carrying value of identifiable intangibles at December 31, 2019	\$ 20,198	\$ 895	\$ 1,543	\$ 22,636

During the fourth quarter of 2017, in conjunction with annual business planning as well as valuation activities and other efforts, the Company determined that the carrying value of Terphane's remaining long-lived assets were impaired (Terphane's goodwill was written off in 2015). Accordingly, the Company wrote down these assets based on an enterprise valuation for all of Terphane of approximately \$30 million. This write-down resulted in a non-cash asset impairment loss recognized during the fourth quarter of 2017 of \$101 million (\$87 million after non-cash tax benefits). As part of this write-down, customer relationships, proprietary technology and trade names were impaired by \$9.4 million, \$4.1 million and \$4.0 million, respectively, reducing their values to \$0.8 million, \$0.4 million and \$2.4 million, respectively. The remaining part of this write-down was related to property, plant and equipment. Also, Terphane's trade names were assigned estimated useful lives of 5 to 13 years, a change from the previous designation of an indefinite life.

Amortization expense for continuing operations over the next five years is expected to be as follows:

Year	Amount (In thousands)
2020	\$ 3,070
2021	3,070
2022	2,935
2023	2,309
2024	2,269

9 FINANCIAL INSTRUMENTS

Tredegar uses derivative financial instruments for the purpose of hedging margin exposure from fixed-price forward sales contracts in Aluminum Extrusions and exposure from currency volatility that exist as part of ongoing business operations (primarily in Flexible Packaging Films). These derivative financial instruments are designated as and qualify as cash flow hedges and are recognized in the consolidated balance sheet at fair value. The fair value of derivative instruments recorded on the consolidated balance sheets are based upon Level 2 inputs. If individual derivative instruments with the same counterparty can be settled on a net basis, the Company records the corresponding derivative fair values as a net asset or net liability.

In the normal course of business, Aluminum Extrusions enters into fixed-price forward sales contracts with certain customers for the future sale of fixed quantities of aluminum extrusions at scheduled intervals. In order to hedge margin exposure created from the fixing of future sales prices relative to volatile raw material (aluminum) costs, Aluminum Extrusions enters into a combination of forward purchase commitments and futures contracts to acquire or hedge aluminum, based on the scheduled purchases for the firm sales commitments. The fixed-price firm sales commitments and related hedging instruments generally have durations of not more than 12 months, and the notional amount of aluminum futures contracts that hedged future purchases of aluminum to meet fixed-price forward sales contract obligations was \$20.2 million (19.6 million pounds of aluminum) at December 31, 2019 and \$25.4 million (22.5 million pounds of aluminum) at December 31, 2018.

The table below summarizes the location and gross amounts of aluminum derivative contract fair values (Level 2) in the consolidated balance sheets as of December 31, 2019 and 2018:

(In thousands)	December 31, 2019		December 31, 2018	
	Balance Sheet Account	Fair Value	Balance Sheet Account	Fair Value
Derivatives Designated as Hedging Instruments				
Asset derivatives:	Accrued		Accrued	
Aluminum futures contracts	expenses	\$ 6	expenses	\$ 20
Liability derivatives:	Accrued		Accrued	
Aluminum futures contracts	expenses	(1,259)	expenses	(1,650)
Net asset (liability)		\$ (1,253)		\$ (1,630)

In the event that a counterparty to an aluminum fixed-price forward sales contract chooses not to take delivery of its aluminum extrusions, the customer is contractually obligated to compensate Aluminum Extrusions for any losses on the related aluminum futures and/or forward contracts through the date of cancellation.

The table below summarizes the location and gross amounts of foreign currency forward contract fair values (Level 2) in the consolidated balance sheets as of December 31, 2019 and 2018:

(In thousands)	December 31, 2019		December 31, 2018	
	Balance Sheet Account	Fair Value	Balance Sheet Account	Fair Value
Derivatives Designated as Hedging Instruments				
Asset derivatives:				
Foreign currency forward contracts	Prepaid expenses and other	\$ 83	Prepaid expenses and other	\$ 37
Liability derivatives:				
Foreign currency forward contracts	Accrued expenses	(935)	Accrued expenses	(1,090)
Net asset (liability)		\$ (852)		\$ (1,053)

The Company's earnings are exposed to foreign currency exchange risk primarily through the translation of the financial statements of subsidiaries that have a functional currency other than the U.S. Dollar. The Company's largest exposure is for the Flexible Packaging Films business unit in Brazil, Terphane Limitada's ("Terphane Ltda."). The Company estimates that the net mismatch translation exposure between Terphane Ltda.'s U.S. Dollar quoted or priced sales and its underlying Brazilian Real ("R\$") quoted or priced operating costs (excluding depreciation and amortization) is annual net costs of R\$137 million. As of December 31, 2019, Terphane Ltda. had the following outstanding foreign exchange average forward rate contracts to purchase Brazilian Real and sell U.S. Dollars:

USD Notional Amount (000s)	Average Forward Rate Contracted on USD/BRL	R\$ Equivalent Amount (000s)	Applicable Month	Estimated % of Terphane Ltda. R\$ Operating Cost Exposure Hedged
\$2,100	3.8900	R\$8,169	Jan-20	72%
\$2,200	3.9040	R\$8,589	Feb-20	75%
\$2,200	3.9076	R\$8,597	Mar-20	75%
\$2,200	3.9131	R\$8,609	Apr-20	75%
\$2,200	3.9188	R\$8,621	May-20	76%
\$2,200	3.9249	R\$8,635	Jun-20	76%
\$2,200	3.9326	R\$8,652	Jul-20	76%
\$2,200	3.9413	R\$8,671	Aug-20	76%
\$2,200	3.9495	R\$8,689	Sep-20	76%
\$2,200	3.9579	R\$8,707	Oct-20	76%
\$2,200	3.9660	R\$8,725	Nov-20	76%
\$2,050	3.9653	R\$8,129	Dec-20	71%
\$26,150	3.9309	R\$102,793		75%

These foreign currency exchange contracts have been designated as and qualify as cash flow hedges of Terphane Ltda.'s forecasted sales to customers quoted or priced in U.S. Dollars over that period. By changing the currency risk associated with these U.S. Dollar sales, the derivatives have the effect of offsetting operating costs quoted or priced in Brazilian Real and decreasing the net exposure to Brazilian Real in the consolidated statements of income. The net fair value of the open forward contracts was a negative \$0.8 million as of December 31, 2019.

These derivative contracts involve elements of market risk that are not reflected on the consolidated balance sheet, including the risk of dealing with counterparties and their ability to meet the terms of the contracts. The counterparties to any forward purchase commitments are major aluminum brokers and suppliers, and the counterparties to any aluminum futures contracts are major financial institutions. Fixed-price forward sales contracts are only made available to the best and most credit-worthy customers. The counterparties to the Company's foreign currency cash flow hedge contracts are major financial institutions.

The pretax effect on net income (loss) and other comprehensive income (loss) of derivative instruments classified as cash flow hedges and described in the previous paragraphs for years ended December 31, 2019, 2018, and 2017 is summarized in the tables below:

(In thousands)	Cash Flow Derivative Hedges		
	Aluminum Futures Contracts		
	2019	2018	2017
Years Ended December 31,			
Amount of pre-tax gain (loss) recognized in other comprehensive income	\$ (2,359)	\$ (1,123)	\$ 1,501
Location of gain (loss) reclassified from accumulated other comprehensive income into net income (effective portion)	Cost of goods sold	Cost of goods sold	Cost of goods sold
Amount of pre-tax gain (loss) reclassified from accumulated other comprehensive income to net income (effective portion)	\$ (2,736)	\$ 1,069	\$ 1,210

(In thousands)	Cash Flow Derivative Hedges					
	Foreign Currency Forward Contracts					
	2019		2018		2017	
Years Ended December 31,						
Amount of pre-tax gain (loss) recognized in other comprehensive income	\$ —	\$ (856)	\$ —	\$ (2,105)	\$ —	\$ (561)
Location of gain (loss) reclassified from accumulated other comprehensive income into net income (effective portion)	Cost of goods sold	Selling, general & admin	Cost of goods sold	Selling, general & admin	Cost of goods sold	Selling, general & admin
Amount of pre-tax gain (loss) reclassified from accumulated other comprehensive income to net income (effective portion)	\$ 62	\$ (904)	\$ 62	\$ (1,796)	\$ 62	\$ (43)

Gains and losses on the ineffective portion of derivative instruments or derivative instruments that were not designated as hedging instruments were not material in 2019, 2018 and 2017. For the years ended December 31, 2019, 2018 and 2017, unrealized net losses from hedges that were discontinued were not material. As of December 31, 2019, the Company expected \$0.9 million of unrealized after-tax losses on derivative instruments reported in accumulated other comprehensive income to be reclassified to earnings within the next 12 months.

10 ACCRUED EXPENSES

Accrued expenses consist of the following:

(In thousands)	2019	2018
Vacation	\$ 8,842	\$ 8,946
Incentive compensation	9,792	6,979
Payrolls, related taxes and medical and other benefits	6,823	6,600
Workers' compensation and disabilities	3,557	4,048
Derivative contract liability	2,188	2,720
Accrued utilities	2,588	2,420
Accrued freight	1,547	2,091
Environmental liabilities (current)	2,122	1,990
Customer rebates	2,442	1,476
Accrued severance	1,389	637
Other	4,519	4,588
Total	\$ 45,809	\$ 42,495

A reconciliation of the beginning and ending balances of accrued expenses associated with asset impairments and costs related to exit and disposal activities for each of the three years in the period ended December 31, 2019 can be found in Note 17.

11 DEBT AND CREDIT AGREEMENTS

On June 28, 2019, Tredegar entered into a \$500 million five-year, secured revolving credit agreement ("Credit Agreement"), with an option to increase that amount by \$100 million. The Credit Agreement amends and restates the Company's previous \$400 million five-year, secured revolving credit facility that was due to expire on March 1, 2021.

Borrowings under the Credit Agreement bear an interest rate of LIBOR plus a credit spread and commitment fees charged on the unused amount under the Credit Agreement at various indebtedness-to-adjusted EBITDA levels as follows:

Pricing Under Credit Agreement (Basis Points)		
Indebtedness-to-Adjusted EBITDA Ratio	Credit Spread Over LIBOR	Commitment Fee
> 3.5x but <= 4.0x	200.0	40
> 3.0x but <= 3.5x	187.5	35
> 2.0x but <= 3.0x	175.0	30
> 1.0x but <= 2.0x	162.5	25
<= 1.0x	150.0	20

At December 31, 2019, the interest cost on debt borrowed under the Credit Agreement was priced at one-month LIBOR plus the applicable credit spread of 150 basis points.

The most restrictive covenants in the Credit Agreement include:

- Maximum indebtedness-to-adjusted EBITDA ("Leverage Ratio") of 4.00x;
- Minimum adjusted EBITDA-to-interest expense of 3.00x; and
- Maximum aggregate distributions to shareholders over the term of the Credit Agreement of \$130 million plus, beginning with the fiscal quarter ended June 30, 2019, 50% of net income and, at a Leverage Ratio of equal to or greater than 3.00x, a limitation on such payments for the succeeding quarter at the greater of (i) \$4.75 million and (ii) 50% of consolidated net income for the most recent fiscal quarter.

The Credit Agreement is secured by substantially all of the Company's and its domestic subsidiaries' assets, including equity in certain material first-tier foreign subsidiaries.

At December 31, 2019, based upon the most restrictive covenant within the Credit Agreement, available credit under the Credit Agreement was approximately \$370 million. Total debt due and outstanding at December 31, 2019 is summarized below:

Debt Due and Outstanding at December 31, 2019 (In thousands)			
Year Due	Credit Agreement	Other	Total Debt Due
2020	\$ —	\$ —	\$ —
2021	—	—	—
2022	—	—	—
2023	—	—	—
2024	42,000	—	42,000
Total	\$ 42,000	\$ —	\$ 42,000

Tredegar was in compliance with all of its debt covenants as of December 31, 2019. Noncompliance with any of the debt covenants may have a material adverse effect on financial condition or liquidity in the event such noncompliance cannot be cured or should the Company be unable to obtain a waiver from the lenders. Renegotiation of the covenant through an amendment to the Credit Agreement may effectively cure the noncompliance, but may have an effect on financial condition or liquidity depending upon how the covenant is renegotiated.

12 STOCK OPTION AND STOCK AWARD PLANS

Tredegar has one equity incentive plan under which stock options may be granted to purchase a specified number of shares of common stock at a price no lower than the fair market value on the date of grant and for a term not to exceed 10 years. Stock options granted by the Company during 2019, 2018 and 2017 either vest after 2 years and have a 7-year life or vest after 3 years and have a 5-year life. The option plan also permits the granting of stock appreciation rights (“SARs”), stock, restricted stock, stock unit awards and incentive awards. Restricted stock grants ordinarily vest three years from the date of grant based upon continued employment. Stock unit awards vest upon the achievement of certain performance targets. No SARs have been granted since 1992 and none are currently outstanding.

A summary of stock options outstanding at December 31, 2019, 2018 and 2017, and changes during those years, is presented below:

	Number of Options	Option Exercise Price/Share			Weighted Average
		Range			
Outstanding at January 1, 2017	500,919	\$ 17.13	to	\$ 30.01	\$ 21.67
Granted	209,551	15.65	to	15.65	15.65
Forfeited and expired	(60,685)	17.13	to	30.01	21.42
Exercised	(41,265)	19.84	to	19.84	19.84
Outstanding at December 31, 2017	608,520	15.65	to	24.84	19.75
Granted	451,083	19.35	to	19.35	19.35
Forfeited and expired	(96,089)	15.65	to	24.84	19.58
Exercised	(73,398)	15.65	to	22.49	18.15
Outstanding at December 31, 2018	890,116	15.65	to	24.84	19.69
Granted	758,287	18.48	to	18.48	18.48
Forfeited and expired	(10,000)	19.40	to	19.40	19.40
Exercised	(9,500)	19.40	to	19.40	19.40
Outstanding at December 31, 2019	1,628,903	\$ 15.65	to	\$ 24.84	\$ 19.13

The following table summarizes additional information about stock options outstanding and exercisable at December 31, 2019:

Options Outstanding at December 31, 2019							Options Exercisable at December 31, 2019		
Range of Exercise Prices		Shares	Weighted Average		Aggregate Intrinsic Value	Shares	Weighted Average Exercise Price	Aggregate Intrinsic Value	
			Remaining Contractual Life (Years)	Exercise Price					
\$ —	to \$ 15.00	—	0.0	\$ —	\$ —	—	\$ —	\$ —	
15.01	to 17.50	163,641	4.4	15.65	1,096,395	104,326	15.65	698,984	
17.51	to 20.00	1,255,670	5.3	18.83	4,424,405	46,300	19.40	136,585	
20.01	to 25.00	209,592	3.5	23.69	—	209,592	23.69	—	
Total		1,628,903	5.0	\$ 19.13	\$ 5,520,800	360,218	\$ 20.81	\$ 835,569	

The following table summarizes additional information about unvested restricted stock outstanding at December 31, 2019, 2018 and 2017:

	Unvested Restricted Stock			Maximum Unvested Restricted Stock Units Issuable Upon Satisfaction of Certain Performance Criteria		
	Number of Shares	Weighted Avg. Grant Date Fair Value/Share	Grant Date Fair Value (In thousands)	Number of Shares	Weighted Avg. Grant Date Fair Value/Share	Grant Date Fair Value (In thousands)
Outstanding at January 1, 2017	207,355	\$ 15.90	\$ 3,297	238,429	\$ 16.39	\$ 3,908
Granted	107,362	18.29	1,964	46,205	17.38	803
Vested	(50,154)	19.72	(989)	—	—	—
Forfeited	(57,887)	16.16	(935)	(112,501)	17.73	(1,995)
Outstanding at December 31, 2017	206,676	16.15	3,337	172,133	15.78	2,716
Granted	119,915	17.39	2,085	61,227	17.35	1,062
Vested	(64,702)	18.31	(1,185)	—	—	—
Forfeited	(17,153)	15.84	(272)	(48,651)	13.23	(644)
Outstanding at December 31, 2018	244,736	16.20	3,965	184,709	16.97	3,134
Granted	185,422	18.46	3,423	57,442	18.34	1,053
Vested	(117,834)	14.76	(1,739)	(69,926)	10.96	(766)
Forfeited	(26,389)	16.11	(425)	(24,562)	11.51	(283)
Outstanding at December 31, 2019	285,935	\$ 18.27	\$ 5,224	147,663	\$ 21.25	\$ 3,138

The total intrinsic value of stock options exercised was \$0.1 million in 2019, \$0.4 million in 2018 and \$0.2 million in 2017. The grant-date fair value of stock option-based awards vested was \$0.5 million in 2019, \$0.1 million in 2018 and \$0.4 million in 2017. As of December 31, 2019, there was unrecognized compensation cost of \$1.9 million related to stock option-based awards and \$2.5 million related to non-vested restricted stock and other stock-based awards. This cost is expected to be recognized over the remaining weighted average period of 1.09 years for stock option-based awards and 1.44 years for non-vested restricted stock and other stock-based awards. Stock option awards granted in 2019 included a retirement provision that allowed for the immediate vesting of options held by a participant of the plan that ceased to provide service, including service as a member of the board of directors, with the Company subsequent to reaching the age of 65. As a result of this provision and in accordance with accounting for stock-based compensation, the Company accelerated the recognition of \$1.3 million of expense into 2019. At December 31, 2019, the participant continues to provide ongoing service to the Company, and therefore continues to vest in the stock options under the originally contemplated service period.

Stock options exercisable totaled 360,218 shares at December 31, 2019 and 275,392 shares at December 31, 2018. Stock options available for grant totaled 954,454 shares at December 31, 2019.

13 RETIREMENT PLANS AND OTHER POSTRETIREMENT BENEFITS

Tredegar sponsors a noncontributory defined benefit (pension) plan covering certain current and former U.S. employees. The plans for salaried and hourly employees currently in effect is based on a formula using the participant's years of service and compensation or using the participant's years of service and a dollar amount. The plan is closed to new participants and pay for active plan participants for benefit calculations was frozen as of December 31, 2007. As of January 31, 2018, the plan no longer accrued benefits associated with crediting employees for service, thereby freezing all future benefits under the plan.

In addition to providing pension benefits, the Company provides postretirement life insurance and health care benefits for certain groups of employees. Tredegar and retirees share in the cost of postretirement health care benefits, with employees hired on or before January 1, 1993, receiving a fixed subsidy to cover a portion of their health care premiums. The Company eliminated prescription drug coverage for Medicare-eligible retirees as of January 1, 2006. Consequently, Tredegar is not eligible for any federal subsidies.

The following tables reconcile the changes in benefit obligations and plan assets in 2019 and 2018, and reconcile the funded status to prepaid or accrued cost at December 31, 2019 and 2018:

(In thousands)	Pension Benefits		Other Post-Retirement Benefits	
	2019	2018	2019	2018
Change in benefit obligation:				
Benefit obligation, beginning of year	\$ 287,240	\$ 318,123	\$ 6,889	\$ 7,704
Service cost	—	17	26	36
Interest cost	12,222	11,442	290	271
Effect of actuarial (gains) losses related to the following:				
Discount rate change	38,919	(23,653)	894	(546)
Retirement rate assumptions and mortality table adjustments	(2,589)	(914)	21	6
Other	(1,047)	(2,326)	(176)	(285)
Plan participant contributions	—	—	649	656
Benefits paid	(15,982)	(15,449)	(943)	(953)
Benefit obligation, end of year	\$ 318,763	\$ 287,240	\$ 7,650	\$ 6,889
Change in plan assets:				
Plan assets at fair value, beginning of year	\$ 205,367	\$ 226,354	\$ —	\$ —
Actual return on plan assets	20,624	(14,148)	—	—
Employer contributions	8,320	8,610	294	297
Plan participant contributions	—	—	649	656
Benefits paid	(15,982)	(15,449)	(943)	(953)
Plan assets at fair value, end of year	\$ 218,329	\$ 205,367	\$ —	\$ —
Funded status of the plans	\$ (100,434)	\$ (81,873)	\$ (7,650)	\$ (6,889)
Amounts recognized in the consolidated balance sheets:				
Accrued expenses (current)	\$ 168	\$ 182	\$ 470	\$ 456
Pension and other postretirement benefit obligations, net	100,266	81,691	7,180	6,433
Net amount recognized	\$ 100,434	\$ 81,873	\$ 7,650	\$ 6,889

Assumptions used for financial reporting purposes to compute net benefit income or cost and benefit obligations for continuing operations, and the components of net periodic benefit income or cost for continuing operations, are as follows:

(In thousands, except percentages)	Pension Benefits			Other Post-Retirement Benefits		
	2019	2018	2017	2019	2018	2017
Weighted-average assumptions used to determine benefit obligations:						
Discount rate	3.27%	4.40%	3.72%	3.25%	4.37%	3.69%
Expected long-term return on plan assets	5.00%	6.00%	6.50%	n/a	n/a	n/a
Weighted-average assumptions used to determine net periodic benefit cost:						
Discount rate	4.40%	3.72%	4.29%	4.37%	3.69%	4.24%
Expected long-term return on plan assets	6.00%	6.50%	6.50%	n/a	n/a	n/a
Components of net periodic benefit cost:						
Service cost	\$ —	\$ 17	\$ 194	\$ 26	\$ 36	\$ 33
Interest cost	12,222	11,442	12,575	290	271	301
Expected return on plan assets	(13,528)	(15,011)	(14,955)	—	—	—
Amortization of prior service costs and gains or losses	10,891	13,894	12,320	(258)	(243)	(275)
Net periodic benefit cost	\$ 9,585	\$ 10,342	\$ 10,134	\$ 58	\$ 64	\$ 59

Net benefit income or cost is determined using assumptions at the beginning of each year. Funded status is determined using assumptions at the end of each year. The amount of the accumulated benefit obligation is the same as the projected benefit obligation. At December 31, 2019, the effect of a 1% change in the health care cost trend rate assumptions would not impact the post-retirement obligation.

Expected benefit payments for continuing operations over the next five years and in the aggregate for 2025-2029 are as follows:

(In thousands)	Pension Benefits	Other Post-Retirement Benefits
2020	\$ 17,162	\$ 470
2021	17,524	473
2022	17,895	473
2023	18,088	468
2024	18,325	463
2025—2029	91,383	2,202

Amounts recorded in 2019, 2018 and 2017 in accumulated other comprehensive income, before related deferred income taxes, consist of:

(In thousands)	Pension			Other Post-Retirement		
	2019	2018	2017	2019	2018	2017
Prior service cost (benefit)	\$ —	\$ —	\$ 5	\$ —	\$ —	\$ —
Net actuarial (gain) loss	150,047	132,751	144,377	(824)	(1,821)	(1,238)

Pension expense is expected to be \$14.2 million in 2020. The amounts in accumulated other comprehensive income, before related deferred income taxes, that are expected to be recognized as components of net periodic benefit or cost during 2020 are as follows:

(In thousands)	Pension	Other Post-Retirement
Prior service cost (benefit)	\$ —	\$ —
Net actuarial (gain) loss	15,254	(188)

The percentage composition of assets held by pension plans for continuing operations at December 31, 2019, 2018 and 2017 are as follows:

	% Composition of Plan Assets at December 31,		
	2019	2018	2017
Pension plans related to continuing operations:			
Fixed income securities	8.7%	8.6%	7.7%
Large/mid-capitalization equity securities	21.3	18.2	19.0
Small-capitalization equity securities	7.8	6.8	6.4
International and emerging market equity securities	19.7	16.0	15.1
Total equity securities	48.8	41.0	40.5
Private equity and hedge funds	35.0	42.3	44.6
Other assets	7.5	8.1	7.2
Total for continuing operations	100.0%	100.0%	100.0%

Tredegar's targeted allocation percentage for pension plan assets and the expected long-term rate of return on assets used to determine its benefit obligation at December 31, 2019, are as follows:

	Target % Composition of Plan Assets *	Expected Long- term Return %
Pension plans related to continuing operations:		
Fixed income securities	12.0%	2.0%
Large/mid-capitalization equity securities	27.0	5.8
Small-capitalization equity securities	8.0	6.9
International and emerging market equity securities	20.0	5.8
Total equity securities	55.0	6.0
Private equity and hedge funds	33.0	4.5
Total for continuing operations	100.0%	5.0%

* Target percentages for the composition of plan assets represents a neutral position within the approved range of allocations for such assets.

Expected long-term returns are estimated by asset class and generally are based on inflation-adjusted historical returns, volatilities, risk premiums and managed asset premiums. The portfolio of fixed income securities is structured with maturities that generally match estimated benefit payments over the next 1-2 years. The other assets category is primarily comprised of cash and contracts with insurance companies. The Company's primary investment objective is to maximize total return with a strong emphasis on the preservation of capital, and it believes that over the long-term a diversified portfolio of fixed income securities, equity securities, hedge funds and private equity funds has a better risk-return profile than fixed income securities alone. The average remaining duration of benefit payments for the pension plans is about 11.6 years. The Company expects its required contributions to be approximately \$12.3 million in 2020.

Estimates of the fair value of assets held by the Company's pension plan are provided by unaffiliated third parties. Investments in private equity and hedge funds and certain fixed income securities by the Company's pension plan are measured at NAV, which is a practical expedient for measuring fair value. These assets are therefore excluded from the fair value hierarchy for each of the years presented. At December 31, 2019 and 2018, the pension plan assets are categorized by level within the fair value measurement hierarchy as follows:

(In thousands)	Total	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Balances at December 31, 2019				
Large/mid-capitalization equity securities	\$ 46,440	\$ 46,440	\$ —	\$ —
Small-capitalization equity securities	17,135	17,135	—	—
International and emerging market equity securities	43,079	19,117	23,962	—
Fixed income securities	18,911	6,209	12,702	—
Contracts with insurance companies	8,840	—	—	8,840
Other assets	7,585	7,585	—	—
Total plan assets at fair value	\$ 141,990	\$ 96,486	\$ 36,664	\$ 8,840
Private equity and hedge funds	76,339			
Total plan assets, December 31, 2019	\$ 218,329			
Balances at December 31, 2018				
Large/mid-capitalization equity securities	\$ 37,323	\$ 37,323	\$ —	\$ —
Small-capitalization equity securities	13,880	13,880	—	—
International and emerging market equity securities	32,931	13,389	19,542	—
Fixed income securities	17,769	5,886	11,883	—
Contracts with insurance companies	9,899	—	—	9,899
Other assets	6,779	6,779	—	—
Total plan assets at fair value	\$ 118,581	\$ 77,257	\$ 31,425	\$ 9,899
Private equity and hedge funds	86,786			
Total plan assets, December 31, 2018	\$ 205,367			

Tredegar also has a non-qualified supplemental pension plan covering certain employees. Effective December 31, 2005, further participation in this plan was terminated and benefit accruals for existing participants were frozen. The plan was designed to restore all or a part of the pension benefits that would have been payable to designated participants from the principal pension plans if it were not for limitations imposed by income tax regulations. The projected benefit obligation relating to this unfunded plan was \$2.2 million at December 31, 2019 and \$2.0 million at December 31, 2018. Pension expense recognized for this plan was \$0.1 million in 2019, \$0.1 million in 2018 and \$0.1 million in 2017. This information has been included in the preceding pension benefit tables.

Approximately 70 employees at PE Films' manufacturing facility in Kerkrade, The Netherlands are covered by a collective bargaining agreement that includes participation in a multi-employer pension plan. Pension expense recognized for participation in this plan, which is equal to required contributions, was \$0.3 million in 2019, \$0.4 million in 2018 and \$0.4 million in 2017. This information has been excluded from the preceding pension benefit tables.

14 SAVINGS PLAN

Tredegar has a savings plan that allows eligible employees to voluntarily contribute a percentage of their compensation, up to Internal Revenue Service ("IRS") limitations. The provisions of the savings plan provided the following benefits for salaried and certain hourly employees:

- The Company makes matching contributions to the savings plan of \$1 for every \$1 an employee contributes per pay period up to a maximum of 5% of eligible compensation.
- The savings plan includes immediate vesting of matching contributions and automatic enrollment at 3% of eligible compensation unless the employee opts out or elects a different percentage.

The Company also has a non-qualified plan that restores matching benefits for employees suspended from the savings plan due to certain limitations imposed by income tax regulations (“restoration plan”). Charges recognized for these plans were \$3.9 million in 2019, \$3.7 million in 2018 and \$3.5 million in 2017. The Company’s liability under the restoration plan was \$1.4 million at December 31, 2019 (consisting of 62,475 phantom shares of common stock) and \$1.0 million at December 31, 2018 (consisting of 65,280 phantom shares of common stock) and valued at the closing market price on those dates.

The Tredegar Corporation Benefits Plan Trust (the “Trust”) purchased 7,200 shares of the Company’s common stock in 1998 for \$0.2 million and 46,671 shares of its common stock in 1997 for \$1.0 million, as a partial hedge against the phantom shares held in the restoration plan. There have been no shares purchased since 1998 except for re-invested dividends. The cost of the shares held by the Trust is shown as a reduction to shareholders’ equity in the consolidated balance sheets.

15 LEASES

Tredegar has various lease agreements with terms up to 12 years, including leases of real estate, office equipment and vehicles. Some leases include options to purchase the leased asset, terminate the agreement or extend the term of the agreement for one or more years. These options are included in the lease term when it is reasonably certain that the option will be exercised.

At inception, the Company determines if an arrangement contains a lease and whether that lease meets the classification criteria of a finance or operating lease. The Company has elected to not record short-term leases with an original lease term of one year or less in the consolidated balance sheet. To the extent such leases contain renewal options that the Company intends to exercise, the related ROU asset and lease liability are included in the consolidated balance sheet. Some of the Company’s lease arrangements contain lease components (e.g. minimum rent payments) and non-lease components (e.g. maintenance, labor charges, etc.). The Company generally accounts for the lease and non-lease components as a single lease component.

Certain of the Company’s lease agreements include rental payments that are adjusted periodically for an index or rate. The leases are initially measured using the projected payments adjusted for the index or rate in effect at the commencement date. The Company’s lease agreements do not contain any material residual value guarantees or material restrictive covenants.

Operating Leases

Operating leases are included in “Right-of-use lease assets”, “Lease liabilities - short-term” and “Lease liabilities - long-term” on the consolidated balance sheets. These assets and liabilities are recognized at the commencement date based on the present value of remaining lease payments over the lease term using the Company’s secured incremental borrowing rates, adjusted for term and geographic location using country-based swap rates. After reviewing new lease contracts in 2019 and the lease contracts in the implementation effort, the Company found no instance where it could readily determine the rate implicit in the lease.

Lease expense for operating leases is recognized on a straight-line basis over the lease term. Variable lease expense is recognized in the period in which the obligation for those payments is incurred. Depending upon the specific use of the ROU asset, lease expense is included in the “Cost of goods sold”, “Freight”, “Selling, general and administrative”, and “Research and development” line items on the consolidated statements of income. Lease income is not material to the results of operations for the year ended December 31, 2019.

The following table presents information about the amount, timing and uncertainty of cash flows arising from the Company's operating leases as of December 31, 2019:

(In thousands)	As of December 31, 2019	
Maturity of Lease Liabilities	Future Lease Payments	
2020	\$	3,820
2021		3,589
2022		2,622
2023		2,425
2024		2,405
Thereafter		9,786
Total undiscounted operating lease payments		24,647
Less: Imputed interest		3,956
Present value of operating lease liabilities	\$	20,691
Balance Sheet Classification		
Lease liabilities, short-term	\$	3,002
Lease liabilities, long-term		17,689
Total operating lease liabilities	\$	20,691
Other Information:		
Weighted-average remaining lease term for operating leases		8 Years
Weighted-average discount rate for operating leases		4.32%

Rental expense was \$5.2 million in 2018 and \$4.4 million in 2017. Rental commitments under all noncancellable leases as of December 31, 2018, were as follows:

(In thousands)		
2019	\$	4,445
2020		4,007
2021		3,591
2022		2,391
2023		1,245
Remainder		2,630
Total minimum lease payments	\$	18,309

Cash Flows

An initial right-of-use asset of \$21 million was recognized as a non-cash asset addition and an initial lease liability of \$22 million was recognized as a non-cash liability addition with the adoption of the new lease accounting standard.

Operating Lease Costs

Operating lease costs were \$5.6 million in 2019. These costs are primarily related to long-term operating leases, but also include amounts for variable leases and short-term leases.

16 INCOME TAXES

Income (loss) before income taxes and income tax expense (benefit) are as follows:

(In thousands)	2019	2018	2017
Income (loss) before income taxes:			
Domestic	\$ 35,731	\$ 17,663	\$ 67,549
Foreign	22,441	18,705	(82,461)
Total	\$ 58,172	\$ 36,368	\$ (14,912)
Current income tax expense (benefit):			
Federal	\$ 1,202	\$ (187)	\$ (20,560)
State	989	815	800
Foreign	1,801	2,090	3,247
Total	3,992	2,718	(16,513)
Deferred income tax expense (benefit):			
Federal	17,357	8,708	(23,302)
State	311	364	(949)
Foreign	(11,747)	(264)	(12,399)
Total	5,921	8,808	(36,650)
Total income tax expense (benefit)	\$ 9,913	\$ 11,526	\$ (53,163)

The significant differences between the U.S. federal statutory rate and the effective income tax rate for continuing operations are as follows:

(In thousands, except percentages)	2019		2018		2017	
	Amount	%	Amount	%	Amount	%
Income tax expense (benefit) at federal statutory rate	\$ 12,223	21.0	\$ 7,638	21.0	\$ (5,219)	35.0
U.S. tax on foreign branch income	15,865	27.2	1,901	5.2	—	—
Foreign rate differences	2,211	3.8	1,805	5.0	2,546	(17.1)
State taxes, net of federal income tax benefit	987	1.7	520	1.4	656	(4.4)
Non-deductible expenses	467	0.8	322	0.9	434	(2.9)
Stock-based compensation	283	0.5	175	0.5	199	(1.3)
Global intangible low tax income	68	0.1	—	—	—	—
Valuation allowance for capital loss carryforwards	60	0.1	553	1.5	83	(0.6)
Unremitted earnings from foreign operations	60	0.1	126	0.3	—	—
Non-deductible goodwill and asset impairment loss	—	—	1,801	5.1	228	(1.5)
Increase in value of kaléo investment held abroad	—	—	—	—	(2,326)	15.6
Settlement of Terphane acquisition escrow	—	—	—	—	(4,200)	28.2
Impact of U.S. Tax Cuts and Jobs Act	—	—	—	—	(4,433)	29.7
Worthless stock deductions	—	—	—	—	(61,413)	411.9
Foreign derived intangible income deduction	(273)	(0.5)	(1,050)	(2.9)	—	—
Changes in estimates related to prior year tax provision	(721)	(1.2)	(303)	(0.8)	320	(2.1)
Research and development tax credit	(830)	(1.4)	(420)	(1.2)	(375)	2.5
Dividend received deduction net of foreign withholding tax	(1,016)	(1.7)	—	—	—	—
Brazilian tax incentive	(1,999)	(3.4)	(1,340)	(3.7)	—	—
Tax contingency accruals and tax settlements	(2,543)	(4.4)	773	2.1	(420)	2.8
Valuation allowance due to foreign losses and impairments	(14,929)	(25.6)	(975)	(2.7)	20,757	(139.3)
Income tax expense (benefit) at effective income tax rate	\$ 9,913	17.1	\$ 11,526	31.7	\$ (53,163)	356.5

During 2019, the Company recorded a deferred tax expense of \$1.0 million as a valuation allowance to offset deferred tax assets for loss carryovers at our Hungarian subsidiary that the Company does not believe are more likely than not to be realized before the carryover periods expire. Due to recent favorable earnings trends, the Company reversed a \$12.4 million valuation allowance on the net deferred tax assets of its Brazilian subsidiary Terphane Ltda. Because Terphane Ltda. is taxed as a foreign branch for US tax purposes, Tredegar also recorded a related deferred tax liability of \$12.4 million for the reduction in foreign tax credits that would result from Terphane Ltda. realizing this net deferred tax asset.

Income taxes in 2018 were primarily impacted by not recording a tax benefit on a portion of the PE Films Personal Care goodwill impairment charge, the additional tax impact of Tredegar's Brazilian subsidiaries being included in its US consolidated tax return as foreign branches as well as the tax impact of the local statutory tax rates of Tredegar's foreign subsidiaries being higher than the current US tax rate of 21%. These increases to income tax expense were offset by recording a tax benefit on a portion of foreign losses and impairments, by the tax benefit of the foreign derived intangible income deduction under the TCJA, and by the benefit of tax incentives in Brazil.

During 2017, the Company completed a plan to liquidate for tax purposes one of its domestic subsidiaries, which allowed it to claim an income tax benefit on the write-off of the stock basis of Terphane, Inc. (Terphane's U.S. affiliate) on its 2017 U.S. federal income tax return. The Company recorded an income tax benefit during the second quarter of 2017 of \$8.1 million related to this worthless stock deduction, net of valuation allowances and accrual for uncertain tax positions. Also, during the fourth quarter of 2017, as a result of valuation activities and other efforts, the Company claimed an ordinary loss for U.S. federal and state income tax purposes of \$153 million for the write-off of the stock basis of Terphane Limitada (Terphane's Brazilian entity). The full tax benefit accrued for the Terphane Limitada worthless stock deduction at the 35% U.S. corporate income tax rate applicable for 2017 was approximately \$54 million. This benefit was reduced by \$4.8 million in conjunction with the TCJA for the portion of the deduction that is expected to be applied to income generated after 2017 where the new U.S. federal corporate income tax rate of 21% is applicable. The significant foreign rate difference for 2017 is primarily due to the difference between Hungary's income tax rate of 9% and the U.S. federal corporate income tax rate of 35%.

Tredegear accrues U.S. federal income taxes on unremitted earnings of all foreign subsidiaries where required. However, due to changes in the taxation of dividends under TCJA, Tredegear will only record U.S. federal income taxes on unremitted earnings of its foreign subsidiaries where Tredegear cannot take steps to eliminate any potential tax on future distributions from its foreign subsidiaries. Prior to the second quarter of 2016, deferred U.S. federal income taxes had not been recorded for the undistributed earnings for Terphane Limitada because the Company had intended to permanently reinvest these earnings. Due to concerns about the political and economic conditions in Brazil, Terphane Limitada began making cash distributions to the Company in 2016. During the second quarter of 2016, Terphane Limitada paid a dividend of \$10.7 million to the Company. During the second quarter of 2017, the Company recognized a net tax benefit of \$0.4 million associated with additional U.S. tax related to this repatriation of cash from Brazil offset by the reversal of related tax contingencies. Because of the accumulation of significant losses related to foreign currency translations at Terphane Limitada, there were no deferred income tax liabilities associated with the U.S. federal income taxes and foreign withholding taxes on Terphane Limitada's undistributed earnings as of and December 31, 2019 and 2018.

The Brazilian federal statutory income tax rate is a composite of 34.0% (25.0% of income tax and 9.0% of social contribution on income). Terphane's manufacturing facility in Brazil is the beneficiary of certain income tax incentives that allow for a reduction in the statutory Brazilian federal income tax rate levied on the operating profit of its products. These incentives produce a current tax rate of 15.25% for Terphane (6.25% of income tax and 9.0% social contribution on income). The incentives were originally granted for a 10-year period commencing January 1, 2015 and expiring at the end of 2024. Terphane Brazil has been granted an additional three years of tax incentives through the end of 2027. The benefit from the tax incentives was \$2.0 million and \$1.3 million in 2019 and 2018, respectively, and was immaterial for 2017.

Deferred income tax liabilities and deferred income tax assets at December 31, 2019 and 2018, are as follows:

(In thousands)	2019	2018
Deferred income tax liabilities:		
Amortization of goodwill and identifiable intangibles	\$ 12,023	\$ 13,416
Depreciation	7,065	—
Foregone tax credits on foreign branch income	12,361	—
Foreign currency translation gain adjustment	—	300
Excess of carrying value over tax basis of investment in kaléo	17,504	15,131
Right-of-use leased assets	751	—
Other	549	184
Total deferred income tax liabilities	50,253	29,031
Deferred income tax assets:		
Depreciation	—	2,399
Pensions	21,025	17,153
Employee benefits	7,964	6,676
Excess capital losses	1,551	1,519
Inventory	3,734	3,644
Asset write-offs, divestitures and environmental accruals	1,355	1,200
Tax benefit on U.S. federal, state and foreign NOL and credit carryforwards	19,658	23,507
Timing adjustment for unrecognized tax benefits on uncertain tax positions, including portion relating to interest and penalties	187	267
Allowance for doubtful accounts	383	382
Lease liabilities	967	—
Derivative financial instruments	345	432
Foreign currency translation gain adjustment	285	—
Deferred income tax assets before valuation allowance	57,454	57,179
Less: Valuation allowance	5,091	24,736
Total deferred income tax assets	52,363	32,443
Net deferred income tax (assets) liabilities	\$ (2,110)	\$ (3,412)
Amounts recognized in the consolidated balance sheets:		
Deferred income tax assets (noncurrent)	\$ 13,129	\$ 3,412
Deferred income tax liabilities (noncurrent)	11,019	—
Net deferred income tax assets (liabilities)	\$ 2,110	\$ 3,412

Except as noted below, the Company believes that it is more likely than not that future taxable income will exceed future tax-deductible amounts thereby resulting in the realization of deferred income tax assets. The Company has estimated gross federal, state and foreign tax credits and net operating loss carryforwards of \$19.7 million and \$23.5 million at December 31, 2019 and 2018, respectively. The U.S. federal tax credits will expire in 2026. The U.S. federal net operating loss carryforwards were fully utilized in 2018. The majority of the foreign net operating loss carryforwards do not expire. The U.S. state carryforwards expire at different points over the next 9 to 20 years.

Valuation allowances of \$3.8 million, \$7.7 million and \$8.5 million at December 31, 2019, 2018 and 2017, respectively, are recorded against the tax benefit on U.S. federal, state and foreign tax credits and net operating loss carryforwards generated by certain foreign and domestic subsidiaries that may not be recoverable in the carryforward period. The valuation allowance for excess capital losses from investments and other related items was \$1.3 million, \$1.2 million and \$4.4 million at December 31, 2019, 2018 and 2017, respectively. The 2018 balance decreased primarily due to the expiration of a portion of the capital loss carryforwards. The amount of the deferred income tax asset considered realizable, however, could be adjusted in the near term if estimates of the fair value of certain investments during the carryforward period change. Tredegar continues to evaluate opportunities to utilize capital loss carryforwards prior to their expiration at various dates in the future. As circumstances and events warrant, allowances will be reversed when it is more likely than not that future taxable income will

exceed deductible amounts, thereby resulting in the realization of deferred income tax assets. The valuation allowance for asset impairments in foreign jurisdictions where the Company believes it is more likely than not that the deferred income tax asset will not be realized was \$0.0 million, \$15.8 million and \$15.6 million at December 31, 2019, 2018 and 2017, respectively. Due to recent favorable earnings trends, the Company reversed a \$12.4 million valuation allowance on the net deferred tax assets of its Brazilian subsidiary Terphane Ltda. Because Terphane Ltda. is taxed as a foreign branch for US tax purposes, Tredegar also recorded a related deferred tax liability of \$12.4 million for the reduction in foreign tax credits that would result from Terphane Ltda. realizing this net deferred tax asset.

A reconciliation of the Company's unrecognized uncertain tax positions since January 1, 2017, is shown below:

(In thousands)	Years Ended December 31,		
	2019	2018	2017
Balance at beginning of period	\$ 3,361	\$ 1,962	\$ 3,315
Increase (decrease) due to tax positions taken in:			
Current period	12	13	27
Prior period	49	1,430	(532)
Increase (decrease) due to settlements with taxing authorities	(151)	—	(51)
Reductions due to lapse of statute of limitations	(2,390)	(44)	(797)
Balance at end of period	\$ 881	\$ 3,361	\$ 1,962

Additional information related to unrecognized uncertain tax positions since January 1, 2017 is summarized below:

(In thousands)	Years Ended December 31,		
	2019	2018	2017
Gross unrecognized tax benefits on uncertain tax positions (reflected in current income tax, other noncurrent liability accounts, or deferred tax assets in the balance sheet)	\$ 881	\$ 3,361	\$ 1,962
Deferred income tax assets related to unrecognized tax benefits on uncertain tax positions (reflected in deferred income tax accounts in the balance sheet)	(163)	(211)	(153)
Net unrecognized tax benefits on uncertain tax positions, which would impact the effective tax rate if recognized	718	3,150	1,809
Interest and penalties accrued on deductions taken relating to uncertain tax positions (approximately \$(144), \$107 and \$(1) reflected in income tax expense in the income statement in 2019, 2018 and 2017, respectively, with the balance shown in current income tax and other noncurrent liability accounts in the balance sheet)	100	243	136
Related deferred income tax assets recognized on interest and penalties	(23)	(56)	(32)
Interest and penalties accrued on uncertain tax positions net of related deferred income tax benefits, which would impact the effective tax rate if recognized	77	187	104
Total net unrecognized tax benefits on uncertain tax positions reflected in the balance sheet, which would impact the effective tax rate if recognized	\$ 795	\$ 3,337	\$ 1,913

Tredegar, or one of its subsidiaries, files income tax returns in the U.S. federal jurisdiction, various states and jurisdictions outside the U.S. With few exceptions, Tredegar is no longer subject to U.S. federal, state or non-U.S. income tax examinations by tax authorities for years before 2016. The Company anticipates that it is reasonably possible that Federal and state income tax audits or statutes may settle or close within the next 12 months, which could result in the recognition of up to approximately \$0.7 million of the balance of unrecognized tax positions, including any payments that may be made.

17 ASSET IMPAIRMENTS AND COSTS ASSOCIATED WITH EXIT AND DISPOSAL ACTIVITIES

The Company plans to close its PE Films manufacturing facility in Lake Zurich, Illinois, which produces elastic materials. Production at the Lake Zurich plant is expected to cease during the first half of 2020 with product transfers to the new elastic production lines at Terre Haute, Indiana (“Lake Zurich plant shutdown”). As a result of the Lake Zurich plant shutdown, the Company expects to recognize pre-tax cash costs of \$7.6 million comprised of (i) customer-related costs (\$0.7 million), (ii) severance and other employee related costs (\$1.8 million), and (iii) asset disposal and other cash costs (\$5.1 million). In addition, the Company expects non-cash asset write-offs and accelerated depreciation of \$1.6 million. Total expenses associated with the Lake Zurich plant shutdown are \$2.7 million since project inception. Cash expenditures were \$0.5 million in 2019. Proceeds from the expected sale of Lake Zurich’s real property are estimated at approximately \$5 million. The Company anticipates that the Lake Zurich plant shutdown will be completed by the end of 2020.

The Company plans to consolidate the production of certain PE Films personal care products in Europe over the next twelve months (“PC Europe consolidation”). As a result of this consolidation, the Company expects to recognize pre-tax cash costs of \$1.7 million, primarily for severance and customer-related costs. Total expenses associated with the PC Europe consolidation are \$0.8 million since project inception. Cash expenditures were \$0.5 million in 2019.

In June 2018, the Company announced plans to close its facility in Shanghai, China, which primarily produced plastic films used as components for personal care products (“Shanghai plant shutdown”). Production ceased at this plant during the fourth quarter of 2018. Total expenses associated with the Shanghai plant shutdown are \$4.1 million since project inception. Cash expenditures were \$0.8 million in 2019 and \$3.3 million since project inception. The plant facilities were sold in the third quarter of 2019, resulting in a pre-tax gain of \$6.3 million, reported in “Other income (expense), net” in the consolidated statements of income. The Shanghai plant shutdown was completed in the fourth quarter of 2019.

Other pre-tax charges in 2019 include restructuring costs in PE Films for severance in the amount of \$0.8 million, the write-off of inventory at PE Films’ Personal Care facility in Rétság, Hungary in the amount of \$0.2 million, and the write-off of a Personal Care production line at the Guangzhou, China facility in the amount of \$0.4 million.

A reconciliation of the beginning and ending balances of accrued expenses associated with exit and disposal activities and charges associated with asset impairments and reported as “Asset impairments and costs associated with exit and disposal activities, net of adjustments” in the consolidated statements of income for the years ended December 31, 2019, 2018 and 2017 is as follows:

(In Thousands)	Severance	Asset Impairments	Other	Total
Balance at January 1, 2017	\$ 1,854	\$ —	\$ 554	\$ 2,408
For the year ended December 31, 2017:				
Charges:				
Flexible Packaging Films impairment	—	101,254	—	101,254
Other restructuring charges ^(a)	589	341	304	1,234
	589	101,595	304	102,488
Cash spend	(1,816)	—	(382)	(2,198)
Charges against assets	—	(101,595)	—	(101,595)
Balance at January 1, 2018	627	—	476	1,103
For the year ended December 31, 2018:				
Charges:				
Shanghai plant shutdown	1,832	233	98	2,163
Other restructuring charges ^(b)	822	—	20	842
	2,654	233	118	3,005
Cash spend	(2,665)	—	(434)	(3,099)
Charges against assets	—	(141)	—	(141)
Reversed to income	—	(92)	—	(92)
Balance at January 1, 2019	616	—	160	776
For the year ended December 31, 2019:				
Charges:				
Shanghai plant shutdown	113	—	716	829
Lake Zurich plant shutdown	874	191	58	1,123
PC Europe consolidation	588	96	—	684
Other restructuring charges ^(c)	842	595	52	1,489
	2,417	882	826	4,125
Cash spend	(1,739)	—	(900)	(2,639)
Charges against assets	—	(882)	—	(882)
Balance at December 31, 2019	\$ 1,294	\$ —	\$ 86	\$ 1,380

(a) Other restructuring charges in 2017 include PE Films severance (\$0.2 million) and an impairment of a production line at its Rétság, Hungary facility (\$0.2 million), Aluminum Extrusions severance (\$0.1 million), Corporate severance (\$0.3 million) and closure costs at the shutdown Kentland facility (\$0.2 million).

(b) Other restructuring charges in 2018 include severance of \$0.7 million and \$0.1 million at PE Films and Aluminum Extrusions, respectively.

(c) Other restructuring charges in 2019 include PE Films severance (\$0.8 million), write-off of inventory at its Personal Care facility in Rétság, Hungary (\$0.2 million), and write-off of a Personal Care production line at the Guangzhou, China facility (\$0.4 million).

18 CONTINGENCIES

Tredegar is involved in various stages of investigation and remediation relating to environmental matters at certain current and former plant locations. Where the Company has determined the nature and scope of any required environmental remediation activity, estimates of cleanup costs have been obtained and accrued. As efforts continue to maintain compliance with applicable environmental laws and regulations, additional contingencies may be identified. If additional contingencies are identified in the future, the Company’s practice is to determine at that time the nature and scope of those contingencies, obtain and accrue estimates of the cost of remediation, and perform remediation. While the Company believes it is currently adequately accrued for known environmental issues, it is possible that unexpected future costs for known or unknown

environmental issues could have a material adverse effect on its financial condition, results of operations and cash flows at that time.

The Company is involved in various other legal actions arising in the normal course of business. After taking into consideration the relevant information, the Company believes that it has sufficiently accrued for probable losses and that the actions will not have a material adverse effect on its financial position.

From time to time, the Company enters into transactions with third parties in connection with the sale of assets or businesses in which it agrees to indemnify the buyers or third parties involved in the transaction, or in which the sellers or third parties involved in the transaction agree to indemnify Tredegar, for certain liabilities or risks related to the assets or business. Also, in the ordinary course of its business, the Company may enter into agreements with third parties for the sale of goods or services that may contain indemnification provisions. In the event that an indemnification claim is asserted, liability for indemnification would be subject to an assessment of the underlying facts and circumstances under the terms of the applicable agreement. For these reasons, Tredegar is unable to estimate the maximum amount of the potential future liability under the indemnity provisions of these agreements. The Company does, however, accrue for losses for any known contingent liability, including those that may arise from indemnification provisions, when future payment is probable and the amount is reasonably estimable. The Company discloses contingent liabilities if the probability of loss is reasonably possible and material.

19 SELECTED QUARTERLY FINANCIAL DATA

Tredegar Corporation and Subsidiaries
(In Thousands, Except Per-Share Amounts)
(Unaudited)

	First Quarter	Second Quarter	Third Quarter	Fourth Quarter
For the year ended December 31, 2019				
Sales	\$ 248,466	\$ 248,248	\$ 243,217	\$ 232,427
Gross profit	38,792	46,780	42,668	40,546
Net income (loss)	\$ 19,785	\$ 14,477	\$ 17,133	\$ (3,135)
Earnings (loss) per share:				
Basic	\$ 0.60	\$ 0.44	\$ 0.51	\$ (0.09)
Diluted	\$ 0.60	\$ 0.44	\$ 0.51	\$ (0.09)
Shares used to compute earnings (loss) per share:				
Basic	33,123	33,270	33,271	33,278
Diluted	33,127	33,278	33,285	33,278
For the year ended December 31, 2018				
Sales	\$ 258,711	\$ 263,759	\$ 267,294	\$ 275,707
Gross profit	46,732	44,652	40,478	47,826
Net income	\$ 18,165	\$ 14,722	\$ (34,201)	\$ 26,157
Earnings per share:				
Basic	\$ 0.55	\$ 0.45	\$ (1.03)	\$ 0.79
Diluted	\$ 0.55	\$ 0.44	\$ (1.03)	\$ 0.79
Shares used to compute earnings per share:				
Basic	32,982	33,074	33,110	33,103
Diluted	32,988	33,108	33,110	33,112

Due to rounding, the sum of quarterly amounts presented in the table above may not add up precisely to the corresponding full year amounts.

Item 16. FORM 10-K SUMMARY

Not Applicable.

EXHIBIT INDEX

- 2.1 Stock Purchase Agreement, dated as of February 1, 2017, by and among Futura Industries Corporation, Futura Corporation, Susan D. Johnson, The Susan D. Johnson Trust, Ken Wells, The William L. Bonnell Company, Inc., and, in his capacity as Sellers' Representative, Brent F. Lloyd (filed as Exhibit 2.1 of Tredegar's Current Report on Form 8-K (File No. 1-10258), filed on February 2, 2017, and incorporated herein by reference)
- 3.1 Amended and Restated Articles of Incorporation of Tredegar (filed as Exhibit 3.1 to Tredegar's Annual Report on Form 10-K (File No. 1-10258) for the year ended December 31, 2004, and incorporated herein by reference)
- 3.1.1 Articles of Amendment to Amended and Restated Articles of Incorporation of Tredegar (filed as Exhibit 3.3 to Tredegar's Annual Report on Form 10-K (File No. 1-10258) for the year ended December 31, 2004, and incorporated herein by reference)
- 3.1.2 Articles of Amendment to Amended and Restated Articles of Incorporation of Tredegar, as of May 24, 2013 (filed as Exhibit 3.1 to Tredegar's Current Report on Form 8-K (File No. 1-10258), filed on May 29, 2013 and incorporated herein by reference)
- 3.1.3 Articles of Amendment to Amended and Restated Articles of Incorporation of Tredegar, as of May 4, 2016 (filed as Exhibit 3.1 to Tredegar's Current Report on Form 8-K (File No. 1-10258), filed on May 6, 2016, and incorporated herein by reference)
- 3.2 Amended and Restated Bylaws of Tredegar (filed as Exhibit 3.1 to Tredegar's Current Report on Form 8-K (File No. 1-10258), filed on February 24, 2017, and incorporated herein by reference)
- +4.1 Description of Registered Securities
- 10.1 Amended and Restated Credit Agreement, dated as of June 28, 2019, among Tredegar, as borrower, the lenders named therein, JPMorgan Chase Bank, N.A., as administrative agent, SunTrust Bank, Citizens Bank, N.A. and PNC Bank, National Association, as co-syndication agents, and U.S. Bank National Association, Bank of America, N.A. and Wells Fargo Bank, National Association, as co-documentation agents, and the other lenders party thereto (filed as Exhibit 4.1 to Tredegar's Current Report on Form 8-K (File No. 1-10258), filed on July 1, 2019, and incorporated herein by reference)
- 10.1.1 Amended and Restated Guaranty, dated as of June 28, 2019, by and among the subsidiaries of Tredegar listed on the signature pages thereto in favor of JPMorgan Chase Bank, N.A., as administrative agent, for the ratable benefit of the Holders of Guaranteed Obligations (as defined therein) filed as Exhibit 4.2 to Tredegar's Current Report on Form 8-K (File No. 1-10258), filed on July 1, 2019, and incorporated herein by reference)
- 10.1.2 Amended and Restated Pledge and Security Agreement, dated as of June 28, 2019, by and among Tredegar and the subsidiaries of Tredegar listed on the signature pages thereto and JPMorgan Chase Bank, N.A., as administrative agent, for the ratable benefit of the Secured Parties (as defined therein) filed as Exhibit 4.3 to Tredegar's Current Report on Form 8-K (File No. 1-10258), filed on July 1, 2019, and incorporated herein by reference)
- 10.2 Reorganization and Distribution Agreement, dated as of June 1, 1989, between Tredegar and Ethyl Corporation (filed as Exhibit 10.1 to Tredegar's Annual Report on Form 10-K (File No. 1-10258) for the year ended December 31, 2004, and incorporated herein by reference)
- *10.3 Employee Benefits Agreement, dated as of June 1, 1989, between Tredegar and Ethyl Corporation (filed as Exhibit 10.2 to Tredegar's Annual Report on Form 10-K (File No. 1-10258) for the year ended December 31, 2004, and incorporated herein by reference)
- 10.4 Tax Sharing Agreement, dated as of June 1, 1989, between Tredegar and Ethyl Corporation (filed as Exhibit 10.3 to Tredegar's Annual Report on Form 10-K (File No. 1-10258) for the year ended December 31, 2004, and incorporated herein by reference)
- 10.5 Indemnification Agreement, dated as of June 1, 1989, between Tredegar and Ethyl Corporation (filed as Exhibit 10.4 to Tredegar's Annual Report on Form 10-K (File No. 1-10258) for the year ended December 31, 2004, and incorporated herein by reference)
- *10.6 Tredegar Industries, Inc. Retirement Benefit Restoration Plan (filed as Exhibit 10.7 to Tredegar's Annual Report on Form 10-K (File No. 1-10258) for the year ended December 31, 2004, and incorporated herein by reference)
- *10.6.1 Amendment to the Tredegar Industries, Inc. Retirement Benefit Restoration Plan (filed as Exhibit 10.7.1 to Tredegar's Annual Report on Form 10-K (File No. 1-10258) for the year ended December 31, 2004, and incorporated herein by reference)
- *10.7 Tredegar Industries, Inc. Savings Plan Benefit Restoration Plan (filed as Exhibit 10.6 to Tredegar's Annual Report on Form 10-K (File No. 1-10258) for the year ended December 31, 2013, and incorporated herein by reference)

- *10.7.1 Resolutions of the Executive Committee of the Board of Directors of Tredegar adopted on December 28, 2004 (effective as of December 31, 2004) amending the Tredegar Corporation Retirement Savings Plan Benefit Restoration Plan (filed as Exhibit 10.9.1 to Tredegar's Current Report on Form 8-K (File No. 1-10258), filed on December 30, 2004, and incorporated herein by reference)
- *10.8 Tredegar 2004 Equity Incentive Plan as Amended and Restated Effective March 27, 2009 (filed as Annex 1 to Tredegar's Definitive Proxy Statement on Schedule 14A (File No. 1-10258) filed on April 14, 2009 and incorporated herein by reference)
- *10.9 Form of Notice of Nonstatutory Stock Option Grant and Nonstatutory Stock Option Terms and Conditions (filed as Exhibit 10.3 to Tredegar's Current Report on Form 8-K (File No. 1-10258) filed on February 27, 2013, and incorporated herein by reference)
- *10.10 Form of Notice of Stock Unit Award and Stock Unit Award Terms and Conditions (filed as Exhibit 10.1 to Tredegar's Current Report on Form 8-K (File No. 1-10258), filed on March 1, 2016, and incorporated herein by reference)
- *10.11 Form of Notice of Stock Award and Stock Award Terms and Conditions (filed as Exhibit 10.2 to Tredegar's Current Report on Form 8-K (File No. 1-10258), filed on March 1, 2016, and incorporated herein by reference)
- 10.12 Agreement, dated as of February 19, 2014, by and among Tredegar, John D. Gottwald, William M. Gottwald and Floyd D. Gottwald, Jr. (filed as Exhibit 10.1 to Tredegar's Current Report on Form 8-K (File No. 1-10258), filed on February 20, 2014, and incorporated herein by reference)
- *10.13 Severance Agreement with D. Andrew Edwards, dated June 25, 2015 (filed as Exhibit 10.3 to Tredegar's Current Report on Form 8-K (file No. 1-10258) filed on June 29, 2015, and incorporated herein by reference)
- *10.13.1 First Amendment to Severance Agreement with D. Andrew Edwards, dated February 25, 2016 (filed as Exhibit 10.3 to Tredegar's Current Report on Form 8-K (File No. 1-10258), filed on March 1, 2016, and incorporated herein by reference)
- *10.14 Severance Agreement with Michael J. Schewel, dated May 9, 2016 (filed as Exhibit 10.17 to Tredegar's Annual Report on Form 10-K/A (File No. 1-10258) for the year ended December 31, 2016, and incorporated herein by reference)
- *10.15 Tredegar 2018 Equity Incentive Plan (filed as Annex A to Tredegar's Definitive Proxy Statement on Schedule 14A (File No. 1-10258) filed on March 22, 2018, and incorporated herein by reference)
- *10.16 Form of Notice of Nonstatutory Stock Option Grant and Nonstatutory Stock Option Terms and Conditions (filed as Exhibit 10.1 to Tredegar's Current Report on Form 8-K (File No. 1-10258), filed on May 7, 2018, and incorporated herein by reference)
- 10.17 Form of Notice of Nonstatutory Stock Option Grant and Nonstatutory Stock Option Terms and Conditions (filed as Exhibit 10.3 to Tredegar Corporation's Registration Statement on Form S-8 (Registration No. 333-230386), filed on March 19, 2019 and incorporated herein by reference)
- +21 Subsidiaries of Tredegar
- +23.1 Consent of KPMG LLP, Independent Registered Public Accounting Firm
- +23.2 Consent of PricewaterhouseCoopers, LLP, Independent Registered Public Accounting Firm
- +31.1 Certification of President and Chief Executive Officer of Tredegar, pursuant to Rules 13a-14(a) and 15d-14(a) promulgated under the Securities Exchange Act of 1934, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002
- +31.2 Certification of Vice President and Chief Financial Officer (Principal Financial Officer) of Tredegar, pursuant to Rules 13a-14(a) and 15d-14(a) promulgated under the Securities Exchange Act of 1934, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002
- +32.1 Certification of President and Chief Executive Officer of Tredegar, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002
- +32.2 Certification of Vice President and Chief Financial Officer (Principal Financial Officer) of Tredegar, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002
- +101 XBRL Instance Document and Related Items

* Denotes compensatory plans or arrangements or management contracts.

+ Filed herewith

SIGNATURES

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

TREDEGAR CORPORATION
(Registrant)

Dated: March 16, 2020

By /s/ John M. Steitz

John M. Steitz

President and Chief Executive Officer

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the registrant and in the capacities indicated on March 16, 2020.

<u>Signature</u>	<u>Title</u>
<u>/s/ John M. Steitz</u> (John M. Steitz)	President, Chief Executive Officer and Director (Principal Executive Officer)
<u>/s/ D. Andrew Edwards</u> (D. Andrew Edwards)	Vice President and Chief Financial Officer (Principal Financial Officer)
<u>/s/ Frasier W. Brickhouse, II</u> (Frasier W. Brickhouse, II)	Corporate Treasurer and Controller (Principal Accounting Officer)
<u>/s/ John D. Gottwald</u> (John D. Gottwald)	Chairman of the Board of Directors
<u>/s/ George C. Freeman, III</u> (George C. Freeman, III)	Director
<u>/s/ William M. Gottwald</u> (William M. Gottwald)	Director
<u>/s/ Kenneth R. Newsome</u> (Kenneth R. Newsome)	Director
<u>/s/ Gregory A. Pratt</u> (Gregory A. Pratt)	Director
<u>/s/ Thomas G. Snead, Jr.</u> (Thomas G. Snead, Jr.)	Director
<u>/s/ Carl E. Tack, III</u> (Carl E. Tack, III)	Director
<u>/s/ Anne G. Waleski</u> (Anne G. Waleski)	Director

Corporate Information

CORPORATE OFFICERS AND OPERATING COMPANY MANAGEMENT

John M. Steitz
President and
Chief Executive Officer

D. Andrew Edwards
Vice President and
Chief Financial Officer

Michael J. Schewel
Vice President, General Counsel
and Corporate Secretary

W. Brook Hamilton
President, Bonnell Aluminum

Jose Bosco Silveira, Jr.
President, Flexible
Packaging Films

Jennifer Aspell
President,
Bright View Technologies

Arijit (Bapi) DasGupta
President, Surface Protection

J. Stephen Prince
President, Personal Care

PE Films

DIRECTORS

John D. Gottwald²
Chairman of the Board
Tredegar Corporation

Kenneth R. Newsome^{3, 5}
President and
Chief Executive Officer
Markel Food Group

John M. Steitz²
President and Chief Executive
Officer
Tredegar Corporation

- 1) Audit Committee
- 2) Executive Committee
- 3) Executive Compensation
Committee
- 4) Nominating and Governance
Committee
- 5) Independent Director

George C. Freeman, III^{3, 4, 5}
Chairman of the Board
Universal Corporation

Gregory A. Pratt^{1, 4, 5}
Chairman of the Board
Carpenter Technology
Corporation

Carl E. Tack, III^{1, 4, 5}
Clinical Professor
Mason School of Business
College of William and Mary

William M. Gottwald²
Retired
Albemarle Corporation

Thomas G. Snead, Jr.^{1, 5}
Retired
Wellpoint, Inc.

Anne G. Waleski^{1, 3, 5}
Retired
Markel Corporation

SHAREHOLDER INFORMATION

**CORPORATE
HEADQUARTERS**
1100 Boulders Parkway
Richmond, Virginia 23225
Phone: 804-330-1000
Website: www.tredegar.com

NUMBER OF EMPLOYEES
3,000

STOCK LISTING
New York Stock Exchange
Ticker Symbol: TG

Additional shareholder
information is available
on the investor section
of the Tredegar website
@ [www.tredegar.com/
investors/IR](http://www.tredegar.com/investors/IR).

OPERATING COMPANY LOCATIONS

	Domestic Manufacturing	International Manufacturing	Technical Centers
PE FILMS Division Headquarters Richmond, Virginia	Terre Haute, Indiana Durham, North Carolina Pottsville, Pennsylvania	Guangzhou, China Kerkrade, Netherlands Pune, India Rétság, Hungary São Paulo, Brazil	Durham, North Carolina Richmond, Virginia Terre Haute, Indiana
FLEXIBLE PACKAGING Division Headquarters São Paulo, Brazil	Bloomfield, New York	Cabo de Santo Agostinho, Brazil	Bloomfield, New York Cabo de Santo Agostinho, Brazil
ALUMINUM EXTRUSIONS Division Headquarters Newnan, Georgia	Newnan, Georgia Elkhart, Indiana Niles, Michigan Carthage, Tennessee Clearfield, Utah		



TREDEGAR CORPORATION

1100 Boulders Parkway
Richmond, Virginia 23225

www.tredegar.com



About the Cover:

In 2019, Tredegar bid adieu to the majestic willow oak which graced its corporate headquarters in Richmond, Virginia. This historically significant tree was living at the time of the signing of the United States Constitution in 1787.

Photography by Robert Llewellyn, 2008.

