ROGERS CORP
Form 10-Q
November 03, 2017

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

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FORM 10-Q

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ý QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the quarterly period ended September 30, 2017

or

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

For the transition period from _____ to _____

Commission file number 1-4347

_____

ROGERS CORPORATION
(Exact name of Registrant as specified in its charter)

_____

Massachusetts	06-0513860
(State or other jurisdiction of incorporation or organization)	(I. R. S. Employer Identification No.)
2225 W. Chandler Blvd., Chandler, Arizona	85224-6155
(Address of principal executive offices)	(Zip Code)

Registrant's telephone number, including area code: (480) 917-6000

_____

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

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

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, 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 ý	Accelerated filer o	Non-accelerated filer o
Smaller reporting company o	(Do not check if a smaller reporting company)	Emerging growth company o

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

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

The number of shares outstanding of the registrant's capital stock as of October 27, 2017 was 18,243,932.

ROGERS CORPORATION
FORM 10-Q

September 30, 2017

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Forward-Looking Statements

This Quarterly Report on Form 10-Q contains “forward-looking statements” within the meaning of Section 27A of the Securities Act of 1933 and Section 21E of the Securities Exchange Act of 1934. See “Forward-Looking Statements” in Item 2, Management’s Discussion and Analysis of Financial Condition and Results of Operations for additional information.

Part I – Financial Information

Item 1. Financial Statements

ROGERS CORPORATION
CONDENSED CONSOLIDATED STATEMENTS OF OPERATIONS
(Unaudited)
(Dollars and shares in thousands, except per share amounts)

	Quarter Ended		Nine Months Ended	
	September 30, 2017	September 30, 2016	September 30, 2017	September 30, 2016
Net sales	$206,783	$165,259	$612,035	$ 483,314
Cost of sales	124,595	103,330	368,951	300,678
Gross margin	82,188	61,929	243,084	182,636
Selling, general and administrative expenses	38,615	31,489	112,346	95,718
Research and development expenses	7,411	7,294	21,512	20,916
Restructuring and impairment charges	962	—	2,767	—
Gain on sale of long-lived asset	(4,387)	—	(5,329)	—
Operating income	39,587	23,146	111,788	66,002
Equity income in unconsolidated joint ventures	1,384	898	3,359	2,220
Other income (expense), net	1,596	676	2,126	320
Interest expense, net	(1,639)	(811)	(4,834)	(3,047)
Income before income tax expense	40,928	23,909	112,439	65,495
Income tax expense	15,396	7,844	38,979	29,125
Net income	$25,532	$16,065	$73,460	$ 36,370
Basic earnings per share	$1.40	$0.89	$4.05	$ 2.02
Diluted earnings per share	$1.37	$0.88	$3.97	$ 2.00
Shares used in computing:				
Basic earnings per share	18,181	17,996	18,126	17,990
Diluted earnings per share	18,588	18,183	18,503	18,217

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

ROGERS CORPORATION
CONDENSED CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME (LOSS)
(Unaudited)
(Dollars in thousands)

	Quarter Ended		Nine Months Ended	
	September 30, 2017	September 30, 2016	September 30, 2017	September 30, 2016
Net income	$25,532	$ 16,065	$73,460	$ 36,370
Foreign currency translation adjustment	6,407	1,408	23,136	6,605
Derivative instruments designated as cash flow hedges:				
Unrealized gain (loss) on derivative instruments held at period end, net of tax (Note 6)	(51)	—	(487)	—
Unrealized (gain) loss reclassified into earnings (Note 6)	115	—	222	11
Accumulated other comprehensive income (loss) pension and post-retirement benefits:				
Actuarial net gain (loss) incurred in fiscal year, net of tax (Note 6)	(300)	—	35	—
Pension and postretirement benefit plans reclassified into earnings, net of tax (Note 6):				
Amortization of loss, net of tax (Note 6)	—	34	36	105
Other comprehensive income	6,171	1,442	22,942	6,721
Comprehensive income	$31,703	$ 17,507	$96,402	$ 43,091

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

ROGERS CORPORATION
CONDENSED CONSOLIDATED STATEMENTS OF FINANCIAL POSITION
(Unaudited)
(Dollars and shares in thousands)

	September 30, 2017	December 31, 2016
Assets		
Current assets		
Cash and cash equivalents	$ 150,993	$ 227,767
Accounts receivable, less allowance for doubtful accounts of $1,452 and $1,952	138,506	119,604
Inventories	114,118	91,130
Prepaid income taxes	4,383	3,020
Asbestos-related insurance receivables	7,099	7,099
Assets held for sale	896	871
Other current assets	9,925	8,910
Total current assets	425,920	458,401
Property, plant and equipment, net of accumulated depreciation	174,855	176,916
Investments in unconsolidated joint ventures	19,340	16,183
Deferred income taxes	16,007	14,634
Goodwill	234,587	208,431
Other intangible assets	164,142	136,676
Asbestos-related insurance receivables	41,295	41,295
Other long-term assets	5,472	3,964
Total assets	$ 1,081,618	$ 1,056,500
Liabilities and Shareholders' Equity		
Current liabilities		
Accounts payable	$ 35,867	$ 28,379
Accrued employee benefits and compensation	34,176	31,104
Accrued income taxes payable	16,147	10,921
Current portion of lease obligation	399	350
Current portion of long term debt	—	3,653
Asbestos-related liabilities	7,099	7,099
Other accrued liabilities	20,299	19,679
Total current liabilities	113,987	101,185
Borrowings under credit facility	131,188	235,877
Long term lease obligation	5,277	4,993
Pension and post-retirement benefit obligations	8,501	8,501
Retiree health care and life insurance benefits	1,971	1,992
Asbestos-related liabilities	44,883	44,883
Non-current income tax	7,619	6,238
Deferred income taxes	13,680	13,883
Other long-term liabilities	3,408	3,162
Commitments and contingencies (Note 14)		
Shareholders' equity		
Capital Stock - $1 par value; 50,000 authorized shares; 18,218 and 18,021 shares outstanding	18,218	18,021
Additional paid-in capital	124,665	118,678
Retained earnings	677,541	591,349
Accumulated other comprehensive income (loss)	(69,320)	(92,262)
Total shareholders' equity	751,104	635,786

Total liabilities and shareholders' equity	$ 1,081,618	$ 1,056,500

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

ROGERS CORPORATION
CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS
(Unaudited)
(Dollars and shares in thousands)

	Nine Months Ended	
	September 30, 2017	September 30, 2016
Operating Activities:		
Net income	$73,460	$ 36,370
Adjustments to reconcile net income to cash from operating activities:		
Depreciation and amortization	32,679	27,635
Stock-based compensation expense	8,508	8,537
Deferred income taxes	10,452	9,594
Equity in undistributed income of unconsolidated joint ventures	(3,359)	(2,220)
Dividends received from unconsolidated joint ventures	616	426
Loss from long-term investments	341	—
Pension and postretirement benefits	(1,177)	(2,121)
Loss (gain) from the sale of property, plant and equipment	(5,329)	219
Bad debt expense	(553)	—
Proceeds from insurance related to operations	932	—
Changes in operating assets and liabilities, excluding effects of acquisitions:		
Accounts receivable	(12,772)	(9,316)
Inventories	(16,573)	6,536
Pension contribution	(372)	(274)
Other current assets	(1,283)	227
Accounts payable and other accrued expenses	13,325	15,125
Other, net	956	3,485
Net cash provided by operating activities	99,851	94,223
Investing Activities:		
Business acquisition	(60,191)	—
Capital expenditures, net	(17,678)	(14,926)
Proceeds from insurance related to property, plant and equipment	1,040	—
Proceeds from the sale of property, plant and equipment, net	8,130	—
Net cash used in investing activities	(68,699)	(14,926)
Financing Activities:		
Debt issuance costs	(1,169)	—
Repayment of debt principal and long term lease obligation	(110,285)	(102,580)
Repurchases of capital stock	—	(7,995)
Proceeds from the exercise of stock options, net	1,926	2,058
Issuance of shares upon vesting of restricted stock units, net	(5,145)	(1,288)
Proceeds from issuance of shares to employee stock purchase plan	895	858
Net cash used in financing activities	(113,778)	(108,947)
Effect of exchange rate fluctuations on cash	5,852	(1,420)
Net decrease in cash and cash equivalents	(76,774)	(31,070)
Cash and cash equivalents at beginning of period	227,767	204,586
Cash and cash equivalents at end of period	$150,993	$ 173,516

The accompanying notes are an integral part of the condensed consolidated financial statements.
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ROGERS CORPORATION
CONDENSED CONSOLIDATED STATEMENT OF SHAREHOLDERS' EQUITY
(Unaudited)
(Dollars in thousands)

	Capital Stock	Additional Paid-In Capital	Retained Earnings	Accumulated Other Comprehensive Income (Loss)	Total Shareholders' Equity
Balance at December 31, 2016	$18,021	$118,678	$591,349	$ (92,262)	$ 635,786
Net income	—	—	73,460	—	73,460
Other comprehensive income (loss)	—	—	—	22,942	22,942
Stock options exercised	53	1,873	—	—	1,926
Stock issued to directors	15	(15)	—	—	—
Shares issued for employees stock purchase plan	15	880	—	—	895
Shares issued for vested restricted stock units, net of cancellations for tax withholding	114	(5,259)	—	—	(5,145)
Cumulative-effect adjustment of change in accounting for share-based compensation	—	—	12,732	—	12,732
Stock-based compensation expense	—	8,508	—	—	8,508
Balance at September 30, 2017	$18,218	$124,665	$677,541	$ (69,320)	$ 751,104

The accompanying notes are an integral part of the condensed consolidated financial statements.
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ROGERS CORPORATION
NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS
(Unaudited)

Note 1 – Basis of Presentation

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

The accompanying unaudited condensed consolidated financial statements have been prepared in accordance with accounting principles generally accepted in the United States of America (GAAP) for interim financial information. Accordingly, these statements do not include all of the information and footnotes required by GAAP for complete financial statements. In our opinion, the accompanying condensed consolidated financial statements include all normal recurring adjustments necessary for their fair presentation in accordance with GAAP. All significant intercompany transactions have been eliminated.

Certain statement of financial position reclassifications have been made to prior period balances in order to conform to the current period’s presentation.

Interim results are not necessarily indicative of results for a full year. For further information regarding our accounting policies, refer to the audited consolidated financial statements and footnotes thereto included in our Annual Report on Form 10-K for the fiscal year ended December 31, 2016.

Note 2 – Fair Value Measurements

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

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

From time to time we enter into various instruments that require fair value measurement. Assets and liabilities measured on a recurring basis, categorized by the level of inputs used in the valuation, included:

(Dollars in thousands)	Carrying amount as of September 30, 2017	Level 1	Level 2	Level 3
Foreign currency contracts	$ (382)	$ —	$ (382)	$ —
Copper derivative contracts	$ 1,534	$ —	$ 1,534	$ —
Interest rate swap	$ (638)	$ —	$ (638)	$ —

(Dollars in thousands)	Carrying amount as of December 31, 2016	Level 1	Level 2	Level 3
Foreign currency contracts	$ (170)	$ —	$ (170)	$ —
Copper derivative contracts	$ 1,277	$ —	$ 1,277	$ —

Note 3 – Hedging Transactions and Derivative Financial Instruments

We are exposed to certain risks related to our ongoing business operations. The primary risks being managed through our use of derivative instruments are foreign currency exchange rate risk and commodity pricing risk (primarily related to copper). During the first quarter of 2017, we also entered into an interest rate swap to hedge interest rate risk. We do not use derivative financial instruments for trading or speculative purposes. The valuation of derivative contracts used to manage each of these risks is described below:

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

The guidance for the accounting and disclosure of derivatives and hedging transactions requires companies to recognize all of their derivative instruments as either assets or liabilities at fair value in the statements of financial position. The accounting for changes in the fair value (i.e., gains or losses) of a derivative instrument depends on whether it has been designated and qualifies for hedge accounting treatment as defined under the applicable accounting guidance. For derivative instruments that are designated and qualify for hedge accounting treatment as cash flow hedges (i.e., hedging the exposure to variability in expected future cash flows that is attributable to a particular risk), the effective portion of the gain or loss on the derivative instrument is reported as a component of other comprehensive income (loss). This gain or loss is reclassified into earnings in the same line item of the condensed consolidated statements of operations associated with the forecasted transaction and in the same period or periods during which the hedged transaction affects earnings. The remaining gain or loss on the derivative instrument in excess of the cumulative change in the present value of the future cash flows of the hedged item (i.e., the ineffective portion) if any, is recognized in the condensed consolidated statements of operations during the current period. As of September 30, 2017 only our interest rate swap qualified for hedge accounting treatment as a cash flow hedge. For the three and nine months ended September 30, 2017, there was hedge ineffectiveness of approximately $0.1 million and $0.2 million, respectively which was recorded in the condensed consolidated statement of operations. As of September 30, 2016, we did not have any contracts designated as cash flow hedges.

Foreign Currency

During the quarter ended September 30, 2017, we entered into Korean Won, Japanese Yen, Euro, Hungarian Forint and Chinese Renminbi forward contracts. We entered into these foreign currency forward contracts to mitigate certain global transactional exposures. These contracts do not qualify for hedge accounting treatment. As a result, any fair value adjustments required on these contracts are recorded in "Other income (expense), net" in our condensed consolidated statements of operations.

As of September 30, 2017 the notional values of these foreign currency forward contracts were:

Notional Values of Foreign Currency Derivatives	
KRW/USD	3,281,770,000

JPY/EUR	¥350,000,000
EUR/USD	€4,635,239
EUR/HUF	€369,885
USD/CNY	$6,083,500

Commodity

We currently have twenty outstanding contracts to hedge exposure related to the purchase of copper in our Power Electronics Solutions (PES) and Advanced Connectivity Solutions (ACS) operations. These contracts are held with financial institutions and minimize the risk associated with a potential rise in copper prices. These contracts provide some coverage over the forecasted 2017 and 2018 monthly copper exposure and do not qualify for hedge accounting treatment. As a result, any fair value adjustments required on these contracts are recorded in "Other income (expense), net" in our condensed consolidated statements of operations. The notional values of our copper contracts outstanding as of September 30, 2017 were:

Volume of Copper Derivatives	
October 2017 - December 2017	122 metric tons per month
January 2018 - March 2018	140 metric tons per month
April 2018 - June 2018	139 metric tons per month
July 2018 - September 2018	93 metric tons per month
October 2018 - December 2018	23 metric tons per month

Interest Rates

In March 2017, we entered into an interest rate swap to hedge the variable interest rate on $75.0 million of our $450.0 million revolving credit facility. This transaction has been designated as a cash flow hedge and qualifies for hedge accounting treatment. See Note 12, "Debt" for further discussion regarding the credit facility.

Effects on Statements of Operations and of Comprehensive Income (Loss):

(Dollars in thousands)		The Effect of Current Derivative Instruments on the Financial Statements for the period ended September 30, 2017		Fair Values of Derivative Instruments as of September 30, 2017
		Gain (Loss)		Other Assets (Liabilities)
Foreign Exchange Contracts	Location	Quarter Ended	Nine Months Ended	
Contracts not designated as hedging instruments	Other income (expense), net	$(198)	$(382)	$(382)
Copper Derivatives				
Contracts not designated as hedging instruments	Other income (expense), net	$474	$578	$1,534
Interest Rate Swap				
Contract designated as hedging instrument	Other comprehensive income (loss)	$100	$(415)	$(638)

(Dollars in thousands)	The Effect of Current Derivative Instruments on the Financial Statements for the period ended September 30, 2016	Fair Values of Derivative Instruments as of September 30, 2016

		Gain (Loss)		Other Assets (Liabilities)
Foreign Exchange Contracts	Location	Quarter Ended	Nine Months Ended	
Contracts not designated as hedging instruments	Other income (expense), net	$29	$29	$ 29
Copper Derivatives				
Contracts not designated as hedging instruments	Other income (expense), net	$(94)	$(163)	$ 490

Note 4 – Inventories

Inventories are valued at the lower of cost or market. Inventories were as follows at the end of the periods noted below:

(Dollars in thousands)	September 30, 2017	December 31, 2016
Raw materials	$ 43,857	$ 29,788
Work-in-process	30,859	26,440
Finished goods	39,402	34,902
Total inventories	$ 114,118	$ 91,130

Note 5 – Acquisitions

Diversified Silicone Products

On January 6, 2017, we acquired the principal operating assets of Diversified Silicone Products, Inc. (DSP), pursuant to the terms of the Asset Purchase Agreement by and among the Company, DSP and the principal shareholders of DSP (the Purchase Agreement). Pursuant to the terms of the Purchase Agreement, we acquired certain assets and assumed certain liabilities of DSP for a total purchase price of approximately $60.2 million.

We used borrowings of $30.0 million under our credit facility in addition to cash on hand to fund the acquisition.

DSP is a custom silicone product development and manufacturing business and expands the portfolio of Rogers' Elastomeric Material Solutions business (EMS) in cellular sponge and specialty extruded silicone profile technologies, while strengthening existing expertise in precision-calendered silicone and silicone formulating and compounding.

The acquisition has been accounted for in accordance with applicable purchase accounting guidance. On a preliminary basis, we recorded goodwill primarily related to the expected synergies from combining operations and the value of the existing workforce. We also recorded other intangible assets related to acquired customer relationships, developed technology, trademarks, and a covenant not to compete. As of the filing date of this Form 10-Q, the final purchase accounting and purchase price allocation for the DSP acquisition are substantially complete, however, we continue to refine our preliminary valuation of certain acquired assets and the valuations below remain subject to change. The following table represents the preliminary fair market values assigned to the acquired assets and liabilities in the transaction:

(Dollars in thousands)	January 6, 2017
Assets:	
Accounts receivable	$2,724
Prepaid expenses	21
Inventory	2,433
Property, plant & equipment	1,589
Other intangible assets	35,860
Goodwill	17,793
Total assets	60,420
Liabilities:	
Accounts payable	179
Accrued expenses	50
Total liabilities	229
Fair value of net assets acquired	$60,191

The other intangible assets consist of customer relationships valued at $30.5 million, developed technology valued at $1.8 million, trademarks valued at $3.3 million, and a covenant not to compete valued at $0.3 million. The fair value of acquired identified intangible assets was determined by applying the income approach, using several significant unobservable inputs for projected cash flows and a discount rate. These inputs are considered Level 3 under the fair value measurements and disclosure guidance.

The weighted average amortization period for the other intangible asset classes are 11.8 years for customer relationships, 4.3 years for developed technology, 11.7 years for trademarks, and 4.1 years for a covenant not to compete, resulting in amortization expenses ranging from $1.1 million to $2.0 million annually. The estimated annual future amortization expense is $0.5 million for the remainder of 2017, $1.9 million for 2018, and $1.8 million for each of 2019, 2020, and 2021.

During the first nine months of 2017, we incurred transaction costs of $0.5 million related to the DSP acquisition, which were recorded within selling, general and administrative expenses in the condensed consolidated statements of operations.

The results of DSP have been included in our condensed consolidated financial statements only for the period subsequent to the completion of the acquisition on January 6, 2017, through September 30, 2017. DSP's net sales for the three and nine months ended September 30, 2017 totaled $5.9 million and $16.8 million, respectively.

DeWAL

On November 23, 2016, we acquired all of the membership interests in DeWAL Industries LLC (DeWAL), pursuant to the terms of the Membership Interest Purchase Agreement, dated November 23, 2016, by and among the Company and the owners of DeWAL for an aggregate purchase price of $135.5 million.

We used borrowings of $136.0 million under our credit facility to fund the acquisition.

DeWAL is a leading manufacturer of polytetrafluoroethylene and ultra-high molecular weight polyethylene films, pressure sensitive tapes and specialty products for the industrial, aerospace, automotive, and electronics markets.

The acquisition has been accounted for in accordance with applicable purchase accounting guidance. We recorded goodwill, primarily related to the expected synergies from combining operations and the value of the existing workforce. We also recorded other intangible assets primarily related to customer relationships, developed technology, trademarks, and a covenant not to compete. As of the filing date of this Form 10-Q, the final purchase accounting and purchase price allocation for the DeWAL acquisition are substantially complete; however, we continue to refine our preliminary valuation of certain acquired assets and the valuations set forth below remain subject to change. The following table represents the preliminary fair values assigned to the acquired assets and liabilities in the transaction:

(Dollars in thousands)	November 23, 2016
Assets:	
Cash and cash equivalents	$ 1,539
Accounts receivable	7,513
Other current assets	691
Inventory	9,915
Property, plant & equipment	9,932
Other intangible assets	73,500
Goodwill	35,755
Other long-term assets	101
Total assets	138,946
Liabilities:	
Accounts payable	2,402
Other current liabilities	1,062
Total liabilities	3,464
Fair value of net assets acquired	$ 135,482

The other intangible assets consist of customer relationships valued at $46.7 million, developed technology valued at $22.0 million, trademarks valued at $4.3 million, and a covenant not to compete valued at $0.5 million. The fair value of acquired identified intangible assets was determined by applying the income approach, using several significant unobservable inputs for projected cash flows and a discount rate. These inputs are considered Level 3 under the fair

value measurements and disclosure guidance.

The weighted average amortization period for the other intangible asset classes are 13.5 years for customer relationships, 8.6 years for developed technology, 5.2 years for trademarks, and 3.8 years for a covenant not to compete, resulting in amortization expenses ranging from $2.4 million to $4.3 million, annually. The future estimated annual amortization expense is $0.7 million for the remainder of 2017, $3.7 million for 2018, $4.1 million for 2019, and $4.3 million for 2020 and 2021.

During the first nine months of 2017, we incurred transaction costs of $0.1 million related to the DeWAL acquisition, which were recorded within selling, general and administrative expenses in the condensed consolidated statements of operations. In 2016, we incurred transaction costs of $2.1 million related to this acquisition.

Pro Forma Financial Information

The following unaudited pro forma financial information presents the combined results of operations of Rogers, DSP and DeWAL, as if the DSP acquisition had occurred on January 1, 2016 and the DeWAL acquisition had occurred on January 1, 2015. The unaudited pro forma financial information is not intended to represent or be indicative of our consolidated results of operations that would have been reported had the DSP and DeWAL acquisitions been completed as of January 1, 2016, and January 1, 2015, respectively, and should not be taken as indicative of our future consolidated results of operations.

(Dollars in thousands)	Three Months Ended September 30, 2016 (unaudited)	Nine Months Ended September 30, 2016 (unaudited)
Net sales	183,560	537,960
Net income	16,288	34,829

Note 6 – Accumulated Other Comprehensive Income (Loss)

The changes in accumulated other comprehensive income (loss) by component for the nine months ended September 30, 2017 and 2016 were as follows:

(Dollars in tables and footnotes in thousands)	Foreign currency translation adjustments	Funded status of pension plans and other postretirement benefits (1)	Unrealized gain (loss) on derivative instruments (2)	Total
Beginning Balance December 31, 2015	$ (41,365)	$ (47,082)	$ (11)	$ (88,458)
Other comprehensive income (loss) before reclassifications	6,605	—	—	6,605
Amounts reclassified from accumulated other comprehensive income (loss)	—	105	11	116
Net current-period other comprehensive income (loss) (3)	6,605	105	11	6,721
Ending Balance September 30, 2016	$ (34,760)	$ (46,977)	$ —	$ (81,737)
Beginning Balance December 31, 2016	$ (46,446)	$ (45,816)	$ —	$ (92,262)
Other comprehensive income (loss) before reclassifications	23,136	—	(487)	22,649
Actuarial net gain (loss) incurred in the fiscal year	—	35	—	35
Amounts reclassified from accumulated other comprehensive (income) loss	—	36	222	258
Net current-period other comprehensive income (loss) (4)	23,136	71	(265)	22,942
Ending Balance September 30, 2017	$ (23,310)	$ (45,745)	$ (265)	$ (69,320)

(1) Net of taxes of $9,122 and $9,160 as of September 30, 2017 and December 31, 2016, respectively. Net of taxes of $9,821 and $9,879 as of September 30, 2016 and December 31, 2015, respectively.

(2) Net of taxes of $151 and $0 as of September 30, 2017 and December 31, 2016, respectively. Net of taxes of $0 and $5 as of September 30, 2016 and December 31, 2015, respectively.

(3) Net of taxes of $58 and $5 for the pension plans and postretirement benefits and unrealized gain (loss) on derivatives, respectively.

(4) Net of taxes of $38 and $(151) for the pension plans and postretirement benefits and unrealized gain (loss) on derivatives, respectively.

Note 7 – Earnings Per Share

The following table sets forth the computation of basic and diluted earnings per share for the periods indicated:

(In thousands, except per share amounts)	Quarter Ended September 30,		Nine Months Ended September 30,	
	2017	2016	2017	2016
Numerator:				
Net income	$25,532	$16,065	$73,460	$36,370
Denominator:				
Weighted-average shares outstanding - basic	18,181	17,996	18,126	17,990
Effect of dilutive shares	407	187	377	227
Weighted-average shares outstanding - diluted	18,588	18,183	18,503	18,217
Basic earnings per share	$1.40	$0.89	$4.05	$2.02
Diluted earnings per share	$1.37	$0.88	$3.97	$2.00

Certain potential options to purchase shares may be excluded from the calculation of diluted weighted-average shares outstanding where their exercise price is greater than the average market price of our capital stock during the relevant reporting period. For the quarter ended September 30, 2017, no shares were excluded. For the quarter ended September 30, 2016, 13,500 shares were excluded.

Note 8 – Stock-Based Compensation

Equity Compensation Awards

Performance-Based Restricted Stock Units

As of September 30, 2017, we had performance-based restricted stock awards from 2015, 2016 and 2017 outstanding. These awards generally cliff vest at the end of a three year measurement period. However, employees whose employment terminates during the measurement period due to death, disability, or, in certain cases, retirement may receive a pro-rata payout based on the number of days they were employed during the vesting period. Participants are eligible to be awarded shares ranging from 0% to 200% of the original award amount, based on certain defined performance measures. Compensation expense is recognized using the straight-line method over the vesting period, unless the employee has an accelerated vesting schedule.

The 2015 awards have two measurement criteria on which the final payout of each award is based: (i) the three year return on invested capital (ROIC) compared to that of a specified group of peer companies, and (ii) the three year total shareholder return (TSR) on the performance of our capital stock as compared to that of a specified group of peer companies. The 2016 and 2017 awards have one measurement criteria: the three year TSR on the performance of our capital stock as compared to that of a specified group of peer companies. In accordance with the applicable accounting literature, the ROIC measurement criteria of the 2015 awards is considered a performance condition. As such, the fair value of the ROIC portion is determined based on the market value of the underlying stock price at the grant date, with cumulative compensation expense recognized to date being increased or decreased based on changes in the forecasted pay out percentage at the end of each reporting period. The TSR measurement criteria of the awards is considered a market condition. As such, the fair value of this measurement criteria was determined on the date of grant using a Monte Carlo simulation valuation model, with related compensation expense fixed on the grant date and expensed on a straight-line basis over the life of the awards that ultimately vest and with no changes for the final projected payout of the awards.

Below were the assumptions used in the Monte Carlo calculation:

	September 30, 2017	September 30, 2016
Expected volatility	33.6%	29.6%
Expected term (in years)	3.0	3.0
Risk-free interest rate	1.38%	0.93%

Expected volatility – In determining expected volatility, we have considered a number of factors, including historical volatility.
Expected term – We use the vesting period of the award to determine the expected term assumption for the Monte Carlo simulation valuation model.

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

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

Forfeiture Rate – We previously estimated the forfeiture rate based on historical experience and our expectations regarding future terminations. To the extent our actual forfeiture rate was different from our estimate, stock-based compensation expense was adjusted accordingly. In accordance with the adoption of ASU 2016-09, Improvements to Employee Share-Based Payment Accounting, on January 1, 2017, we now account for forfeitures as they occur. The adoption of this standard, with respect to treatment of forfeitures, did not have a material impact on our condensed consolidated financial statements in the period of adoption.

The following table summarizes the change in number of non-vested performance-based restricted stock awards outstanding since December 31, 2016:

	Performance-Based Restricted Stock Awards
Non-vested awards outstanding at December 31, 2016	151,769
Awards granted	56,147
Stock issued	(34,442)
Awards forfeited	(4,047)
Non-vested awards outstanding at September 30, 2017	169,427

During the three and nine months ended September 30, 2017, we recognized compensation expense for performance-based stock awards of approximately $1.4 million and $2.9 million, respectively. During the three and nine months ended and September 30, 2016, we recognized compensation expense for performance-based stock awards of approximately $1.1 million and $3.2 million respectively.

Time-Based Restricted Stock

As of September 30, 2017, we had time-based restricted stock grants from 2014, 2015, 2016 and 2017 outstanding. The 2014, 2015, 2016 and 2017 grants all ratably vest on the first, second and third anniversaries of the original grant date. We recognize compensation expense on all of these awards on a straight-line basis over the vesting period. The fair value of the award is determined based on the market value of the underlying stock price at the grant date.

The following table summarizes the change in number of non-vested time-based restricted stock awards outstanding since December 31, 2016:

	Time-Based Restricted Stock Awards
Non-vested awards outstanding at December 31, 2016	239,189
Awards granted	77,505
Stock issued	(132,373)
Awards forfeited	(5,500)
Non-vested awards outstanding at September 30, 2017	178,821

During the three and nine months ended September 30, 2017 we recognized compensation expense for time-based restricted stock awards of approximately $1.6 million and $4.2 million, respectively. During the three and nine months ended September 30, 2016 we recognized compensation expense for time-based restricted stock awards of approximately $1.6 million and $4.3 million, respectively.

Forfeiture Rate – We previously estimated the forfeiture rate based on historical experience and our expectations regarding future terminations. To the extent our actual forfeiture rate was different from our estimate, stock-based compensation expense was adjusted accordingly. In accordance with the adoption of ASU 2016-09 on January 1, 2017, we now account for forfeitures as they occur. The adoption of this standard, with respect to treatment of forfeitures, did not have a material impact on our condensed consolidated financial statements in the period of

adoption.

Deferred Stock Units

We grant deferred stock units to non-management directors. These awards are fully vested on the date of grant and the related shares are generally issued on the 13 month anniversary of the grant date unless the individual elects to defer the receipt of those shares. Each deferred stock unit results in the issuance of one share of Rogers' capital stock. The grant of deferred stock units is

typically done annually during the second quarter of each year. The fair value of the award is determined based on the market value of the underlying stock price at the grant date.

The following table summarizes the change in number of deferred stock units outstanding since December 31, 2016:

	Deferred Stock Units
Awards outstanding at December 31, 2016	11,900
Awards granted	9,250
Stock issued	(11,900)
Awards outstanding at September 30, 2017	9,250

During the three and nine month periods ended September 30, 2017, we recognized compensation expense associated with the deferred stock units of $0.1 million and $1.0 million, respectively. During the three months ended September 30, 2016, we recognized no compensation expense associated with the deferred stock units. During the nine months ended September 30, 2016, we recognized $0.7 million of compensation expense associated with the deferred stock units.

Stock Options

Stock options have been granted under various equity compensation plans, and they generally became exercisable in one-third increments on the second, third and fourth anniversaries of the grant dates. The maximum contractual term for all options was normally ten years. We used the Black-Scholes option-pricing model to calculate the grant-date fair value of an option. We have not granted any stock options since the first quarter of 2012.

A summary of the activity under our stock option plans during the three and nine month periods ended September 30, 2017 and changes during the nine months then ended, is presented below:

	Options Outstanding	Weighted-Average Exercise Price Per Share	Weighted-Average Remaining Contractual Life in Years	Aggregate Intrinsic Value
Options outstanding at June 30, 2017	64,958	$ 37.01	3.0	$4,651,550
Options exercised	(1,400)	$ 24.20		
Options forfeited	—	$ —		
Options outstanding at September 30, 2017	63,558	$ 37.29	2.8	$6,100,702
Options exercisable at September 30, 2017	63,558	$ 37.29	2.8	$6,100,702
Options vested at September 30, 2017	63,558	$ 37.29	2.8	$6,100,702

	Options Outstanding	Weighted-Average Exercise Price Per Share
Options outstanding at December 31, 2016	116,575	$ 37.76
Options exercised	(53,017)	$ 36.33
Options forfeited	—	$ —
Options outstanding at September 30, 2017	63,558	$ 37.29

During the nine months ended September 30, 2017, the total intrinsic value of options exercised (i.e., the difference between the market price at time of exercise and the price paid by the individual to exercise the options) was $3.0 million, and the total amount of cash received from the exercise of these options was $1.9 million.

Employee Stock Purchase Plan

We have an employee stock purchase plan (ESPP) that allows eligible employees to purchase, through payroll deductions, shares of our capital stock at a discount to fair market value. The ESPP has two six month offering periods each year, the first beginning in January and ending in June and the second beginning in July and ending in December. The ESPP contains a look-back feature that allows the employee to acquire shares of our capital stock at a 15% discount from the underlying market price at the beginning or end of the applicable period, whichever is lower. We recognize compensation expense on this plan ratably over the offering

period based on the fair value of the anticipated number of shares that will be issued at the end of each offering period. Compensation expense is adjusted at the end of each offering period for the actual number of shares issued. Fair value is determined based on two factors: (i) the 15% discount on the underlying stock's market value on the first day of the applicable offering period and (ii) the fair value of the look-back feature determined by using the Black-Scholes model. We recognized approximately $0.1 million of compensation expense associated with the plan in each of the three month periods ended September 30, 2017 and 2016 and approximately $0.3 million of compensation expense associated with each of the nine month periods ended September 30, 2017 and 2016.

Note 9 – Pension Benefits and Other Postretirement Benefit Plans

We have three qualified noncontributory defined benefit pension plans: 1) the Rogers Corporation Employee's Pension Plan for unionized hourly employees (the Union Plan); 2) the Rogers Corporation Defined Benefit Pension Plan for all other U.S. employees hired before December 31, 2007 who are salaried employees or non-union hourly employees (the Rogers Plan); and 3) the Hourly Employees Pension Plan of Arlon Inc., Microwave Material and Silicone Technologies Divisions, Bear, Delaware for employees of the acquired Arlon business (the Bear Plan). The Company also maintains the Rogers Corporation Amended and Restated Pension Restoration Plan effective as of January 1, 2004 and the Rogers Corporation Amended and Restated Pension Restoration Plan effective as of January 1, 2005 (collectively, the Nonqualified Plans). The Nonqualified Plans serve to restore certain retirement benefits that might otherwise be lost due to limitations imposed by federal law on qualified pension plans, as well as to provide supplemental retirement benefits, for certain senior executives of the Company. In addition, we sponsor multiple fully insured or self-funded medical plans and life insurance plans for certain retirees. The measurement date for all plans is December 31 for each respective plan year.

Components of Net Periodic (Benefit) Cost

The components of net periodic (benefit) cost for the periods indicated were:

	Pension Benefits				Retirement Health and Life Insurance Benefits			
(Dollars in thousands)	Quarter Ended September 30,		Nine Months Ended September 30,		Quarter Ended September 30,		Nine Months Ended September 30,	
Change in benefit obligation:	2017	2016	2017	2016	2017	2016	2017	2016
Service cost	$—	$—	$—	$—	$12	$37	$68	$111
Interest cost	1,837	1,872	5,519	5,658	20	19	51	57
Expected return on plan assets	(2,302)	(2,698)	(6,920)	(8,110)	—	—	—	—
Amortization of prior service cost (credit)	—	—	—	—	(411)	(373)	(1,191)	(1,119)
Amortization of net loss (gain)	445	445	1,311	1,339	16	(19)	(15)	(57)
Net periodic (benefit) cost	$(20)	$(381)	$(90)	$(1,113)	$(363)	$(336)	$(1,087)	$(1,008)

Employer Contributions

We made required contributions of $0.4 million and $0.3 million to our qualified defined benefit pension plans in the first nine months of 2017 and 2016, respectively. We are not required to make additional contributions to these plans in 2017.

In the three and nine month periods ended September 30, 2017 and 2016, we did not make any voluntary contributions to our defined benefit pension plans.

As there is no funding requirement for the non-qualified unfunded noncontributory defined benefit pension plan or the retiree health and life insurance benefit plans, benefit payments made during the year are funded directly by the Company.

Pension Plan Merger and Proposed Termination

In October 2017, the Company merged the Rogers Plan and the Bear Plan (the Merged Plan). The Company currently intends to terminate the Merged Plan and has requested a determination letter from the Internal Revenue Service (IRS). The termination of the Merged Plan remains subject to final approval by both management and the IRS. The Company plans to provide for lump sum distributions or annuity payments in connection with the termination of the

Merged Plan and we expect the settlement process to be completed in late 2018 or early 2019. The Company lacks sufficient information as of September 30, 2017 to determine the financial impact of the proposed plan termination. The actuarial assumptions used to calculate pension cost and true-up the pension liability are reviewed annually and will be updated at December 31, 2017. At this time, there are no plans to terminate the remaining Union Plan.

Note 10 – Segment Information

Our reporting structure is comprised of the following operating segments: ACS, EMS, PES, and Other. We believe this structure aligns our external reporting presentation with how we currently manage and view our business internally.

In November 2016, we acquired DeWAL, a leading manufacturer of polytetrafluoroethylene, ultra-high molecular weight polyethylene films, pressure sensitive tapes and specialty products for the industrial, aerospace, automotive, and electronics markets. In January 2017, we acquired the principal operating assets of DSP, a custom manufacturer of silicone sheet, extrusions, stripping and compounds. We are in the process of integrating both DeWAL and DSP into our EMS segment.

The following table sets forth the information about our segments for the periods indicated; inter-segment sales have been eliminated from the net sales data:

	Quarter Ended September 30,		Nine Months Ended September 30,	
(Dollars in thousands)	2017	2016	2017	2016
Net sales				
Advanced Connectivity Solutions	$72,713	$65,518	$225,595	$206,115
Elastomeric Material Solutions	82,239	54,391	236,673	146,476
Power Electronics Solutions	46,409	39,777	132,966	113,391
Other	5,422	5,573	16,801	17,332
Total	$206,783	$165,259	$612,035	$483,314
Operating income				
Advanced Connectivity Solutions	$14,465	$7,605	$47,362	$34,334
Elastomeric Material Solutions	17,846	10,932	44,826	21,584
Power Electronics Solutions	5,429	2,767	14,024	4,540
Other	1,847	1,842	5,576	5,544
Total	39,587	23,146	111,788	66,002
Equity income in unconsolidated joint ventures	1,384	898	3,359	2,220
Other income (expense), net	1,596	676	2,126	320
Interest expense, net	(1,639)	(811)	(4,834)	(3,047)
Income before income tax expense	$40,928	$23,909	$112,439	$65,495

Note 11 – Joint Ventures

As of September 30, 2017, we had two joint ventures, each 50% owned, which were accounted for under the equity method of accounting.

Joint Venture	Location	Reportable Segment	Fiscal Year-End
Rogers INOAC Corporation (RIC)	Japan	Elastomeric Material Solutions	October 31
Rogers INOAC Suzhou Corporation (RIS)	China	Elastomeric Material Solutions	December 31

We recognized equity income related to the joint ventures of $1.4 million and $3.4 million for the three and nine months ended September 30, 2017, respectively. We recognized equity income related to the joint ventures of $0.9 million and $2.2 million for the three and nine months ended September 30, 2016, respectively. These amounts are included in the condensed consolidated statements of operations.

The summarized financial information for the joint ventures for the periods indicated was as follows:

	Quarter Ended		Nine Months Ended	
	September 30,		September 30,	
(Dollars in thousands)	2017	2016	2017	2016
Net sales	$14,020	$12,773	$38,653	$32,934
Gross profit	$5,463	$4,119	$14,832	$10,877
Net income	$2,768	$1,796	$6,718	$4,440

Receivables from and payables to joint ventures arise during the normal course of business from transactions between us and the joint ventures. We had receivables of $2.7 million and $2.4 million due from RIC and RIS as of September 30, 2017 and December 31, 2016, respectively. We owed payables of $2.7 million and $1.6 million to RIC and RIS as of September 30, 2017 and December 31, 2016, respectively.

Note 12 – Debt

On June 18, 2015, we entered into a secured five year credit agreement with JPMorgan Chase Bank, N.A., as administrative agent, and the lenders party thereto (the Second Amended Credit Agreement). The Second Amended Credit Agreement provided (1) a $55.0 million term loan; (2) up to $295.0 million of revolving loans, with sublimits for multicurrency borrowings, letters of credit and swing-line notes; and (3) a $50.0 million expansion feature.

On February 17, 2017, we entered into a secured five year credit agreement with JPMorgan Chase Bank, N.A., as administrative agent, and the lenders party thereto (the Third Amended Credit Agreement), which amended and restated the Second Amended Credit Agreement. The Third Amended Credit Agreement refinanced the Second Amended Credit Agreement, eliminated the term loan under the Second Amended Credit Agreement, increased the principal amount of the revolving credit facility to up to $450.0 million borrowing capacity, with sublimits for multicurrency borrowings, letters of credit and swing-line notes, and provided an additional $175.0 million accordion feature. Borrowings may be used to finance working capital needs, for letters of credit and for general corporate purposes in the ordinary course of business, including the financing of permitted acquisitions (as defined in the Third Amended Credit Agreement).

Borrowings under the Third Amended Credit Agreement can be made as alternate base rate loans or euro-currency loans. Alternate base rate loans bear interest that includes a base reference rate plus a spread of 37.5 to 75.0 basis points, depending on our leverage ratio. The base reference rate is the greater of the prime rate; federal funds effective rate (or the overnight bank funding rate, if greater) plus 50 basis points; or adjusted 1-month LIBOR plus 100 basis points. Euro-currency loans bear interest based on adjusted LIBOR plus a spread of 137.5 to 175.0 basis points, depending on our leverage ratio.

In addition to interest payable on the principal amount of indebtedness outstanding from time to time under the Third Amended Credit Agreement, we are required to pay a quarterly fee of 20 to 30 basis points (based upon our leverage ratio) of the unused amount of the lenders' commitments under the Third Amended Credit Agreement.

The Third Amended Credit Agreement contains customary representations, warranties, covenants, mandatory prepayments and events of default under which our payment obligations may be accelerated. If an event of default occurs, the lenders may, among other things, terminate their commitments and declare all outstanding borrowings to be immediately due and payable together with accrued interest and fees. The financial covenants include requirements to maintain (1) a leverage ratio of no more than 3.25 to 1.00, subject to an election to increase the maximum leverage ratio to 3.50 to 1.00 for one fiscal year in connection with a permitted acquisition, and (2) an interest coverage ratio of no less than 3.00 to 1.00.

All obligations under the Third Amended Credit Agreement are guaranteed by each of our existing and future material domestic subsidiaries, as defined in the Third Amended Credit Agreement (the Guarantors). The obligations are also secured by a Third Amended and Restated Pledge and Security Agreement, dated as of February 17, 2017, entered into by us and the Guarantors which grants to the administrative agent, for the benefit of the lenders, a security interest, subject to certain exceptions, in substantially all of the non-real estate assets of the Guarantors. These assets include, but are not limited to, receivables, equipment, intellectual property, inventory, and stock in certain

subsidiaries.

All revolving loans are due on the maturity date, February 17, 2022. We are not required to make any quarterly principal payments under the Third Amended Credit Agreement, however, during the second and third quarters of 2017, we made discretionary principal payments of $50.0 million and $60.0 million, respectively, to reduce the amount outstanding on our credit facility. As of September 30, 2017 we have $131.2 million in outstanding borrowings under our credit facility.

At September 30, 2017, we have $2.4 million of outstanding deferred debt issuance costs consisting of $1.4 million related to the term loans under the Second Amended Credit Agreement and $1.0 million related to the Third Amended Credit Agreement. These

costs will be amortized over the life of the Third Amended Credit Agreement, which will terminate in February 2022. We incurred amortization expense of $0.1 million and $0.2 million in the three months ended September 30, 2017 and 2016 related to these deferred costs. We incurred amortization expense of $0.4 million in the nine months ended September 30, 2017 and 2016 related to these deferred costs.

In March 2017, we entered into an interest rate swap to hedge the variable interest rate on $75.0 million of our $450.0 million revolving credit facility. See further discussion in Note 3 Hedging Transactions and Derivative Financial Instruments.

Restriction on Payment of Dividends

Our Third Amended Credit Agreement generally permits us to pay cash dividends to our shareholders, provided that (i) no default or event of default has occurred and is continuing or would result from the dividend payment and (ii) our leverage ratio does not exceed 2.75 to 1.00. If our leverage ratio exceeds 2.75 to 1.00, we may nonetheless make up to $20 million in restricted payments, including cash dividends, during the fiscal year, provided that no default or event of default has occurred and is continuing or would result from the payments. Our leverage ratio did not exceed 2.75 to 1.00 as of September 30, 2017.

Capital Lease

We have a capital lease obligation related to our manufacturing facility in Eschenbach, Germany. Under the terms of the leasing agreement, we have an option to purchase the property upon the expiration of the lease in 2021 at a price which is the greater of (i) the then-current market value or (ii) the residual book value of the land including the buildings and installations thereon. The total obligation recorded for the lease as of September 30, 2017 is $5.7 million. Depreciation expense related to the capital lease was $0.1 million for each of the three months ended September 30, 2017 and 2016. For the nine months ended September 30, 2017 and 2016, depreciation expense related to the capital lease was $0.2 million and $0.3 million, respectively. Accumulated depreciation at September 30, 2017 and December 31, 2016 was $4.1 million and $3.4 million, respectively. These expenses are included as depreciation expense in cost of sales on our condensed consolidated statements of operations.

We also incurred interest expense on the capital lease of $0.1 million for each of the three month periods ended September 30, 2017 and 2016. For the nine month periods ended September 30, 2017 and 2016, interest expense incurred on the capital lease was $0.1 million and $0.3 million, respectively. Interest expense related to the debt recorded on the capital lease is included in interest expense on the condensed consolidated statements of operations.

Note 13 – Goodwill and Other Intangible Assets

Goodwill

The changes in the carrying amount of goodwill for the period ending September 30, 2017, by segment, were as follows:

(Dollars in thousands)	Advanced Connectivity Solutions	Elastomeric Material Solutions	Power Electronics Solutions	Other	Total
December 31, 2016	$ 51,693	$ 91,531	$ 62,983	$2,224	$208,431
Foreign currency translation adjustment	—	768	7,479	—	8,247
Purchase accounting adjustment	—	116	—	—	116
DSP acquisition	—	17,793	—	—	17,793
September 30, 2017	$ 51,693	$ 110,208	$ 70,462	$2,224	$234,587

Other Intangible Assets

(Dollars in thousands)	September 30, 2017			December 31, 2016		
	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount
Trademarks and patents	$10,161	$ 1,882	$8,279	$6,825	$ 1,156	$5,669
Technology	73,779	31,382	42,397	68,880	24,365	44,515
Covenant not to compete	1,729	1,020	709	1,419	932	487
Customer relationships	128,357	20,262	108,095	96,148	14,311	81,837
Total definite-lived other intangible assets	214,026	54,546	159,480	173,272	40,764	132,508
Indefinite-lived other intangible assets	4,662	—	4,662	4,168	—	4,168
Total other intangible assets	$218,688	$ 54,546	$164,142	$177,440	$ 40,764	$136,676

Gross and net carrying amounts and accumulated amortization may differ from prior periods due to foreign exchange rate fluctuations.

Amortization expense for the three and nine months ended September 30, 2017 was approximately $3.8 million and $11.0 million, respectively. Amortization expense for the three and nine months ended September 30, 2016 was approximately $2.7 million and $8.0 million, respectively. The estimated future amortization expense is $3.9 million for the remainder of 2017 and $15.4 million, $15.2 million, $11.9 million and $11.0 million for 2018, 2019, 2020 and 2021, respectively.

On November 23, 2016, we acquired DeWAL, and on January 6, 2017, we acquired the principal operating assets of DSP. For further detail on the goodwill and other intangible assets recorded in connection with the acquisitions, see Note 5, “Acquisitions”.

The indefinite-lived other intangible assets were acquired as part of the acquisition of Curamik Electronics GmbH. These assets are assessed for impairment annually or if changes in circumstances indicate that the carrying values may not be recoverable.

The definite-lived other intangible assets are amortized using a fair value methodology that is based on the projected economic use of the related underlying asset. The weighted average amortization period as of September 30, 2017, by other intangible asset class, is presented in the table below:

Other Intangible Asset Class	Weighted Average Amortization Period (Years)
Trademarks and patents	7.3
Technology	6.1
Customer relationships	10.4
Covenant not to compete	3.4
Total definite-lived other intangible assets	9.1

Note 14 – Commitments and Contingencies

We are currently engaged in the following environmental and legal proceedings:

Voluntary Corrective Action Program

Our location in Rogers, Connecticut is part of the Connecticut Voluntary Corrective Action Program (VCAP). As part of this program, we partnered with the Connecticut Department of Energy and Environmental Protection (CT DEEP) to determine the corrective actions to be taken at the site related to contamination issues. We evaluated this matter and completed internal due diligence work related to the site in the fourth quarter of 2015. We recorded an accrual of $3.2 million as of December 31, 2015 for remediation costs expected to be incurred based on the facts and circumstances known to us at that time. During the third quarter of 2016, the CT DEEP approved a change to our remediation plan for the site that will reduce our overall expected costs. Accordingly, we reduced the accrual by $0.9 million as a result of a change in the level of remediation that needs to take place. This benefit was recorded as an offset to selling, general, and administrative expenses in the condensed consolidated statement of operations. Remediation activities on the site continue, totaling approximately $0.5 million through September 30, 2017, and the remaining accrual for future remediation efforts was $1.8 million.

Superfund Sites

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We are currently involved as a potentially responsible party (PRP) in one active case involving a waste disposal site, the Chatham Superfund Site. The costs incurred since inception for this claim have been immaterial and have been primarily covered by insurance policies, for both legal and remediation costs. In this matter, we have been assessed a cost sharing percentage of approximately 2% in relation to the range for estimated total cleanup costs of $18.8 million to $29.6 million. We believe we have sufficient insurance coverage to fully cover this liability and have recorded a liability and related insurance receivable of approximately $0.4 million as of September 30, 2017, which approximates our share of the low end of the estimated range. We believe we are a de minimis participant and, as such, have been allocated an insignificant percentage of the total PRP cost sharing responsibility. Based on facts presently known to us, we believe that the potential for the final results of this case having a material adverse effect on our results of operations, financial position or cash flows is remote. This case has been ongoing for many years and we believe that it will continue for the indefinite future. No time frame for completion can be estimated at the present time.

PCB Contamination

We have been working with CT DEEP and the United States Environmental Protection Agency, Region I, in connection with certain polychlorinated biphenyl (PCB) contamination at our facility in Woodstock, Connecticut. The issue was originally discovered in the soil at the facility in the late 1990s, which has been remediated. Further contamination was later found in the groundwater beneath the property, which was addressed with the installation of a pump and treat system in 2011. The future costs related to the maintenance of the groundwater pump and treat system now in place at the site are expected to be minimal. We believe that the remaining remediation activity will continue for several more years and no time frame for completion can be estimated at the present time.

PCB contamination at this facility was also found in the buildings and courtyards original to the site, in addition to surrounding areas, including an on-site pond. We have completed remediation activities for the buildings and courtyards. We currently have a reserve of $0.2 million for the pond remediation recorded in our condensed consolidated statements of financial position. We believe this reserve will be adequate to cover the remaining remediation work related to the pond contamination based on the information known at this time. However, if additional contamination is found, the cost of the remaining remediation may increase.

Asbestos Litigation

We, like many other industrial companies, have been named as a defendant in a number of lawsuits filed in courts across the country by persons alleging personal injury from exposure to products containing asbestos. We have never mined, milled, manufactured or marketed asbestos; rather, we made and provided to industrial users a limited number of products that contained encapsulated asbestos, but we stopped manufacturing these products in the late 1980s. Most of the claims filed against us involve numerous defendants, sometimes as many as several hundred.

The following table presents information about our recent asbestos claims activity:

	Asbestos Claims Activity
Claims outstanding at December 31, 2016	605
New claims filed	284
Pending claims concluded	(226)
Claims outstanding at September 30, 2017	663

For the nine months ended September 30, 2017, 211 claims were dismissed and 15 claims were settled. Settlements totaled approximately $2.4 million for the nine months ended September 30, 2017.

We recognize a liability for asbestos-related contingencies that are probable of occurrence and reasonably estimable. In connection with the recognition of liabilities for asbestos related matters, we record asbestos-related insurance receivables that are deemed probable. Our estimates of asbestos-related contingent liabilities and related insurance receivables are based on an independent actuarial analysis and an independent insurance usage analysis prepared annually by third parties. The actuarial analysis contains numerous assumptions, including general assumptions regarding the asbestos-related product liability litigation environment and company-specific assumptions regarding claims rates (including diseases alleged), dismissal rates, average settlement costs and average defense costs. The insurance usage analysis considers, among other things, applicable deductibles, retentions and policy limits, the

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

We review our asbestos-related forecasts annually in the fourth quarter of each year unless facts and circumstances materially change during the year, at which time we would analyze these forecasts. Currently, these analyses project liabilities and related insurance receivables over a 10-year period. It is probable we will incur additional costs for asbestos-related claims following this 10-year period, but we do not believe that any related contingencies are reasonably estimable beyond such period based on, among other things, the significant proportion of future claims included in the analysis and the lag time between the date a claim is filed

and its resolution. Accordingly, no liability (or related asset) has yet been recorded for claims that may be asserted subsequent to 2026.

As of December 31, 2016, the asbestos-related claims and insurance receivables for the 10-year projection period were $52.0 million and $48.4 million, respectively. As of September 30, 2017, there have been no changes to these projections.

To date, the defense and settlement costs of our asbestos-related product liability litigation have been substantially covered by insurance. We have identified continuous coverage for primary, excess and umbrella insurance from the 1950s through the mid-1980s, except for a period in the early 1960s, with respect to which we have entered into an agreement for primary, but not excess or umbrella, coverage. In addition, we have entered into a cost sharing agreement with most of our primary, excess and umbrella insurance carriers to facilitate the ongoing administration and payment of claims by the carriers. The cost sharing agreement may be terminated by any party, but will continue until a party elects to terminate it. As of the filing date for this report, the agreement has not been terminated. As previously disclosed, however, we expect to exhaust individual primary, excess and umbrella coverages over time, and there is no assurance that such exhaustion will not accelerate due to additional claims, damages and settlements or that coverage will be available as expected. Accordingly, while we believe it is reasonably possible that we may incur losses and defense costs in excess of our accruals in the future, we do not have sufficient data to provide a reasonable estimate or range of such losses and defense costs, at this time.

The amounts recorded for the asbestos-related liability and the related insurance receivables described above were based on facts known at the time and a number of assumptions. However, projecting future events, such as the number of new claims to be filed each year, the average cost of disposing of such claims, the length of time it takes to dispose of such claims, coverage issues among insurers and the continuing solvency of various insurance companies, as well as the numerous uncertainties surrounding asbestos litigation in the United States could cause the actual liability and insurance recoveries for us to be higher or lower than those projected or recorded.

There can be no assurance that our accrued asbestos liabilities will approximate our actual asbestos-related settlement and defense costs, or that our accrued insurance recoveries will be realized. We will continue to vigorously defend ourselves and believe we have substantial unutilized insurance coverage to mitigate future costs related to this matter.

General Litigation

In addition to the above issues, the nature and scope of our business brings us in regular contact with the general public and a variety of businesses and government agencies. Such activities inherently subject us to the possibility of litigation, including environmental and product liability matters that are defended and handled in the ordinary course of business. We have established accruals for matters for which management considers a loss to be probable and reasonably estimable. It is the opinion of management that facts known at the present time do not indicate that such litigation, after taking into account insurance coverage and the aforementioned accruals, will have a material adverse impact on our results of operations, financial position or cash flows.

Note 15 – Share Repurchase

On August 6, 2015, we initiated a share repurchase program (the Program) of up to $100.0 million of the Company’s capital stock. We initiated the Program to mitigate potentially dilutive effects of stock options and shares of restricted stock granted by the Company, in addition to enhancing shareholder value. The Program has no expiration date, and may be suspended or discontinued at any time without notice. As of September 30, 2017, $52.0 million remained available to repurchase under the Program.

No shares of capital stock were repurchased during the nine months ended September 30, 2017. All previous repurchases were made using cash from operations and cash on hand.

Note 16 – Income Taxes

Our effective income tax rate was 37.6% and 32.8% for the three months ended September 30, 2017 and 2016, respectively. The increase was primarily due to a change in valuation allowance associated with deferred tax assets that are capital in nature and changes in the pretax income mix across jurisdictions with disparate tax rates, partially offset by excess tax deductions on stock based compensation recognized in 2017.

Our effective income tax rate was 34.6% and 44.5% for the nine months ended September 30, 2017 and 2016, respectively. The decrease was primarily due to withholding taxes on off-shore cash movements and the change in our assertion that certain foreign earnings are permanently reinvested recorded in 2016, excess tax deductions on stock based compensation recognized in 2017 and a decrease in current year accruals of uncertain tax positions. This was partially offset by a decrease in reversal of reserves associated with uncertain tax positions, a change in valuation allowance associated with deferred tax assets that are capital in nature and changes in the pretax income mix across jurisdictions with disparate tax rates.

During the quarter, we established a valuation allowance of $1.9 million on a deferred tax asset associated with a capital investment because its realizability was determined to no longer meet the more likely than not threshold.

Historically, our intention was to permanently reinvest the majority of our foreign earnings indefinitely or to distribute them only when it was tax efficient to do so. As a result of certain internal restructuring transactions effectuated to more closely align our foreign subsidiaries from an operational, legal and geographic perspective and improve management of financial resources, with respect to offshore distributions, we modified our assertion of certain foreign subsidiary earnings considered permanently reinvested in 2016. In connection with this change, we recorded a deferred tax liability of $3.4 million associated with distribution-related foreign taxes on prior years' undistributed earnings of certain of our Chinese subsidiaries in the second quarter of 2016. These taxes become due when distributed to other offshore subsidiaries. In addition, we incurred $5.5 million of withholding taxes related to distributions from China in the second quarter of 2016. With few exceptions, U.S. income taxes have not been provided on undistributed earnings of international subsidiaries. We continue to intend to reinvest these earnings permanently outside the U.S. or to repatriate the earnings only when it is tax efficient to do so.

The total amount of unrecognized tax benefits as of September 30, 2017 was $6.8 million, of which $6.6 million would affect our effective tax rate if recognized. It is reasonably possible that approximately $1.6 million of our unrecognized tax benefits as of September 30, 2017 will reverse within the next twelve months.

We recognize interest and penalties related to unrecognized tax benefits through income tax expense. As of September 30, 2017, we had $0.7 million accrued for the payment of interest.

We are subject to taxation in the U.S. and various state and foreign jurisdictions. With few exceptions, we are no longer subject to examinations by tax authorities for years prior to 2012.

We adopted ASU 2016-09 on January 1, 2017. Upon adoption, we recognized excess tax benefits of approximately $12.7 million in deferred tax assets that were previously not recognized in a cumulative-effect adjustment to retained earnings. In addition, the new guidance requires that all of the tax effects related to share-based payments at settlement or expiration be recorded through the statement of operations which resulted in the recognition of $1.5 million and $3.2 million of income tax benefits during the three and nine months ended September 30, 2017, respectively. See Note 19 - "Recent Accounting Standards" for further information.

Note 17 – Restructuring and Impairment Charges

In the second quarter of 2017, we completed the physical relocation of our global headquarters from Rogers, Connecticut to Chandler, Arizona. We recorded $0.6 million and $2.4 million of expense related to this project in the three and nine months ended September 30, 2017. Severance activity related to the headquarters relocation is presented in the table below for the nine months ended September 30, 2017:

(Dollars in thousands)	Severance Related to Headquarters Relocation
Balance at December 31, 2016	$ 470
Provisions	361
Payments	(649)
Balance at September 30, 2017	$ 182

The fair value of the total severance benefits to be paid (including payments already made) in connection with the relocation is $1.1 million. This total is being expensed ratably over the required service period for the affected employees.

In the third quarter of 2017, we recognized a $0.3 million charge related to the impairment of our remaining investment in BrightVolt, Inc. (formerly known as Solicore, Inc.). As this investment does not relate to a specific operating segment, we allocated it ratably among the three main operating segments.

Note 18 – Assets Held for Sale

In the first quarter of 2017, we completed the planned sale of a parcel of land in Belgium that had been classified as held for sale as of December 31, 2016 and recognized a gain on sale of approximately $0.9 million in operating income. In the third quarter of 2017, we completed the sale of a facility located in Belgium that had been classified as

held for sale as of June 30, 2017 and recognized a gain on sale of approximately $4.4 million in operating income. In the second quarter of 2017, we began actively marketing for sale unutilized property in the U.S. consisting of a building and an adjacent parcel of land with a net book value of $0.9 million. The asset is no longer being depreciated and is classified as held for sale as of September 30, 2017 as we expect it to be sold within the next twelve months.

Note 19 – Recent Accounting Standards

In August 2017, the FASB issued ASU 2017-12, Derivatives and Hedging (Topic 815): Targeted Improvements to Accounting for Hedging Activities. These improvements expand and refine hedge accounting for both non-financial and financial risk components. Also, this amendment aligns the recognition and presentation of the effects of a hedging instrument and the hedged item in the financial statements. Additionally, this update includes certain targeted improvements to simplify the application of current guidance related to the assessment of hedge effectiveness. This update is effective for fiscal years, and interim periods within those fiscal years, beginning after December 15, 2018. Early adoption is permitted. The Company is in the process of evaluating the disclosure requirements and quantifying the financial impact of the adoption of this standard on our financial statements.

In May 2017, the FASB issued ASU No. 2017-09, Compensation - Stock Compensation (Topic 718): Scope of Modification Accounting. This ASU clarifies which changes to the terms or conditions of a share-based payment award require an entity to apply modification accounting. ASU No. 2017-09 is effective for interim and annual reporting periods beginning after December 15, 2017. Adoption of this standard will be applied prospectively to awards modified on or after the adoption date. The impact of this new standard will depend on the extent and nature of future changes to the terms and conditions of the Company’s share-based payment awards. Historically, the Company has not had significant changes to its share-based payment awards and therefore does not expect adoption of this guidance to have a material effect on the financial statements upon its adoption in 2018.

In March 2017, the FASB issued ASU No. 2017-05 and ASU No. 2017-07, Compensation - Retirement Benefits (Topic 715): Improving the Presentation of Net Periodic Pension Cost and Net Periodic Post-Retirement Benefit Cost. The changes to the standard require employers to report the service cost component in the same line item as other compensation costs arising from services rendered by employees during the reporting period. The other components of net periodic pension benefit costs will be presented in the statement of operations separately from the service cost and outside of a subtotal of operating income from operations. In addition, only the service cost component may be eligible for capitalization where applicable. ASU No. 2017-05 and ASU 2017-07 are effective for annual periods beginning after December 15, 2017. The Company expects to adopt this guidance when effective and the adoption is not expected to have a material effect on the financial statements.

In January 2017, the FASB issued ASU No. 2017-04, Intangibles-Goodwill and Other (Topic 350): Simplifying the Test for Goodwill Impairment, in an effort to simplify the subsequent measurement of goodwill and the associated procedures to determine fair value. The amendments of this ASU are effective for fiscal years beginning after December 15, 2019, and interim periods within those fiscal years. Early adoption is permitted, however, the Company has not yet determined if it will adopt prior to 2020. The adoption of this guidance is not expected to have a material impact on our financial statements.

In August 2016, the FASB issued ASU 2016-15, Statement of Cash Flows (Topic 230): Classification of Certain Cash Receipts and Cash Payments, with the intention to reduce diversity in practice, as well as simplify elements of classification within the statement of cash flows for certain transactions. The update was effective for interim and annual reporting periods beginning after December 15, 2016. The accounting update was to be adopted using a retrospective approach. The Company adopted ASU 2016-15 effective January 1, 2017, and it did not have a material impact on our financial statements.

In March 2016, the FASB issued ASU No. 2016-09, Improvements to Employee Share-Based Payment Accounting, which contains amendments intended to simplify various aspects of share-based payment accounting and presentation in the financial statements, including the income tax consequences, classification of awards as either equity or liabilities, treatment of forfeitures and statutory tax withholding requirements, and classification in the statement of cash flows. The update was effective for interim and annual reporting periods beginning after December 15, 2016. The new standard required a modified retrospective transition through a cumulative-effect adjustment as of the beginning of the period of adoption, with certain provisions requiring either a prospective or retrospective transition. The Company adopted ASU 2016-09 on January 1, 2017. Upon adoption, the Company recognized excess tax benefits of approximately $12.7 million in deferred tax assets that were previously not recognized in a cumulative-effect adjustment to retained earnings. In addition, the new guidance requires that all of the tax effects related to share-based payments at settlement or expiration be recorded through the statement of operations. The Company also adopted the

standard with respect to treatment of forfeitures, which did not have a material impact on our financial statements. In February 2016, the FASB issued ASU No. 2016-02, Leases, which sets out the principles for the recognition, measurement, presentation and disclosure of leases for both parties to a contract (i.e., lessees and lessors). The new standard requires lessees to classify leases as either finance or operating leases and record a right-of-use asset and a lease liability for all leases with a term of greater than 12 months regardless of their classification. An accounting policy election may be made to account for leases with a term of 12 months or less similar to existing guidance for operating leases today. ASU No. 2016-02 supersedes the existing guidance on accounting for leases. The standard is effective for interim and annual reporting periods for fiscal years beginning after December 15, 2018. Early adoption of this standard is permitted and it is to be adopted using a modified retrospective approach. The Company has initiated its implementation plan, which includes evaluating the classification of our lease agreements and quantifying the accounting impact in accordance with the new accounting standard. The Company expects to adopt this accounting standard beginning in fiscal year 2019.

In May 2014, the FASB issued ASU No. 2014-09, Revenue from Contracts with Customers, to achieve a consistent application of revenue recognition within the U.S., resulting in a single revenue model to be applied by reporting companies under U.S. generally accepted accounting principles. Under the new model, recognition of revenue occurs when a customer obtains control of promised goods or services in an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods or services. In addition, the new standard requires that reporting companies disclose the nature, amount, timing, and uncertainty of revenue and cash flows arising from contracts with customers. On July 9, 2015, the FASB agreed to delay the effective date by one year. In accordance with the agreed upon delay, the updated standard is effective for us beginning in the first quarter of 2018. Early adoption is permitted, but not before the original effective date of the standard. During 2016, the FASB issued new accounting standards updates regarding principal versus agent considerations in determining revenue recognition identifying performance obligations and licensing, collectability, sales tax, non-cash considerations, completed contracts, contract modifications and effect of accounting change. During 2017, the FASB issued new accounting standards updates regarding clarification of determining the customer in a service concession arrangement. The new standard is required to be applied retrospectively to each prior reporting period presented or retrospectively with the cumulative effect of initially applying the standard recognized at the date of initial implementation, without restatement of comparative periods. The Company plans to adopt this standard retrospectively with the cumulative effect recognized at January 1, 2018. The Company has established a cross-functional coordinated implementation team and engaged a third party service provider to assist with the project. The Company has completed its evaluation of contracts. The Company expects that a substantial portion of the business will continue to recognize revenue on a “point in time” basis. The financial impact of adoption primarily relates to recognizing revenue on an “over time” basis due to performance obligations to deliver products that do not have an alternative use to the company whereby the company has an enforceable right to payment evidenced by contractual termination clauses. The cost incurred method will be used to measure the progress to completion as it is the best depiction of the transferring of goods to the customer. The Company is in the process of quantifying the financial impact of the adoption as well as implementing changes to its systems, processes and internal controls, as necessary, to meet the reporting and disclosure requirements.

Item 2. Management's Discussion and Analysis of Financial Condition and Results of Operations

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

Forward-Looking Statements

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

- failure to capitalize on, or volatility within, the Company's growth drivers, including advanced mobility, advanced connectivity, clean energy, and safety and protection;
- uncertain business, economic and political conditions in the United States and abroad, particularly in China, South Korea, Germany, Hungary and Belgium, where we maintain significant manufacturing, sales or administrative operations;
- fluctuations in foreign currency exchange rates;
- our ability to develop innovative products and have them incorporated into end-user products and systems;
- the extent to which end-user products and systems incorporating our products achieve commercial success;
- the ability of our sole or limited source suppliers to deliver certain key raw materials to us in a timely manner;
- intense global competition affecting both our existing products and products currently under development;
- failure to realize, or delays in the realization of, anticipated benefits of acquisitions and divestitures due to, among other things, the existence of unknown liabilities or difficulty integrating acquired businesses;
- our ability to attract and retain management and skilled technical personnel;
- our ability to protect our proprietary technology from infringement by third parties and/or allegations that our technology infringes third party rights;
- changes in effective tax rates or tax laws and regulations in the jurisdictions in which we operate;
- failure to comply with financial and restrictive covenants in our credit agreement or restrictions on our operational and financial flexibility due to such covenants;
- the outcome of ongoing and future litigation, including our asbestos-related product liability litigation;
- changes in environmental laws and regulations applicable to our business;
- disruptions in, or breaches of, our information technology systems;
- restructuring and asset impairment charges; and
- changes in accounting standards promulgated by the Financial Accounting Standards Board (FASB) and the Securities and Exchange Commission (SEC).

Our forward-looking statements are expressly qualified by these cautionary statements, which you should consider carefully, along with the risks discussed in this section and elsewhere in this report and in our Annual Report on Form 10-K for the year ended December 31, 2016 (the Annual Report), any of which could cause actual results to differ materially from historical results or anticipated results. We undertake no obligation to update or revise any forward-looking statements, whether as a result of new information, future events or otherwise, unless required by law.

The following discussion and analysis of our financial condition and results of operations should be read together with our Condensed Consolidated Financial Statements and the related notes that appear elsewhere in this Form 10-Q along with our audited consolidated financial statements and the related notes thereto in our Annual Report.

In the following discussion and analysis, we sometimes provide financial information that was not prepared in accordance with U.S. generally accepted accounting principles (GAAP). Management believes that such non-GAAP information can provide meaningful supplemental information regarding the Company's performance by excluding certain expenses that are generally non-recurring or otherwise may not be indicative of the core business operating results. In general, the Company believes that any such additional non-GAAP financial information provided is useful to management and investors in assessing the Company's historical performance and for planning, forecasting and analyzing future periods. However, non-GAAP information has limitations as an analytical tool and should not be considered in isolation from, or solely as an alternative to, financial information prepared in accordance with GAAP. Any time we provide non-GAAP information in the following narrative we identify it as such and in close proximity provide the most directly comparable GAAP financial measure, as well as the information necessary to reconcile the two measures.

Executive Summary

Company Background and Strategy

Rogers Corporation designs, develops, manufactures and sells high-quality and high-reliability engineered materials and components for mission critical applications. We operate principally three strategic business segments: Advanced Connectivity Solutions (ACS), Elastomeric Material Solutions (EMS) and Power Electronics Solutions (PES). We have a history of innovation and have established two Rogers Innovation Centers for our leading research and development activities, in Massachusetts and Suzhou, China. We are now headquartered in Chandler, Arizona.

Our growth strategy is based upon the following principles: (1) market-driven organization, (2) innovation leadership, (3) synergistic mergers and acquisitions, and (4) operational excellence. Our ability to manage the risks inherent in the markets into which we sell our products, and thereby maintain our financial performance in the future, will depend, in part, on our ability to continue to maintain our focus on these principles. As a market-driven organization, we are focused on growth drivers, including advanced mobility, advanced connectivity, clean energy, and safety and protection. More specifically, the key trends and markets that affect our business include the growth in automotive, automotive radar, electric vehicles, hybrid electric vehicles, rail, aviation, telecom, wireless, internet connectivity, renewable energy, aerospace and defense, and general industrial markets.

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

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

In executing on our growth strategy, we have completed three strategic acquisitions: (1) in January 2017, we acquired the principal operating assets of Diversified Silicone Products, Inc. (DSP), a custom silicone product development and manufacturing business, serving a wide range of high reliability applications, (2) in November 2016, we acquired DeWAL Industries LLC (DeWAL), a leading manufacturer of polytetrafluoroethylene and ultra-high molecular weight polyethylene films, pressure sensitive tapes and specialty products for the industrial, aerospace, automotive, and electronics markets, and (3) in January 2015, we acquired Arlon LLC and its subsidiaries, other than Arlon India (Pvt) Limited (the acquired entities, collectively, Arlon), a leading manufacturer of high performance materials for the printed circuit board industry and silicone rubber-based materials.

2017 Third Quarter Executive Summary

In the third quarter of 2017 as compared to the third quarter of 2016, our net sales increased 25.1% to $206.8 million, gross margin increased 220 basis points to 39.7%, and operating margin increased 510 basis points. The following key factors should be considered when reviewing our results of operations, financial condition and liquidity for the periods discussed:

- Our net sales increase in the third quarter of 2017 was attributable to increases in net sales across all of our strategic business segments, reflecting both organic growth within each business unit, and growth attributable to our recent acquisitions. Each of ACS, EMS and PES recorded net sales growth. ACS experienced continued growth in automotive, aerospace and defense, wireless infrastructure applications, and portable electronics, offset partially by lower demand in satellite dish applications. EMS net sales increased primarily from the recent acquisitions of DeWAL and DSP, and from higher demand from its core markets, including portable electronics, general industrial, and mass transit applications. PES saw strength across most of their traditional markets, including renewable energy, electric and hybrid electric vehicles, variable frequency motor drives, mass transit, and laser diode cooler applications. See "Segment Sales and Operations."
- Our gross margin improved 220 basis points and our operating margin improved 510 basis points in the third quarter of 2017 primarily as a result of increased demand and our operational improvement initiatives. Our gross margin

improved to 39.7% in the third quarter of 2017 as a result of increased net sales, as described above, and continued benefits from operational improvement initiatives. Operating income increased to $39.6 million in the third quarter of 2017, as compared to $23.1 million in the third quarter of 2016, reflecting an increase in net sales that more than offset an increase in selling, general & administrative (SG&A) expense. As a result, SG&A expense declined as a percentage of net sales from 19.1% in the third quarter of 2016 to 18.7% in the third quarter of 2017.

We are an innovation company, and in the third quarter of 2017 we continued our investment in research and development, with research and development expenses comprising 3.6% of our quarterly net sales. Research and development (R&D) expenses were $7.4 million in the third quarter of 2017, which was an increase of $0.1 million but a decline of 0.8% as a percentage of net sales from the third quarter of 2016. The year-over-year decline as a percentage of net sales is attributable to net sales growth (including the recent acquisitions), and we expect the percentage to rebalance closer to historical levels as we integrate the new businesses. Our spending continues to be focused on developing new platforms and technologies.

Results of Operations

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

	Quarter Ended		Nine Months Ended	
	September 30,		September 30,	
	2017	2016	2017	2016
Net sales	100.0 %	100.0 %	100.0 %	100.0 %
Gross margin	39.7 %	37.5 %	39.7 %	37.8 %
Selling, general and administrative expenses	18.7 %	19.1 %	18.4 %	19.8 %
Research and development expenses	3.6 %	4.4 %	3.5 %	4.3 %
Restructuring and impairment charges	0.5 %	— %	0.5 %	— %
Gain on sale of long-lived asset	(2.1)%	— %	(0.9)%	— %
Operating income	19.1 %	14.0 %	18.3 %	13.7 %
Equity income in unconsolidated joint ventures	0.7 %	0.5 %	0.5 %	0.5 %
Other income (expense), net	0.8 %	0.4 %	0.3 %	0.1 %
Interest expense, net	(0.8)%	(0.5)%	(0.8)%	(0.6)%
Income before income tax expense	19.8 %	14.5 %	18.4 %	13.6 %
Income tax expense	7.4 %	4.7 %	6.4 %	6.0 %
Net income	12.3 %	9.7 %	12.0 %	7.6 %

Net Sales	Quarter Ended			Nine Months Ended		
(Dollars in thousands)	September 30, 2017	September 30, 2016	Percent Change	September 30, 2017	September 30, 2016	Percent Change
Net sales	$206,783	$165,259	25.1%	$612,035	$483,314	26.6%
Gross margin	39.7 %	37.5 %		39.7 %	37.8 %	

Net sales increased by 25.1% in the third quarter of 2017 compared to the third quarter of 2016. This increase was driven by higher organic net sales in our three strategic business segments (ACS, EMS and PES), as well as from the net sales from our recent acquisitions, DeWAL and DSP. The ACS operating segment had an increase in net sales of 11.0% due to higher end-market demand in automotive, aerospace and defense, wireless infrastructure applications and portable electronics, partially offset by lower demand in satellite dish applications. EMS net sales increased 51.2% due to higher end-market demand in portable electronics, general industrial, and mass transit applications (13.1%), as well as from acquired businesses (38.1%). PES had increased net sales of 16.7% due to higher end-market demand in renewable energy, electric and hybrid electric vehicles, variable frequency motor drives, mass transit, and laser diode cooler applications. Net sales were favorably impacted by 0.5% due to currency fluctuations, primarily as a result of the appreciation in value of the Euro relative to the U.S. dollar offset in part by the depreciation in value of the Renminbi relative to the U.S. dollar.

On a year to date basis, net sales increased by 26.6% from the first nine months of 2016. The ACS operating segment net sales increased 9.5%. The EMS operating segment net sales increased 61.6% and the PES operating segment net sales increased 17.3%. Both ACS and PES had net sales increases from higher end-market demand, and EMS experienced higher net sales resulting from the acquisitions of DeWAL and DSP and organic net sales growth. Net sales were unfavorably impacted by 1.1% due to currency fluctuations, primarily as a result of the depreciation in value of the Renminbi and Euro relative to the U.S. dollar.

See “Segment Sales and Operations” below for further discussion on segment performance.

Gross Margin

Gross margin as a percentage of net sales increased 220 basis points to 39.7% in the third quarter of 2017 compared to 37.5% in the third quarter of 2016. Gross margin in the third quarter of 2017 was favorably impacted by an increase in net sales, and operational performance improvements driven by increased capacity utilization, operational process enhancements and automation, conversion of fixed cost structure to variable, benefits from low cost country manufacturing expansion, and synergies from the recent acquisitions.

On a year to date basis, gross margin as a percentage of net sales increased by 190 basis points to 39.7% in the first nine months of 2017 from 37.8% in the first nine months of 2016. Gross margin in the first nine months of 2017 was favorably impacted by an increase in net sales, and operational performance improvements. The first quarter of 2017 included $1.6 million of expense for a non-recurring purchase accounting fair value adjustment for inventory related to the DeWAL and DSP acquisitions.

Selling, General and Administrative Expenses	Quarter Ended			Nine Months Ended		
(Dollars in thousands)	September 30, 2017	September 30, 2016	Percent Change	September 30, 2017	September 30, 2016	Percent Change
Selling, general and administrative expenses	$38,615	$ 31,489	22.6%	$112,346	$ 95,718	17.4%
Percentage of net sales	18.7 %	19.1 %		18.4 %	19.8 %	

SG&A expenses increased 22.6% in the third quarter of 2017 from the third quarter of 2016, due principally to $2.8 million of additional equity and incentive compensation expense, $1.4 million of additional other intangible amortization and depreciation related to the acquisitions, and $1.3 million of additional SG&A expenses from the operations of the acquired businesses. SG&A declined as a percent of net sales to 18.7% in the third quarter of 2017 from 19.1% in the third quarter of 2016, as a result of administrative cost containment activities.

On a year to date basis, SG&A expenses increased 17.4%, due principally to $4.8 million of additional equity and incentive compensation expense, $3.9 million of additional other intangible amortization and depreciation related to the acquisitions, $3.8 million of additional SG&A expenses from the operations of the acquired businesses, and $2.6 million of acquisition and integration related costs. SG&A declined as a percent of net sales to 18.4% for the nine months ended September 30, 2017, from 19.8% from the corresponding prior year period, as a result of administrative cost containment activities.

Research and Development Expenses	Quarter Ended			Nine Months Ended		
(Dollars in thousands)	September 30, 2017	September 30, 2016	Percent Change	September 30, 2017	September 30, 2016	Percent Change
Research and development expenses	$7,411	$ 7,294	1.6%	$21,512	$ 20,916	2.8%
Percentage of net sales	3.6 %	4.4 %		3.5 %	4.3 %	

R&D expenses increased 1.6% in the third quarter of 2017 from the third quarter of 2016, and increased 2.8% in the nine months ended September 30, 2017 from the corresponding prior year period. The increases are due to continued investments that are targeted at developing new platforms and technologies focused on long-term growth initiatives at our innovation centers in the U.S. and Asia. Although R&D expenses as a percentage of net sales declined from the corresponding periods of the prior year, we expect the percentage to rebalance closer to historical levels as we integrate the new businesses.

Other Operating Expenses (Income)	Quarter Ended			Nine Months Ended		
(Dollars in thousands)	September 30, 2017	September 30, 2016	Percent Change	September 30, 2017	September 30, 2016	Percent Change
Restructuring and impairment charges	$962	$ —	100.0%	$2,767	$ —	100.0%
Gain on sale of long-lived asset	(4,387)	—	100.0%	(5,329)	—	100.0%

In the third quarter and first nine months of 2017, we recognized $0.6 million and $2.4 million of restructuring charges associated with the relocation of our global headquarters from Rogers, Connecticut to Chandler, Arizona. These charges consist of severance expense and other costs associated with relocating employees to the new location.

In the third quarter of 2017, we recognized a $0.3 million impairment charge related to our remaining investment in BrightVolt, Inc. (formerly known as Solicore, Inc.). As this investment does not relate to a specific operating segment, we allocated it ratably among the three main operating segments.

In the first quarter of 2017, we completed the planned sale of a parcel of land in Belgium that had been classified as held for sale as of December 31, 2016 and recognized a gain on sale of approximately $0.9 million. During the three

months ended September 30, 2017, we completed the sale of a facility located in Belgium that had been classified as held for sale as of June 30, 2017 and recognized a gain on sale of approximately $4.4 million.

Equity Income in Unconsolidated Joint Ventures	Quarter Ended			Nine Months Ended		
(Dollars in thousands)	September 30, 2017	September 30, 2016	Percent Change	September 30, 2017	September 30, 2016	Percent Change
Equity income in unconsolidated joint ventures	$1,384	$ 898	54.1%	$3,359	$ 2,220	51.3%

Equity income in unconsolidated joint ventures increased 54.1% in the third quarter of 2017 from the third quarter of 2016, and year to date increased 51.3%. The increases were due to higher demand, primarily in the portable electronics market.

Other Income (Expense), Net	Quarter Ended			Nine Months Ended		
(Dollars in thousands)	September 30, 2017	September 30, 2016	Percent Change	September 30, 2017	September 30, 2016	Percent Change
Other income (expense), net	$1,596	$ 676	136.1%	$2,126	$ 320	564.4%

Other income in the third quarter of 2017 was primarily attributable to gains in the value of our copper derivatives of $0.5 million and favorable foreign currency transaction costs of $1.0 million, compared to favorable foreign currency transaction costs of $1.3 million and unfavorable copper derivative transaction costs of $0.1 million in the third quarter of 2016. These gains were partially offset by $0.8 million of expense related to the reversal of receivables for uncertain tax positions.

In the nine months ended September 30, 2017, other income was attributable to gains of $1.7 million compared to gains of $1.0 million in the nine months ended September 30, 2016, primarily related to the value of the copper derivative contracts and favorable foreign currency transaction costs. In the nine months ended September 30, 2016, we recorded an additional loss related to the sale of the Arlon polyimide and thermoset laminate business of $0.2 million.

Interest Expense, Net	Quarter Ended			Nine Months Ended		
(Dollars in thousands)	September 30, 2017	September 30, 2016	Percent Change	September 30, 2017	September 30, 2016	Percent Change
Interest expense, net	$(1,639)	$ (811)	102.1%	$(4,834)	$ (3,047)	58.6%

Interest expense, net, increased by 102.1% in the third quarter of 2017 from the third quarter of 2016, and by 58.6% in the first nine months of 2017 from the first nine months of 2016. This increase was primarily due to the additional $166.0 million of debt incurred for the DeWAL and DSP acquisitions. As explained in “Liquidity, Capital Resources and Financial Position” below, however, we made discretionary payments of $50.0 million and $60.0 million, respectively, during the second and third quarters of 2017 to reduce our outstanding borrowings under our credit facility to $131.2 million, as of September 30, 2017.

Income Taxes	Quarter Ended			Nine Months Ended		
(Dollars in thousands)	September 30, 2017	September 30, 2016	Percent Change	September 30, 2017	September 30, 2016	Percent Change
Income tax expense	$15,396	$ 7,844	96.3%	$38,979	$ 29,125	33.8%
Effective tax rate	37.6 %	32.8 %		34.6 %	44.5 %	

Our effective income tax rate was 37.6% and 32.8% for the three months ended September 30, 2017 and 2016, respectively. The increase was primarily due to a change in valuation allowance associated with deferred tax assets that are capital in nature and changes in the pretax income mix across jurisdictions with disparate tax rates, partially offset by excess tax deductions on stock based compensation recognized in 2017.

Our effective income tax rate was 34.6% and 44.5% for the nine months ended September 30, 2017 and 2016, respectively. The decrease was primarily due to withholding taxes on off-shore cash movements and the change in our assertion that certain foreign earnings are permanently reinvested recorded in 2016, excess tax deductions on stock based compensation recognized in 2017 and a decrease in current year accruals of uncertain tax positions. This was partially offset by a decrease in reversal of reserves associated with uncertain tax positions, a change in valuation allowance associated with deferred tax assets that are capital in nature and changes in the pretax income mix across jurisdictions with disparate tax rates.

During the quarter, we established a valuation allowance of $1.9 million on a deferred tax asset associated with a capital investment because its realizability was determined to no longer meet the more likely than not threshold. Historically, our intention was to permanently reinvest the majority of our foreign earnings indefinitely or to distribute them only when it was tax efficient to do so. As a result of certain internal restructuring transactions effectuated to more closely align our

foreign subsidiaries from an operational, legal and geographic perspective and improve management of financial resources, with respect to offshore distributions, we modified our assertion of certain foreign subsidiary earnings considered permanently reinvested in 2016. In connection with this change, we recorded a deferred tax liability of $3.4 million associated with distribution-related foreign taxes on prior years' undistributed earnings of certain of our Chinese subsidiaries in the second quarter of 2016. These taxes become due when distributed to other offshore subsidiaries. In addition, we incurred $5.5 million of withholding taxes related to distributions from China in the second quarter of 2016. With few exceptions, U.S. income taxes have not been provided on undistributed earnings of international subsidiaries. We continue to intend to reinvest these earnings permanently outside the U.S. or to repatriate the earnings only when it is tax efficient to do so.

Segment Sales and Operations

Advanced Connectivity Solutions

	Quarter Ended		Nine Months Ended	
(Dollars in thousands)	September 30, 2017	September 30, 2016	September 30, 2017	September 30, 2016
Net sales	$72,713	$ 65,518	$225,595	$ 206,115
Operating income	$14,465	$ 7,605	$47,362	$ 34,334

The ACS operating segment is comprised of high frequency circuit material products used for making circuitry that receives, processes and transmits high frequency communications signals, in a wide variety of markets and applications, including wireless communications, automotive, high reliability, wired infrastructure, aerospace and defense, and consumer applications, among others.

Q3 2017 versus Q3 2016

ACS experienced continued growth in automotive, aerospace and defense, wireless infrastructure applications, and portable electronics, offset in part by lower demand in satellite dish applications. Net sales in this segment increased by 11.0% in the third quarter of 2017 compared to the third quarter of 2016. The increase in net sales over the third quarter of 2016 was favorably impacted by demand growth in automotive radar applications for Advanced Driver Assistance Systems (49%), aerospace and defense (14%), wireless telecom market for 4G LTE applications (5%), and portable electronics (76%), partially offset by lower demand in satellite dish applications (-60%). Currency fluctuations had a $0.1 million unfavorable impact on net sales due to the depreciation in value of the Renminbi relative to the U.S. dollar, largely offset by the appreciation in value of the Euro relative to the U.S. dollar.

Operating income increased by 90.2% in the third quarter of 2017 from the third quarter of 2016. As a percentage of net sales, operating income in the third quarter of 2017 was 19.9%, a 830 basis point increase as compared to the 11.6% reported in the third quarter of 2016. This increase is primarily due to the higher net sales previously noted as well as lower costs from continued operational efficiencies and cost reduction initiatives.

YTD 2017 versus YTD 2016

On a year to date basis, ACS experienced growth in automotive, aerospace and defense applications, offset in part by lower wireless infrastructure demand. Net sales in this segment increased by 9.5% in the first nine months of 2017 compared to the first nine months of 2016. The increase in net sales is primarily driven by demand growth in automotive radar applications (53%), and aerospace and defense programs (12%), partially offset by lower demand in the wireless telecom market for 4G LTE applications (-3%). Net sales were unfavorably impacted by 0.9% due to currency fluctuations, primarily as a result of the depreciation in value of the Renminbi and Euro relative to the U.S. dollar.

Operating income improved by 37.9% in the first nine months of 2017 from the first nine months of 2016. As a percentage of net sales, the first nine months of 2017 operating income was 21.0%, a 430 basis point increase as compared to the 16.7% reported in the first nine months of 2016. This increase is primarily due to the higher net sales as well as lower costs from continued operational efficiencies and cost reduction initiatives.

Elastomeric Material Solutions

	Quarter Ended	Nine Months Ended
(Dollars in thousands)		

	September 30, 2017	September 30, 2016	September 30, 2017	September 30, 2016
Net sales	$82,239	$ 54,391	$236,673	$ 146,476
Operating income	$17,846	$ 10,932	$44,826	$ 21,584

The EMS operating segment is comprised of polyurethane and silicone foam products, which are sold into a wide variety of applications and markets, including general industrial, portable electronics, automotive, mass transit and consumer applications. In November 2016, we completed the acquisition of DeWAL, a leading manufacturer of polytetrafluoroethylene, ultra-high molecular weight polyethylene films, pressure sensitive tapes and specialty products for the industrial, aerospace, automotive, and electronics markets. In January 2017, we acquired the principal operating assets of DSP, a custom silicone product development and manufacturing business, serving a wide range of high reliability applications. We are in the process of integrating DeWAL and DSP into our EMS segment.

Q3 2017 versus Q3 2016

EMS experienced organic net sales growth in the quarter, as well as growth from net sales stemming from our DeWAL and DSP acquisitions. Net sales in this segment increased by 51.2% in the third quarter of 2017 compared to the third quarter of 2016. The increase in net sales was driven by the acquisitions of DeWAL and DSP (38.1%), as well as an increase in organic net sales (13.1%). Organically, EMS experienced higher demand in portable electronics (14%), general industrial (13%), and mass transit applications (48%). Currency fluctuations had a $0.1 million unfavorable impact on net sales primarily as a result of the depreciation in value of the Renminbi relative to the U.S. dollar, largely offset by the appreciation in value of the Euro relative to the U.S. dollar.

Operating income increased by 63.2% in the third quarter of 2017 from the third quarter of 2016. As a percentage of net sales, third quarter of 2017 operating income was 21.7%, a 160 basis point increase as compared to the 20.1% reported in the third quarter of 2016. This increase is primarily due to the higher net sales attributable to growth from acquisitions and organic growth, as well as lower costs from continued operational efficiencies, partially offset by increases in other intangible amortization and depreciation expense of $1.4 million related to the DeWAL and DSP acquisitions.

YTD 2017 versus YTD 2016

On a year to date basis, EMS experienced strong net sales growth from the added net sales of the DeWAL and DSP acquisitions, as well as organically. Net sales in this segment increased by 61.6% in the first nine months of 2017 compared to the first nine months of 2016. The increase in net sales is primarily driven by the acquisitions of DeWAL and DSP (44.6%), as well as an increase in organic net sales (17%). Organically, EMS experienced higher demand in portable electronics (22%), general industrial (17%), automotive (33%), and mass transit (26%) applications. Net sales were unfavorably impacted by 1.1% due to currency fluctuations, primarily as a result of the depreciation in value of the Renminbi and Euro relative to the U.S. dollar.

Operating income improved by 107.7% in the first nine months of 2017 from the first nine months of 2016. As a percentage of net sales, the first nine months of 2017 operating income was 18.9%, a 420 basis point increase as compared to the 14.7% reported in the first nine months of 2016. This increase is primarily due to the higher net sales attributable to both acquisitions and organic growth, as well as lower costs from continued operational efficiencies. Operating income in the first nine months of 2017 included $1.6 million of expense for a non-recurring purchase accounting fair value adjustment for inventory related to the DeWAL and DSP acquisitions in addition to $2.6 million of acquisition and integration costs. The first nine months of 2017 also includes increased other intangible amortization and depreciation expense of $3.9 million related to the DeWAL and DSP acquisitions. Despite these expenses, operating income increased due to higher net sales and ongoing operational excellence initiatives.

Power Electronics Solutions

(Dollars in thousands)	Quarter Ended September 30, 2017	Quarter Ended September 30, 2016	Nine Months Ended September 30, 2017	Nine Months Ended September 30, 2016
Net sales	$46,409	$ 39,777	$132,966	$ 113,391
Operating income	$5,429	$ 2,767	$14,024	$ 4,540

The PES operating segment is comprised of two product lines - curamik® direct-bonded copper (DBC) substrates that are used primarily in the design of intelligent power management devices, such as IGBT (insulated gate bipolar transistor) modules that enable a wide range of products including highly efficient industrial motor drives, wind and solar energy converters and electrical systems in automobiles, and ROLINX® busbars that are used primarily in power distribution systems products in electric and hybrid electric vehicles and clean technology applications.

Q3 2017 versus Q3 2016

PES experienced net sales growth in the third quarter of 2017 across key markets, as compared to the third quarter of 2016. Net sales in this segment increased by 16.7% in the third quarter of 2017 from the third quarter of 2016. Net sales were positively impacted by higher demand for renewable energy (36%), electric and hybrid electric vehicles (12%), variable frequency motor drives (8%), mass transit (26%) and laser diode cooler applications (25%). Net sales were favorably impacted by $1.1 million or 2.8% due to currency fluctuations, primarily as a result of the appreciation in value of the Euro relative to the U.S. dollar.

Operating income for the quarter increased by 96.2% in the third quarter of 2017 from the third quarter of 2016. As a percentage of net sales, third quarter of 2017 operating income was 11.7%, a 470 basis point increase as compared to the 7.0% reported in the third quarter of 2016. This increase is primarily due to higher net sales and increased equipment utilization, supply chain volume discounts, and improved productivity from operational excellence initiatives.

YTD 2017 versus YTD 2016

Net sales in this segment increased by 17.3% in the first nine months of 2017 from the first nine months of 2016. Net sales increase was driven by higher demand for renewable energy (27%), electric and hybrid electric vehicles (14%), variable frequency motor drives (8%), laser diode cooler applications (44%), and mass transit applications (24%). Net sales were unfavorably impacted by 1.5% due to currency fluctuations, primarily as a result of the depreciation in value of the Euro and Renminbi relative to the U.S. dollar.

Operating income increased 208.9% in the first nine months of 2017 from the first nine months of 2016. As a percentage of net sales, the first nine months of 2017 operating income was 10.5%, a 650 basis point increase as compared to the 4.0% reported in the first nine months of 2016. This increase is primarily due to higher net sales and increased equipment utilization, supply chain volume discounts, and improved productivity from operational excellence initiatives.

Other

	Quarter Ended		Nine Months Ended	
(Dollars in thousands)	September 30, 2017	September 30, 2016	September 30, 2017	September 30, 2016
Net sales	$5,422	$ 5,573	$16,801	$ 17,332
Operating income	$1,847	$ 1,842	$5,576	$ 5,544

Our Other segment consists of our elastomer rollers and floats business, as well as our inverter distribution business.

Q3 2017 versus Q3 2016

Net sales decreased by 2.7% in the third quarter of 2017 from the third quarter of 2016. Currency fluctuations had a negligible impact on net sales. The decrease in net sales is primarily due to lower demand in global light vehicles.

Operating income increased 0.3% in the third quarter of 2017 compared to the third quarter of 2016. As a percentage of net sales, operating income increased to 34.1% in the third quarter of 2017 from 33.1% in the third quarter of 2016. This increase was primarily driven by operational improvements and efficiency initiatives.

YTD 2017 versus YTD 2016

Net sales decreased by 3.1% in the first nine months of 2017 from the first nine months of 2016, primarily due to a negative currency impact of 1.4% resulting from a decrease in the value of the Renminbi relative to the U.S. dollar. The decrease in net sales was also driven by lower demand in global light vehicles.

Operating income in the first nine months of 2017 was flat as compared to the first nine months of 2016. This was due to lower net sales, offset by the impact of continuing operating efficiencies.

Liquidity, Capital Resources and Financial Position

We believe that our ability to generate cash from operations to reinvest in our business is one of our fundamental strengths. We believe that our existing sources of liquidity and cash flows that are expected to be generated from our operations, together with our available credit facilities, will be sufficient to fund our operations, currently planned capital expenditures, research and development efforts and our debt service commitments. We continually review and evaluate the adequacy of our cash flows, borrowing facilities and banking relationships seeking to ensure that we have the appropriate access to cash to fund both our near-term operating needs and our long-term strategic initiatives.

(Dollars in thousands)	September 30, 2017	December 31, 2016
Key Balance Sheet Accounts:		
Cash and cash equivalents	$ 150,993	$ 227,767
Accounts receivable, less allowance for doubtful accounts of $1,452 and $1,952	$ 138,506	$ 119,604
Inventories	$ 114,118	$ 91,130
Outstanding borrowing on credit facilities (short term and long term)	$ 131,188	$ 241,188

(Dollars in thousands)	Nine Months Ended September 30, 2017	September 30, 2016
Key Cash Flow Measures:		
Cash provided by operating activities	$99,851	$ 94,223
Cash used in investing activities	$(68,699)	$ (14,926)
Cash used in financing activities	$(113,778)	$ (108,947)

At the end of the third quarter of 2017, cash and cash equivalents were $151.0 million as compared to $227.8 million at the end of 2016, a decrease of $76.8 million, or 33.7%. This decrease was primarily due to discretionary principal payments on our outstanding credit facility of $50.0 million and $60.0 million in the second and third quarters of 2017, respectively, a payment of $60.2 million for the acquisition of DSP in January 2017, and $17.7 million in capital expenditures, partially offset by cash generated by operations.

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

(Dollars in thousands)	September 30, 2017	December 31, 2016
U.S.	$28,087	$95,481
Europe	35,181	37,791
Asia	87,725	94,495
Total cash and cash equivalents	$150,993	$227,767

Cash held in certain foreign locations could be subject to additional taxes if we repatriate such amounts back to the U.S. or offshore subsidiaries. In 2016, as a result of certain internal restructuring transactions effectuated to more closely align our foreign subsidiaries from an operational, legal and geographic perspective and improve management of financial resources, we changed our estimate of the amount of foreign subsidiary earnings considered permanently reinvested. Undistributed earnings of certain of our Chinese subsidiaries are no longer considered indefinitely reinvested and may be distributed to other offshore subsidiaries. We have not changed our assertion with respect to distributions of earnings that would require the accrual of U.S. income tax.

Significant changes in our balance sheet accounts from December 31, 2016 to September 30, 2017 were as follows:

- Accounts receivable increased 15.8% to $138.5 million as of September 30, 2017, from $119.6 million at December 31, 2016. The increase from year end was primarily due to higher net sales in the third quarter of 2017, in comparison with the fourth quarter of 2016. Additionally, accounts receivable increased by $3.2 million as of September 30, 2017 due to the acquisition of DSP in January 2017.
- Inventory increased 25.2% to $114.1 million as of September 30, 2017, from $91.1 million at December 31, 2016 in anticipation of increased demand in the fourth quarter of 2017 within our EMS and PES segments. Additionally, inventory increased $2.7 million as of September 30, 2017 due to the acquisition of DSP in January 2017.

- Goodwill increased 12.5% to $234.6 million as of September 30, 2017, from $208.4 million at December 31, 2016. The increase is primarily due to the acquisition of DSP in January 2017.

- Other intangible assets increased 20.1% to $164.1 million as of September 30, 2017, from $136.7 million at December 31, 2016. This overall increase is primarily due to the acquisition of DSP in January 2017.

On February 17, 2017, we entered into the Third Amended and Restated Credit Agreement with JPMorgan Chase Bank, N.A., as administrative agent, and the lenders party thereto (the Third Amended Credit Agreement), which amended and restated the Second Amended Credit Agreement. The Third Amended Credit Agreement refinanced the Second Amended Credit Agreement, eliminated the term loan under the Second Amended Credit Agreement, and increased the principal amount of the revolving credit facility to up to $450.0 million borrowing capacity, with an additional $175.0 million accordion feature. All revolving loans under the Third Amended Credit Agreement are due on the maturity date, February 17, 2022. We are not required to make any quarterly principal payments under the Third Amended Credit Agreement. During the second and third quarters of 2017, we made discretionary principal payments of $50.0 million and $60.0 million, respectively, to reduce the amount outstanding on our credit facility. As of September 30, 2017, we had $131.2 million in outstanding borrowings under our credit facility.

The Third Amended Credit Agreement generally permits us to pay cash dividends to our shareholders, provided that (i) no default or event of default has occurred and is continuing or would result from the dividend payment and (ii) our leverage ratio does not exceed 2.75 to 1.00. If our leverage ratio exceeds 2.75 to 1.00, we may nonetheless make up to $20.0 million in restricted payments, including cash dividends, during the fiscal year, provided that no default or event of default has occurred and is continuing or would result from the payments. Our leverage ratio did not exceed 2.75 to 1.00 as of September 30, 2017.

During the third quarter of 2017, there were not any material new developments related to our capital lease. Refer to Note 12 - “Debt” of Notes to the condensed consolidated financial statements in Part I, Item 1 of this Form 10-Q for further discussion on liquidity matters.

Contingencies

During the third quarter of 2017, we did not become aware of any material new developments related to environmental matters or other contingencies or incur any material costs or capital expenditures related to environmental matters. Refer to Note 14, “Commitments and Contingencies” of Notes to the condensed consolidated financial statements in Part I, Item 1 of this Form 10-Q for further discussion on ongoing environmental and other contingencies.

Off-Balance Sheet Arrangements

As of September 30, 2017, we did not have any off-balance sheet arrangements that have or are, in the opinion of management, likely to have a current or future material effect on our financial condition or results of operations.

Critical Accounting Policies

There were no material changes in our critical accounting policies during the third quarter of 2017.

Recent Accounting Pronouncements

See Note 19, “Recent Accounting Standards” of Notes to the condensed consolidated financial statements in Part I, Item 1 of this Form 10-Q for discussion of recent accounting pronouncements including the respective expected dates of adoption.

Item 3. Quantitative and Qualitative Disclosures About Market Risk

There have been no significant changes in our exposure to market risk during the third quarter of 2017. For discussion of our exposure to market risk, refer to Item 7A, Quantitative and Qualitative Disclosures About Market Risk, contained in our Annual Report.

Item 4. Controls and Procedures

EVALUATION OF DISCLOSURE CONTROLS AND PROCEDURES

The Company, with the participation of our Chief Executive Officer and Chief Financial Officer, conducted an evaluation of the design and operation of our disclosure controls and procedures, as defined in Rules 13a-15(e) and 15d- 15(e) under the Securities Exchange Act of 1934, as amended (the Exchange Act), as of September 30, 2017. The Company's disclosure controls and procedures are designed (i) to ensure that information required to be disclosed by it in the reports that it files or submits under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms and (ii) to ensure that information required to be disclosed in the reports the Company files or submits under the Exchange Act is accumulated and communicated to its management, including its Chief Executive Officer and Chief Financial Officer, as appropriate to allow timely decisions regarding required disclosure. Based on their evaluation, our Chief Executive Officer and Chief Financial Officer have concluded that the Company's disclosure controls and procedures were effective as of September 30, 2017.

CHANGES IN INTERNAL CONTROL OVER FINANCIAL REPORTING

There were no changes in the Company's internal control over financial reporting during its most recently completed fiscal quarter that have materially affected or are reasonably likely to materially affect the Company's internal control over financial reporting, as defined in Rule 13a-15(f) and 15d-15(f) under the Exchange Act. This evaluation included the operations of DeWAL Industries LLC, which we acquired on November 23, 2016. The Company acquired Diversified Silicone Products, Inc., on January 6, 2017 and has elected to defer the related evaluation of internal control over financial reporting until 2018.

Part II - Other Information

Item 1. Legal Proceedings

See a discussion of environmental, asbestos and other litigation matters in Note 14, “Commitments and Contingencies,” of Notes to the condensed consolidated financial statements in Part I, Item 1 of this Form 10-Q.

Item 6. Exhibits

List of Exhibits:

3.1	Restated Articles of Organization of Rogers Corporation, as amended, incorporated by reference to Exhibit 3a to the Registrant’s Annual Report on Form 10-K for the fiscal year ended December 31, 2006 (the 2006 Form 10-K) (File No. 001-04347).
3.2	Amended and Restated Bylaws of Rogers Corporation, effective February 11, 2016, incorporated by reference to Exhibit 3.1 to the Registrant’s Current Report on Form 8-K filed on February 26, 2016.
31.1	Certification of President and Chief Executive Officer (Principal Executive Officer) pursuant to Rule 13a-14(a) of the Securities Exchange Act of 1934, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002, filed herewith.
31.2	Certification of Vice President, Finance and Chief Financial Officer (Principal Financial Officer) pursuant to Rule 13a-14(a) of the Securities Exchange Act of 1934, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002, filed herewith.
32	Certification of President and Chief Executive Officer (Principal Executive Officer) and Vice President, Finance and Chief Financial Officer (Principal Financial Officer) pursuant to Rule 13a-14(b) of the Securities Exchange Act of 1934 and 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, furnished herewith.
101	The following materials from Rogers Corporation’s Quarterly Report on Form 10-Q for the fiscal quarter ended September 30, 2017 formatted in XBRL (Extensible Business Reporting Language): (i) Condensed Consolidated Statements of Operations for the nine months ended September 30, 2017 and September 30, 2016, (ii) Condensed Consolidated Statements of Comprehensive Income (Loss) for the nine months ended September 30, 2017 and September 30, 2016, (iii) Condensed Consolidated Statements of Financial Position at September 30, 2017 and December 31, 2016, (iv) Condensed Consolidated Statement of Shareholders’ Equity at September 30, 2017 and December 31, 2016, (v) Condensed Consolidated Statements of Cash Flows for the nine months ended September 30, 2017 and September 30, 2016 and (vi) Notes to Condensed Consolidated Financial Statements.

Signatures

Pursuant to the requirements of the Securities Exchange Act of 1934, the Registrant has duly caused this report to be signed on its behalf by the undersigned thereunto duly authorized.

ROGERS CORPORATION
(Registrant)
/s/ Janice E. Stipp
Janice E. Stipp
Senior Vice President, Finance and Chief Financial Officer, Principal Financial Officer and Principal Accounting Officer

Dated: November 2, 2017