

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

FORM 10-Q

(Mark One)

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

For the quarterly period ended June 30, 2020

OR

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

For the transition period from _____ to _____

Commission File Number **001-11595**

Astec Industries, Inc.

(Exact name of registrant as specified in its charter)

Tennessee

(State or other jurisdiction of incorporation or organization)

62-0873631

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

1725 Shepherd Road , Chattanooga , Tennessee

(Address of principal executive offices)

37421

(Zip Code)

(423) 899-5898

(Registrant's telephone number, including area code)

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

Title of each Class	Trading Symbol	Name of each exchange on which registered
Common Stock	ASTE	The Nasdaq Stock Market LLC

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

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

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

Large Accelerated Filer

Non-accelerated filer

Accelerated Filer

Smaller Reporting Company

Emerging Growth Company

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

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act).

Yes

No

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

Class
Common Stock, par value \$0.20

Outstanding at August 3, 2020
22,602,982

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PART I - FINANCIAL INFORMATION**Item 1. Financial Statements**

Astec Industries, Inc.
Condensed Consolidated Balance Sheets
(in thousands) (unaudited)

	June 30, 2020	December 31, 2019
ASSETS		
Current assets:		
Cash and cash equivalents	\$ 119,797	\$ 48,857
Investments	2,903	1,547
Trade receivables and contract assets, net	114,917	120,271
Other receivables	3,793	4,576
Inventories	263,171	294,536
Prepaid and refundable income taxes	7,966	15,234
Assets held for sale	3,988	3,084
Prepaid expenses and other assets	13,870	18,199
Total current assets	<u>530,405</u>	<u>506,304</u>
Property and equipment, net	177,833	190,363
Investments	14,904	16,104
Goodwill	30,561	33,176
Intangible assets, net	22,581	23,536
Deferred income tax assets	11,148	24,696
Other long-term assets	6,406	6,319
Total assets	<u>\$ 793,838</u>	<u>\$ 800,498</u>
LIABILITIES AND EQUITY		
Current liabilities:		
Current maturities of long-term debt	\$ 152	\$ 209
Short-term debt	821	1,130
Accounts payable	48,242	57,162
Customer deposits	22,821	42,874
Accrued product warranty	10,691	10,261
Accrued payroll and related liabilities	21,849	24,718
Accrued loss reserves	2,413	2,299
Other current liabilities	37,038	34,114
Total current liabilities	<u>144,027</u>	<u>172,767</u>
Long-term debt	431	690
Deferred income tax liabilities	776	896
Other long-term liabilities	26,780	23,658
Total liabilities	<u>172,014</u>	<u>198,011</u>
Shareholders' equity	621,539	601,949
Non-controlling interest	285	538
Total equity	<u>621,824</u>	<u>602,487</u>
Total liabilities and equity	<u>\$ 793,838</u>	<u>\$ 800,498</u>

See Notes to Unaudited Condensed Consolidated Financial Statements

Astec Industries, Inc.
Condensed Consolidated Statements of Income
(in thousands, except per share data)
(unaudited)

	Three Months Ended June 30,		Six Months Ended June 30,	
	2020	2019	2020	2019
Net sales	\$ 265,299	\$ 304,802	\$ 554,147	\$ 630,582
Cost of sales	205,684	221,485	420,511	470,415
Gross profit	59,615	83,317	133,636	160,167
Selling, general, administrative and engineering expenses	42,762	52,792	98,929	110,951
Restructuring and asset impairment charges	5,994	44	8,705	556
Income from operations	10,859	30,481	26,002	48,660
Interest expense	(120)	(484)	(157)	(1,131)
Other income, net of expenses	434	372	668	839
Income from operations before income taxes	11,173	30,369	26,513	48,368
Income tax provision (benefit)	1,868	7,008	(3,275)	10,789
Net income	9,305	23,361	29,788	37,579
Net (income) loss attributable to non-controlling interest	(47)	16	114	72
Net income attributable to controlling interest	<u>\$ 9,258</u>	<u>\$ 23,377</u>	<u>\$ 29,902</u>	<u>\$ 37,651</u>
Earnings per common share				
Net income attributable to controlling interest:				
Basic	<u>\$ 0.41</u>	<u>\$ 1.04</u>	<u>\$ 1.33</u>	<u>\$ 1.67</u>
Diluted	<u>\$ 0.41</u>	<u>\$ 1.03</u>	<u>\$ 1.32</u>	<u>\$ 1.66</u>
Weighted average number of common shares outstanding:				
Basic	<u>22,584</u>	<u>22,509</u>	<u>22,567</u>	<u>22,503</u>
Diluted	<u>22,711</u>	<u>22,667</u>	<u>22,715</u>	<u>22,656</u>
Dividends declared per common share	<u>\$ 0.11</u>	<u>\$ 0.11</u>	<u>\$ 0.22</u>	<u>\$ 0.22</u>

See Notes to Unaudited Condensed Consolidated Financial Statements

Astec Industries, Inc.
Condensed Consolidated Statements of Comprehensive Income
(in thousands)
(unaudited)

	Three Months Ended June 30,		Six Months Ended June 30,	
	2020	2019	2020	2019
Net income	\$ 9,305	\$ 23,361	\$ 29,788	\$ 37,579
Other comprehensive income (loss):				
Foreign currency translation adjustments	513	(110)	(8,799)	853
Other comprehensive income (loss)	513	(110)	(8,799)	853
Comprehensive income	9,818	23,251	20,989	38,432
Comprehensive (income) loss attributable to non-controlling interest	(12)	3	251	62
Comprehensive income attributable to controlling interest	\$ 9,806	\$ 23,254	\$ 21,240	\$ 38,494

See Notes to Unaudited Condensed Consolidated Financial Statements

Astec Industries, Inc.
Condensed Consolidated Statements of Cash Flows
(in thousands)
(unaudited)

	Six Months Ended June 30,	
	2020	2019
Cash flows from operating activities:		
Net income	\$ 29,788	\$ 37,579
Adjustments to reconcile net income to net cash provided by operating activities:		
Depreciation and amortization	12,601	13,139
Provision for doubtful accounts	780	806
Provision for warranties	5,137	4,496
Deferred compensation expense	193	144
Stock-based compensation	2,987	1,739
Deferred income tax provision	13,428	8,412
(Gain) loss on disposition of fixed assets	(730)	176
Asset impairment charge	4,146	—
Distributions to SERP participants	(434)	(1,007)
Change in operating assets and liabilities:		
(Purchase) sale of trading securities, net	(9)	50
Trade and other receivables	5,445	(6,719)
Inventories	31,365	(5,240)
Prepaid expenses and other assets	2,681	564
Accounts payable	(7,714)	(2,006)
Accrued and payroll related expenses	(2,869)	(2,807)
Accrued product warranty	(4,538)	(5,287)
Customer deposits	(20,053)	(13,025)
Prepaid, refundable and income taxes payable, net	10,622	7,669
Other	2,068	4,188
Net cash provided by operating activities	84,894	42,871
Cash flows from investing activities:		
Expenditures for property and equipment	(7,407)	(8,657)
Proceeds from sale of property and equipment	1,987	136
Other	(206)	433
Net cash used by investing activities	(5,626)	(8,088)
Cash flows from financing activities:		
Payment of dividends	(4,970)	(4,956)
Borrowings under bank loans	821	121,041
Repayments of bank loans	(1,063)	(152,055)
Purchase of shares of subsidiaries	—	(16)
Sale of Company shares held by SERP	125	238
Withholding tax paid upon vesting of restricted stock units	(564)	(160)
Net cash used by financing activities	(5,651)	(35,908)
Effect of exchange rates on cash	(2,677)	209
Net change in cash and cash equivalents	70,940	(916)
Cash and cash equivalents, beginning of period	48,857	25,821
Cash and cash equivalents, end of period	\$ 119,797	\$ 24,905

See Notes to Unaudited Condensed Consolidated Financial Statements

Astec Industries, Inc.
Condensed Consolidated Statements of Equity
For the Three and Six Months Ended June 30, 2020 and 2019
(in thousands)
(unaudited)

For the Three Months Ended June 30, 2020

	Common Stock Shares	Common Stock Amount	Additional Paid-in- Capital	Accumulated Other Comprehensive Loss	Company Shares Held by SERP	Retained Earnings	Non- controlling Interest	Total Equity
Balance, March 31, 2020	22,584	\$ 4,516	\$ 123,950	\$ (41,013)	\$ (1,752)	\$ 526,502	\$ 274	\$ 612,477
Net income	—	—	—	—	—	9,258	47	9,305
Other comprehensive income	—	—	—	548	—	—	(35)	513
Dividends declared and paid	—	—	7	—	—	(2,492)	—	(2,485)
Stock-based compensation	—	—	1,852	—	—	—	—	1,852
RSU vesting	19	4	(4)	—	—	—	—	—
Withholding tax paid upon vesting of RSUs	—	—	—	—	—	—	—	—
SERP transactions, net	—	—	36	—	127	—	—	163
Other	—	—	—	—	—	—	(1)	(1)
Balance, June 30, 2020	<u>22,603</u>	<u>\$ 4,520</u>	<u>\$ 125,841</u>	<u>\$ (40,465)</u>	<u>\$ (1,625)</u>	<u>\$ 533,268</u>	<u>\$ 285</u>	<u>\$ 621,824</u>

For the Six Months Ended June 30, 2020

	Common Stock Shares	Common Stock Amount	Additional Paid-in- Capital	Accumulated Other Comprehensive Loss	Company Shares Held by SERP	Retained Earnings	Non- controlling Interest	Total Equity
Balance, December 31, 2019	22,551	\$ 4,510	\$ 122,613	\$ (31,803)	\$ (1,714)	\$ 508,343	\$ 538	\$ 602,487
Net income	—	—	—	—	—	29,902	(114)	29,788
Other comprehensive loss	—	—	—	(8,662)	—	—	(137)	(8,799)
Dividends declared and paid	—	—	7	—	—	(4,977)	—	(4,970)
Stock-based compensation	1	—	3,760	—	—	—	—	3,760
RSU vesting	51	10	(10)	—	—	—	—	—
Withholding tax paid upon vesting of RSUs	—	—	(565)	—	—	—	—	(565)
SERP transactions, net	—	—	36	—	89	—	—	125
Other	—	—	—	—	—	—	(2)	(2)
Balance, June 30, 2020	<u>22,603</u>	<u>\$ 4,520</u>	<u>\$ 125,841</u>	<u>\$ (40,465)</u>	<u>\$ (1,625)</u>	<u>\$ 533,268</u>	<u>\$ 285</u>	<u>\$ 621,824</u>

For the Three Months Ended June 30, 2019

	Common Stock Shares	Common Stock Amount	Additional Paid-in- Capital	Accumulated Other Comprehensive Loss	Company Shares Held by SERP	Retained Earnings	Non- controlling Interest	Total Equity
Balance, March 31, 2019	22,523	\$ 4,505	\$ 121,665	\$ (33,641)	\$ (1,669)	\$ 507,759	\$ 647	\$ 599,266
Net income	—	—	—	—	—	23,377	(16)	23,361
Other comprehensive loss	—	—	—	(110)	—	—	—	(110)
Dividends declared and paid	—	—	3	—	—	(2,481)	—	(2,478)
Stock-based compensation	1	—	596	—	—	—	—	596
RSU vesting	7	1	(1)	—	—	—	—	—
Withholding tax paid upon vesting of RSUs	—	—	—	—	—	—	—	—
Change in ownership percentage of subsidiary	—	—	—	—	—	—	(9)	(9)
SERP transactions, net	—	—	22	—	(47)	—	—	(25)
Other	—	—	—	—	—	—	7	7
Balance, June 30, 2019	<u>22,531</u>	<u>\$ 4,506</u>	<u>\$ 122,285</u>	<u>\$ (33,751)</u>	<u>\$ (1,716)</u>	<u>\$ 528,655</u>	<u>\$ 629</u>	<u>\$ 620,608</u>

For the Six Months Ended June 30, 2019

	Common Stock Shares	Common Stock Amount	Additional Paid-in- Capital	Accumulated Other Comprehensive Loss	Company Shares Held by SERP	Retained Earnings	Non- controlling Interest	Total Equity
Balance, December 31, 2018	22,513	\$ 4,503	\$ 120,601	\$ (33,883)	\$ (1,886)	\$ 495,245	\$ 710	\$ 585,290
Net income	—	—	—	—	—	37,651	(72)	37,579
Other comprehensive income	—	—	—	853	—	—	—	853
Dividends declared and paid	—	—	6	—	—	(4,962)	—	(4,956)
Stock-based compensation	2	—	1,773	—	—	—	—	1,773
RSU vesting	16	3	(3)	—	—	—	—	—
Withholding tax paid upon vesting of RSUs	—	—	(160)	—	—	—	—	(160)
Cumulative impact of ASU No. 2018-02	—	—	—	(721)	—	721	—	—
SERP transactions, net	—	—	68	—	170	—	—	238
Change in ownership percentage of subsidiary	—	—	—	—	—	—	(9)	(9)
Balance, June 30, 2019	<u>22,531</u>	<u>\$ 4,506</u>	<u>\$ 122,285</u>	<u>\$ (33,751)</u>	<u>\$ (1,716)</u>	<u>\$ 528,655</u>	<u>\$ 629</u>	<u>\$ 620,608</u>

See Notes to Unaudited Condensed Consolidated Financial Statements

ASTEC INDUSTRIES, INC.

NOTES TO UNAUDITED CONDENSED CONSOLIDATED FINANCIAL STATEMENTS

(Dollar and share amounts in thousands, except per share amounts, unless otherwise specified)

Note 1. Significant Accounting Policies

Basis of Presentation

The accompanying unaudited condensed consolidated financial statements have been prepared in accordance with U.S. generally accepted accounting principles (“U.S. GAAP”) for interim financial information and with the instructions to Form 10-Q and Article 10 of Regulation S-X promulgated under the Securities Exchange Act of 1934. Accordingly, they do not include all of the information and footnotes required by U.S. GAAP for complete financial statements. In the opinion of management, all adjustments (consisting of normal recurring accruals) considered necessary for a fair presentation have been included.

U.S. GAAP requires us to make estimates based on assumptions about current and, for some estimates, future economic and market conditions which affect reported amounts and related disclosures in our financial statements. Although our current estimates contemplate current and expected future conditions, as applicable, it is reasonably possible that actual conditions could differ from our expectations, which could materially affect our results of operations and financial position. In particular, a number of estimates have been and will continue to be affected by the ongoing novel coronavirus pandemic (“COVID-19”). The severity, magnitude and duration, as well as the economic consequences of COVID-19, are uncertain, rapidly changing and difficult to predict. As a result, our accounting estimates and assumptions may change over time in response to COVID-19. Such changes could result in future impairments of goodwill, intangibles, long-lived assets and investment securities and incremental credit losses on receivables, among other issues.

Operating results for the three and six-month periods ended June 30, 2020 are not necessarily indicative of the results that may be expected for the year ending December 31, 2020. It is suggested that these unaudited condensed consolidated financial statements be read in conjunction with the consolidated financial statements and the notes thereto included in the Astec Industries, Inc. Annual Report on Form 10-K for the year ended December 31, 2019.

The unaudited condensed consolidated balance sheet as of December 31, 2019 has been derived from the audited consolidated financial statements at that date but does not include all of the information and footnotes required by U.S. GAAP for complete financial statements.

The Company's sales and profit results were impacted in the second quarter of 2020 as a result of COVID-19. Determining the extent of variances and fluctuations from COVID-19 has been difficult because there have been no easily discernible trends or patterns to the Company's business. However, the Company expects that its results of operations in the third quarter of 2020 may reflect an increase in the severity of the impact of the effects of COVID-19, as well as negative impacts to subsequent periods. The Company continues to monitor the effects of COVID-19 on its reported sales and profit results and has taken steps to ensure employee and visitor safety, adequate liquidity and business continuity during this pandemic.

Certain reclassifications in amounts previously reported have been made to conform to current presentation.

Recent Accounting Pronouncements

In June 2016, the FASB issued ASU No. 2016-13, “Financial Instruments – Credit Losses (Topic 326), Measurement of Credit Losses on Financial Instruments”. The standard changes how credit losses are measured for most financial assets and certain other instruments that currently are not measured through net income. The standard requires an expected loss model for instruments measured at amortized cost as opposed to the current incurred loss approach. In valuing available for sale debt securities, allowances will be required to be recorded, rather than the current approach of reducing the carrying amount, for other than temporary impairments. A cumulative adjustment to retained earnings is to be recorded as of the beginning of the period of adoption to reflect the impact of applying the provisions of the standard. The standard is effective for public companies for periods beginning after December 15, 2019 and the Company adopted the new standard as of January 1, 2020. As the Company's credit losses are typically minimal, the adoption of this new standard did not have a significant impact on the Company's financial position, results of operations or cash flows and no cumulative adjustment to retained earnings was necessitated.

In February 2018, the FASB issued ASU No. 2018-02, “Income Statement – Reporting Comprehensive Income (Topic 220), Reclassification of Certain Tax Effects from Accumulated Other Comprehensive Income”, which permitted companies to reclassify tax effects stranded in accumulated other comprehensive income (“AOCI”) as a result of U.S. tax reform impacting tax rates or other items, such as changing from a worldwide tax system to a territorial system, from AOCI to retained earnings. Other tax effects stranded in AOCI due to other reasons, such as prior changes in tax laws or changes in valuation allowances, could not be reclassified. The new standard was effective for fiscal years beginning after December 15, 2018, and the Company adopted its provisions as of January 1, 2019. As a result of adopting this new standard, the Company reclassified \$0.7 million of previously stranded tax effects from accumulated other comprehensive loss to retained earnings as shown on the accompanying unaudited condensed consolidated statement of equity in the year ended December 31, 2019.

In August 2018, the FASB issued ASU No. 2018-13, “Fair Value Measurement (Topic 820): Disclosure Framework-Changes to the Disclosure Requirements for Fair Value Measurement” which aims to improve the overall usefulness of disclosures to financial statement users and reduce unnecessary costs to companies when preparing fair value measurement disclosures. The standard is effective for annual and interim periods beginning after December 15, 2019 with early adoption permitted. The Company adopted this new standard effective January 1, 2020. The adoption of this new standard did not have a material impact on its financial position, results of operations, cash flows or disclosures.

In December 2019, the FASB issued ASU 2019-12, “Income Taxes (Topic 740), Simplifying the Accounting for Income Taxes”, which eliminates certain exceptions related to the approach for intra-period tax allocation, the methodology for calculating income taxes in an interim period and the recognition of deferred tax liabilities for outside basis differences. The new guidance also simplifies aspects of the accounting for franchise taxes and enacted changes in tax laws or rates and clarifies the accounting for transactions that result in a step-up in the tax basis of goodwill. The new standard is effective for fiscal years beginning after December 15, 2020 and interim periods within those fiscal years with early adoption permitted in interim or annual periods if the Company has not yet issued financial statements. If the Company elects to early adopt the amendments in an interim period, it should reflect any adjustments as of the beginning of the annual period that includes the interim period and must adopt all amendments in the same period applying all guidance prospectively, except for certain amendments. The Company has not determined the impact of the statement’s provision on its financial position, results of operations or cash flows.

In March 2020, the FASB issued ASU 2020-04, “Reference Rate Reform (Topic 848)”, which provides optional guidance for a limited period of time to ease the potential burden in accounting (or the recognizing the effects of) reference rate reform on financial reporting. This was in response to stakeholders raising certain operational challenges likely to arise in accounting for contract modifications and hedge accounting because of reference rate reform. Some of those challenges relate to the significant volume of contracts and other arrangements, such as debt agreements, lease agreements, and derivative instruments, which will be modified to replace references to discontinued rates with references to replacement rates. For accounting purposes, such contract modifications are required to be evaluated in determining whether the modifications result in the establishment of new contracts or the continuation of existing contracts. Stakeholders indicated that due to the significant volume of affected contracts and other arrangements, together with a compressed time frame for making contract modifications, the application of existing accounting standards on assessing modifications versus extinguishments could be costly and burdensome. In addition, stakeholders indicated that financial reporting results should reflect the intended continuation of such contracts and arrangements during the period of the market-wide transition to alternative reference rates. This new standard is effective for annual and interim periods beginning after December 31, 2022. The Company has yet to determine what effects, if any, this will have on their debt instrument.

Note 2. Earnings per Share

Basic earnings per share are determined by dividing earnings by the weighted average number of common shares outstanding during each period. Diluted earnings per share include the potential dilutive effect of restricted stock units and shares held in the Company’s Supplemental Executive Retirement Plan.

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The following table sets forth net income attributable to controlling interest and the number of basic and diluted shares used in the computation of earnings per share:

<i>(in thousands, except per share amounts)</i>	Three Months Ended June 30,		Six Months Ended June 30,	
	2020	2019	2020	2019
Numerator:				
Net income attributable to controlling interest	\$ 9,258	\$ 23,377	\$ 29,902	\$ 37,651
Denominator:				
Denominator for basic earnings per share	22,584	22,509	22,567	22,503
Effect of dilutive securities:				
Restricted stock units	82	110	101	105
Supplemental Executive Retirement Plan	45	48	47	48
Denominator for diluted earnings per share	22,711	22,667	22,715	22,656

Note 3. Trade Receivables and Contract Assets, net

Trade receivables and contract assets are net of allowances for credit losses of \$2.1 million and \$1.4 million as of June 30, 2020 and December 31, 2019, respectively.

Note 4. Inventories

Inventories consist of the following:

<i>(in thousands)</i>	June 30, 2020	December 31, 2019
Raw materials and parts	\$ 163,523	\$ 160,872
Work-in-process	56,107	61,287
Finished goods	36,304	53,650
Used equipment	7,237	18,727
Total	\$ 263,171	\$ 294,536

Raw materials and parts are comprised of purchased steel and other purchased items for use in the manufacturing process or held for sale for the after-market parts business. The category also includes the manufacturing cost of completed equipment sub-assemblies produced for either integration into equipment manufactured at a later date or for sale in the Company's after-market parts business.

Work-in-process consists of the value of materials, labor and overhead incurred to date in the manufacturing of incomplete equipment or incomplete equipment sub-assemblies being produced.

Finished goods consist of completed equipment manufactured for sale to customers.

Used equipment consists of equipment accepted in trade or purchased on the open market. The category also includes equipment rented to prospective customers on a short-term or month-to-month basis. Used equipment is valued at the lower of acquired or trade-in cost or net realizable value determined on each separate unit. Each unit of rental equipment is valued at the lower of original manufacturing, acquired or trade-in cost or net realizable value.

Inventories are valued at the lower of cost (first-in, first-out) or net realizable value, which requires the Company to make specific estimates, assumptions and judgments in determining the amount, if any, of reductions in the valuation of inventories to their net realizable values. The net realizable values of the Company's products are impacted by a number of factors, including changes in the price of steel, competitive sales pricing, quantities of inventories on hand, the age of the individual inventory items, market acceptance of the Company's products, actions by our competitors, the condition of our used and rental inventory and general economic factors. Once an inventory item's value has been deemed to be less than cost, a net realizable value adjustment is calculated and a new "cost basis" for that item is effectively established. This new cost is retained for that item until such time as the item is disposed of or the Company determines that an additional write-down is necessary. Additional write-downs may be required in the future based upon changes in assumptions due to general economic downturns in the markets in which the Company operates, changes in competitor pricing, new product design or other technological advances introduced by the Company or its competitors and other factors unique to individual inventory items.

The most significant component of the Company's inventory is steel. A significant decline in the market price of steel could result in a decline in the market value of the Company's equipment or parts. During periods of significant declining steel prices, the Company reviews the valuation of its inventories to determine if reductions are needed in the recorded value of inventory on hand to its net realizable value.

The Company reviews the individual items included in its finished goods, used equipment and rental equipment inventory on a model-by-model or unit-by-unit basis to determine if any item's net realizable value is below its carrying value. This analysis is expanded to include items in work-in-process and raw material inventory if factors indicate those items may also be impacted. In performing this review, judgments are made and, in addition to the factors discussed above, additional consideration is given to the age of the specific items of used or rental inventory, prior sales offers or lack thereof, the physical condition of the specific items and general market conditions for the specific items. Additionally, an analysis of raw material inventory is performed to calculate reserves needed for obsolete inventory based upon quantities of items on hand, the age of those items and their recent and expected future usage or sale.

When the Company determines that the value of inventory has become impaired through damage, deterioration, obsolescence, changes in price levels, excessive levels of inventory or other causes, the Company reduces the carrying value to the net realizable value based on estimates, assumptions and judgments made from the information available at that time. Abnormal amounts of idle facility expense, freight, handling cost and wasted materials are recognized as current period charges.

Note 5. Property and Equipment

Property and equipment is stated at cost, less accumulated depreciation of \$266.5 million and \$267.7 million as of June 30, 2020 and December 31, 2019, respectively.

Note 6. Fair Value Measurements

The Company has various financial instruments that must be measured at fair value on a recurring basis, including marketable debt and equity securities held by Astec Insurance Company ("Astec Insurance"), the Company's captive insurance company; marketable equity securities held in an unqualified Supplemental Executive Retirement Plan ("SERP"); and a money market fund held by a foreign subsidiary. The obligations of the Company associated with the financial assets held in the SERP also constitute a liability of the Company for financial reporting purposes and are included in other long-term liabilities in the accompanying unaudited condensed consolidated balance sheets. The Company's subsidiaries also occasionally enter into foreign currency exchange contracts to mitigate exposure to fluctuations in currency exchange rates.

The carrying amount of cash and cash equivalents, trade receivables and contract assets, other receivables, accounts payable, short-term debt and long-term debt approximates their fair value because of their short-term nature and/or interest rates associated with the instruments. Investments are carried at their fair value based on quoted market prices for identical or similar assets or, where no quoted prices exist, other observable inputs for the asset. The fair values of foreign currency exchange contracts are based on quotations from various banks for similar instruments using models with market based inputs.

Financial assets and liabilities are categorized based upon the level of judgment associated with the inputs used to measure their fair value. The inputs used to measure the fair value are identified in the following hierarchy:

Level 1 -	Unadjusted quoted prices in active markets for identical assets or liabilities.
Level 2 -	Unadjusted quoted prices in active markets for similar assets or liabilities; or unadjusted quoted prices for identical or similar assets or liabilities in markets that are not active; or inputs other than quoted prices that are observable for the asset or liability.
Level 3 -	Inputs reflect management's best estimate of what market participants would use in pricing the asset or liability at the measurement date. Consideration is given to the risk inherent in the valuation technique and the risk inherent in the inputs to the model.

The Company reevaluates the volume of trading activity for each of its investments at the end of each quarter and adjusts the level within the fair value hierarchy as needed. As indicated in the tables below (which excludes the Company's pension assets), the Company has determined that all of its financial assets and liabilities as of June 30, 2020 and December 31, 2019 are Level 1 and Level 2 in the fair value hierarchy as defined above:

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<i>(in thousands)</i>	June 30, 2020		
	Level 1	Level 2	Total
Financial Assets:			
Trading equity securities:			
SERP money market fund	\$ 229	\$ —	\$ 229
SERP mutual funds	4,391	—	4,391
Preferred stocks	268	—	268
Trading debt securities:			
Corporate bonds	5,581	—	5,581
Municipal bonds	—	1,147	1,147
Floating rate notes	356	—	356
U.S. government securities	2,078	—	2,078
Asset backed securities	—	2,394	2,394
Other	—	1,362	1,362
Total financial assets	<u>\$ 12,903</u>	<u>\$ 4,903</u>	<u>\$ 17,806</u>
Financial Liabilities:			
Derivative financial instruments	\$ —	\$ 365	\$ 365
SERP liabilities	—	6,708	6,708
Total financial liabilities	<u>\$ —</u>	<u>\$ 7,073</u>	<u>\$ 7,073</u>

<i>(in thousands)</i>	December 31, 2019		
	Level 1	Level 2	Total
Financial Assets:			
Trading equity securities:			
SERP money market fund	\$ 208	\$ —	\$ 208
SERP mutual funds	4,419	—	4,419
Preferred stocks	282	—	282
Trading debt securities:			
Corporate bonds	5,117	—	5,117
Municipal bonds	—	1,154	1,154
Floating rate notes	535	—	535
U.S. government securities	2,035	—	2,035
Asset backed securities	—	2,316	2,316
Other	473	1,112	1,585
Derivative financial instruments	—	4	4
Total financial assets	<u>\$ 13,069</u>	<u>\$ 4,586</u>	<u>\$ 17,655</u>
Financial Liabilities:			
Derivative financial instruments	\$ —	\$ 49	\$ 49
SERP liabilities	—	6,645	6,645
Total financial liabilities	<u>\$ —</u>	<u>\$ 6,694</u>	<u>\$ 6,694</u>

The trading equity securities noted above are valued at their fair value based on their quoted market prices, and the trading debt securities are valued based upon a mix of observable market prices and model driven prices derived from a matrix of observable market prices for assets with similar characteristics obtained with the assistance of a nationally recognized third-party pricing service. Additionally, a significant portion of the SERP's investments in trading equity securities are in money market and mutual funds. As these money market and mutual funds are held in a SERP, they are also included in the Company's liability under its SERP.

Trading debt securities are comprised of marketable debt securities held by Astec Insurance. Astec Insurance has an investment strategy that focuses on providing regular and predictable interest income from a diversified portfolio of high-quality fixed income securities.

The Company has \$103.5 million in a government money market fund at June 30, 2020, which is included in cash and cash equivalents in the accompanying unaudited condensed consolidated balance sheet.

Note 7. Goodwill

The Company tests goodwill and indefinite-lived intangible assets for impairment annually, as of October 31, or more frequently should circumstances change or events occur that would more likely than not reduce the fair value of a reporting unit below its carrying value. In the first quarter of 2020, as part of the Company's ongoing assessment to consider whether events or circumstances had occurred that could more likely than not reduce the fair value of a reporting unit below its carrying value, the Company performed an interim goodwill impairment test as of March 31, 2020 over the mobile asphalt equipment reporting unit. Based on the results of this testing, the Company recorded a \$1.6 million pre-tax non-cash impairment charge (in the Infrastructure Solutions segment) to fully impair the mobile asphalt equipment reporting unit's goodwill in the first quarter of 2020. This charge was included along with other restructuring and asset impairment charges in the accompanying unaudited condensed statement of income for six months ended June 30, 2020. No impairment was recorded during the three months ended June 30, 2020. The only other change to goodwill from values reported as of December 31, 2019 was the impact of foreign exchange rate changes on certain goodwill in the Materials Solutions segment during the six months ended June 30, 2020.

The carrying value of goodwill at June 30, 2020 and December 31, 2019 was \$30.6 million and \$33.2 million, respectively.

Note 8. Debt

In February 2019, the Company and certain of its subsidiaries entered into an amended and restated credit agreement whereby the lender extended to the Company an unsecured line of credit of up to \$150.0 million, including a sub-limit for letters of credit of up to \$30.0 million and extended the maturity date to December 29, 2023. Other significant terms were left unchanged. There were no borrowings outstanding under the agreement as of June 30, 2020, December 31, 2019 or at any time during the six months ended June 30, 2020. Letters of credit totaling \$8.8 million, including \$3.2 million of letters of credit issued to banks in Brazil to secure the local debt of Astec do Brasil Fabricacao de Equipamentos Ltda. ("Astec Brazil"), were outstanding under the credit facility as of June 30, 2020. Additional borrowing available under the credit facility was \$141.2 million as of June 30, 2020. Borrowings under the agreement are subject to an interest rate equal to the daily one-month LIBOR rate plus a 0.75% margin. The unused facility fee is 0.125%. The amended and restated credit agreement contains certain financial covenants, including provisions concerning required levels of annual net income and minimum tangible net worth.

The Company's South African subsidiary, Osborn Engineered Products SA (Pty) Ltd ("Osborn"), has a credit facility of \$5.5 million with a South African bank to finance short-term working capital needs, as well as to cover performance letters of credit, advance payment and retention guarantees. As of June 30, 2020, Osborn had no outstanding borrowings but had \$0.9 million in performance, advance payment and retention guarantees outstanding under the facility. The facility has been guaranteed by Astec Industries, Inc., but is otherwise unsecured. A 0.75% unused facility fee is charged if less than 50% of the facility is utilized. As of June 30, 2020, Osborn had available credit under the facility of \$4.6 million. The interest rate is 0.25% less than the South Africa prime rate.

The Company's Brazilian subsidiary, Astec Brazil, had a \$0.6 million and \$0.9 million working capital loan outstanding as of June 30, 2020 and December 31, 2019, respectively, from a Brazilian bank with an interest rate of 10.4%. The loan's final monthly payment is due in April 2024 and the debt is secured by Astec Brazil's manufacturing facility. Astec Brazil's debt is included in the accompanying unaudited condensed consolidated balance sheets as current maturities of long-term debt (\$0.2 million and \$0.2 million) and long-term debt (\$0.4 million and \$0.7 million) as of June 30, 2020 and December 31, 2019, respectively. Additionally, as of June 30, 2020 and December 31, 2019, respectively, Astec Brazil had \$0.2 million and \$1.1 million outstanding under order anticipation agreements with a local bank with maturity dates through September 2020, which are included as short-term debt in the accompanying unaudited condensed consolidated balance sheets. These loans are drawn under credit facilities with local Brazilian banks secured by letters of credit totaling \$3.2 million issued by Astec Industries, Inc.

The Company's U.K. subsidiary, Telestack, had a \$0.8 million and \$0.0 million working capital loan outstanding as of June 30, 2020 and December 31, 2019, respectively, from a U.K. bank with an annual interest rate of 2.60% as of June 30, 2020. The \$3.1 million credit facility size against which these drawings are outstanding is scheduled to decrease to \$0.3 million on December 31, 2020 and Telestack is currently working with the bank on an extension. This credit facility is secured by a parent guarantee from Astec Industries, Inc. and certain Telestack assets. Telestack's cash drawings against this credit facility are included in the accompanying unaudited condensed consolidated balance sheets as short-term debt as of June 30, 2020. Additionally, as of June 30, 2020 and December 31, 2019, respectively, Telestack had \$1.5 million and \$1.2 million outstanding under performance bonds and advance payment guarantees with the same U.K. bank with maturity dates through December 2021, which are contingent liabilities.

The Company’s Australian subsidiary, Astec Australia, has credit facilities of \$2.4 million with an Australian bank to finance short-term working capital needs, as well as to cover performance letters of credit, advance payment and retention guarantees. As of June 30, 2020, Astec Australia had no outstanding cash borrowings but had \$0.3 million in performance, advance payment and retention guarantees outstanding under the facilities which are contingent liabilities. The facilities are secured by certain Astec Australia assets. A 1.35% unused facility fee is charged on unused portions of the \$1.5 million portion which is a short-term working capital facility. As of June 30, 2020, Astec Australia had available credit under the short-term working capital facility of \$1.5 million. The interest rate is the Westpac Business One Loan Rate without a margin.

Note 9. Product Warranty Reserves

The Company warrants its products against manufacturing defects and performance to specified standards. The warranty period and performance standards vary by market and uses of its products, but generally range from three months to two years or up to a specified number of hours of operation. The Company estimates the costs that may be incurred under its warranties and records a liability at the time product sales are recorded. The product warranty liability is primarily based on historical claim rates, nature of claims and the associated cost.

Changes in the Company’s product warranty liability for the three and six-month periods ended June 30, 2020 and 2019 are as follows:

<i>(in thousands)</i>	Three Months Ended June 30,		Six Months Ended June 30,	
	2020	2019	2020	2019
Reserve balance, beginning of the period	\$ 10,652	\$ 11,051	\$ 10,261	\$ 10,928
Warranty liabilities accrued	2,405	1,750	5,137	4,496
Warranty liabilities settled	(2,409)	(2,644)	(4,538)	(5,287)
Other	43	(40)	(169)	(20)
Reserve balance, end of the period	<u>\$ 10,691</u>	<u>\$ 10,117</u>	<u>\$ 10,691</u>	<u>\$ 10,117</u>

Note 10. Accrued Loss Reserves

The Company records reserves for losses related to known workers’ compensation and general liability claims that have been incurred but not yet paid or are estimated to have been incurred but not yet reported to the Company. The undiscounted reserves are actuarially determined based on the Company’s evaluation of the type and severity of individual claims and historical information, primarily its own claims experience, along with assumptions about future events. Changes in assumptions, as well as changes in actual experience, could cause these estimates to change in the future. Total accrued loss reserves were \$6.7 million and \$6.8 million as of June 30, 2020 and December 31, 2019, respectively, of which \$4.3 million and \$4.5 million were included in other long-term liabilities in the accompanying unaudited condensed consolidated balance sheets as of June 30, 2020 and December 31, 2019, respectively.

Note 11. Leases

The Company leases certain real estate, computer systems, material handling equipment, offices, automobiles and other equipment. The Company determines if a contract is a lease (or contains an embedded lease) at the inception of the agreement. The Company adopted ASU No. 2016-2, Leases, on January 1, 2019 using the effective date method. Upon adoption, right-of-use (“ROU”) assets totaling \$5.0 million were recorded on the Company’s consolidated balance sheet. Incremental borrowing rates used in the calculation of the ROU asset, when not apparent in the lease agreements, were estimated based upon secured borrowing rates quoted by the Company’s banks for loans of various lengths ranging from one year to 20 years. Operating leases with original maturities less than one year in duration were excluded. The calculation of the ROU asset considered lease agreement provisions concerning termination, extensions, end of lease purchase and whether or not those provisions were reasonably certain of being exercised. Certain agreements contain lease and non-lease components, which are accounted for separately. No cumulative effect adjustment was necessary at the time of adoption. Based upon a contract review and related calculations, none of the Company’s leases were deemed to be financing leases.

Other information concerning the Company’s operating leases accounted for under ASC 842 guidelines and the related expense, assets and liabilities follow:

<i>(in thousands)</i>	Three Months Ended	
	June 30, 2020	June 30, 2019
Operating lease expense	\$ 502	\$ 651
Cash paid for operating leases included in operating cash flows	537	696

<i>(in thousands)</i>	Six Months Ended	
	June 30, 2020	June 30, 2019
Operating lease expense	\$ 1,165	\$ 1,252
Cash paid for operating leases included in operating cash flows	1,234	1,341

<i>(in thousands)</i>	June 30, 2020	December 31, 2019
Operating lease right-of-use asset	\$ 3,760	\$ 3,853
Operating lease short-term liability included in other current liabilities	1,768	1,846
Operating lease long-term liability included in other long-term liabilities	2,031	2,020
Weighted average remaining lease term (in years)	4.57	4.66
Weighted average discount rate used in calculating right-of-use asset	3.89 %	3.56 %

Future annual minimum lease payments as of June 30, 2020 are as follows:

<i>(in thousands)</i>	Amount
Remainder of 2020	\$ 1,074
2021	1,265
2022	540
2023	316
2024	209
2025 and thereafter	786
Total	4,190
Less interest	(380)
Present value of lease liabilities	\$ 3,810

Note 12. Income Taxes

The Company’s combined effective income tax rates were 16.7% and 23.1% for the three-month periods ended June 30, 2020 and 2019, respectively. The Company’s combined effective tax rates were (12.4)% and 22.3% for the six-month periods ended June 30, 2020 and 2019, respectively. The Company’s effective tax rate for June 30, 2020 includes the effect of state income taxes, a benefit for federal and state research and development credits, a net benefit for international provisions of US tax reform that became effective in 2018, and various discrete items with the largest being a benefit for the NOL carryback noted below.

The Company’s recorded liability for uncertain tax positions as of June 30, 2020 has increased by approximately \$0.6 million, as compared to December 31, 2019 due to exposure related to federal and state credits, plus additional taxes and interest on existing reserves.

On March 27, 2020, the Coronavirus Aid, Relief and Economic Security (“CARES”) Act was enacted and signed into law. Certain provisions of the CARES Act impact the 2020 income tax provision computations of the Company and are reflected in the period ended June 30, 2020. The CARES Act contains modifications to Net Operating Loss (“NOL”) carryback provisions, which will allow the Company to carryback its 2018 NOL recorded at a 21% statutory tax rate to prior tax years. This carryback to tax years with a higher statutory rate (35)% results in a net discrete tax benefit of \$9.5 million for the year-to-date period.

	Three Months Ended June 30, 2019		
<i>(in thousands)</i>	Infrastructure Solutions	Materials Solutions	Total
Net Sales-Domestic:			
Equipment sales	\$ 106,332	\$ 46,887	\$ 153,219
Pellet plant sales	20,000	—	20,000
Parts and component sales	35,862	18,921	54,783
Service and equipment installation revenue	6,436	2,431	8,867
Used equipment sales	3,390	—	3,390
Freight revenue	4,707	1,801	6,508
Other	146	(700)	(554)
Total domestic revenue	<u>176,873</u>	<u>69,340</u>	<u>246,213</u>
Net Sales-International:			
Equipment sales	10,435	24,416	34,851
Parts and component sales	7,860	11,438	19,298
Service and equipment installation revenue	2,089	308	2,397
Used equipment sales	191	371	562
Freight revenue	496	762	1,258
Other	21	202	223
Total international revenue	<u>21,092</u>	<u>37,497</u>	<u>58,589</u>
Total net sales	<u>\$ 197,965</u>	<u>\$ 106,837</u>	<u>\$ 304,802</u>

	Six Months Ended June 30, 2019		
<i>(in thousands)</i>	Infrastructure Solutions	Materials Solutions	Total
Net Sales-Domestic:			
Equipment sales	\$ 225,428	\$ 102,091	\$ 327,519
Pellet plant sales	20,000	—	20,000
Parts and component sales	90,360	38,080	128,440
Service and equipment installation revenue	11,210	3,056	14,266
Used equipment sales	6,153	413	6,566
Freight revenue	10,107	3,396	13,503
Other	729	(1,981)	(1,252)
Total domestic revenue	<u>363,987</u>	<u>145,055</u>	<u>509,042</u>
Net Sales-International:			
Equipment sales	31,849	43,465	75,314
Parts and component sales	16,626	21,616	38,242
Service and equipment installation revenue	3,485	700	4,185
Used equipment sales	301	837	1,138
Freight revenue	918	1,430	2,348
Other	48	265	313
Total international revenue	<u>53,227</u>	<u>68,313</u>	<u>121,540</u>
Total net sales	<u>\$ 417,214</u>	<u>\$ 213,368</u>	<u>\$ 630,582</u>

Sales into major geographic regions were as follows:

<i>(in thousands)</i>	Three Months Ended June 30,		Six Months Ended June 30,	
	2020	2019	2020	2019
United States	\$ 221,519	\$ 246,213	\$ 455,401	\$ 509,042
Canada	12,997	14,020	27,661	37,013
Australia	5,540	7,156	11,335	15,969
Africa	4,168	8,827	10,799	15,918
South America	11,164	7,581	19,960	14,635
Europe	4,831	12,982	14,206	19,472
Central America	917	2,602	2,307	6,152
China, Japan & Korea	1,777	440	4,047	2,580
Asia (excl. China, Japan & Korea)	1,159	2,816	1,594	4,947
West Indies	56	188	4,812	1,566
Middle East	1,167	925	2,016	1,776
Other	4	1,052	9	1,512
Total foreign	43,780	58,589	98,746	121,540
Total consolidated sales	\$ 265,299	\$ 304,802	\$ 554,147	\$ 630,582

Revenue is generally recognized when obligations under the terms of a contract are satisfied and generally occurs with the transfer of control of the product or services at a point in time. Revenue is measured as the amount of consideration the Company expects to receive in exchange for transferring goods or providing services. The Company generally obtains purchase authorizations from its customers for a specified amount of products at a specified price with specific delivery terms. A significant portion of the Company's equipment sales represents equipment produced in the Company's manufacturing facilities under short-term contracts for a customer's project or equipment designed to meet a customer's requirements. Most of the equipment sold by the Company is based on standard configurations, some of which are modified to meet customer's needs or specifications. The Company provides customers with technical design and performance specifications and typically performs pre-shipment testing, when feasible, to ensure the equipment performs according to the customer's need, regardless of whether the Company provides installation services in addition to selling the equipment. Significant down payments are required on many equipment orders with other terms allowing for payment shortly after shipment, typically 30 days. Taxes assessed by a governmental authority that are directly imposed on revenue-producing transactions between the Company and its customers, such as sales, use, value-added and some excise taxes, are excluded from revenue. Expected warranty costs for our standard warranties are expensed at the time the related revenue is recognized. Costs of obtaining sales contracts with an expected duration of one year or less are expensed as incurred. As contracts are typically fulfilled within one year from the date of the contract, revenue adjustments for a potential financing component or the costs to obtain the contract are not made. As of June 30, 2020, the Company had contract assets of \$25 thousand, and contract liabilities of \$5.1 million, including \$3.4 million of deferred revenue related to extended warranties. As of December 31, 2019, the Company had contract assets of \$4.7 million, primarily related to billings on one large (\$7.2 million) order in the Infrastructure Solutions segment, and contract liabilities of \$6.5 million, including \$3.5 million of deferred revenue related to extended warranties.

Depending on the terms of the arrangement with the customer, recognition of a portion of the consideration received may be deferred and recorded as a contract liability if we have to satisfy a future obligation, such as to provide installation assistance, service work to be performed in the future without charge, floor plan interest to be reimbursed to our dealer customers, payments for extended warranties, for annual rebates given to certain high volume customers or for obligations for future estimated returns to be allowed based upon historical trends.

Certain contracts include terms and conditions pursuant to which the Company recognizes revenues upon the completion of production, and the equipment is subsequently stored at the Company's plant at the customer's request. Revenue is recorded on such contracts upon the customer's assumption of title and risk of ownership, which transfers control of the equipment, and when collectability is reasonably assured. In addition, there must be a fixed schedule of delivery of the goods consistent with the customer's business practices, the Company must not have retained any specific performance obligations such that the earnings process is not complete and the goods must have been segregated from the Company's inventory prior to revenue recognition.

Service and Equipment Installation Revenue – Purchasers of certain of the Company’s equipment often contract with the Company to provide installation services. Installation is typically separately priced in the contract based upon observable market prices for stand-alone performance obligations or a cost plus margin approach when one is not available. The Company may also provide future services on equipment sold at the customer’s request, which may be for equipment repairs after the warranty period expires. Service is billed on a cost plus margin approach or at a standard rate per hour.

Used Equipment Sales – Used equipment is obtained by trade-in on new equipment sales, as a separate purchase in the open market or from the Company’s equipment rental business. Revenues from the sale of used equipment are recognized upon transfer of control to the customer at agreed upon pricing.

Freight Revenue – Under a practical expedient allowed under ASU No. 2014-9, the Company records revenues earned for shipping and handling as revenue at the time of shipment, regardless of whether or not it is identified as a separate performance obligation. The cost of shipping and handling is classified as cost of goods sold concurrently.

Other Revenues – Miscellaneous revenues and offsets not associated with one of the above classifications primarily include rental revenues, extended warranty revenues, early pay discounts and floor plan interest reimbursements.

The Company currently monitors credit levels and financial conditions of customers on a continuing basis. After considering historical trends for uncollectible accounts, current economic conditions and specific customer recent payment history and financial stability, each business unit records an allowance for doubtful accounts at a level which management believes is sufficient to cover all probable future credit losses as of the balance sheet date. The current policy for calculating the reserve uses the rolling twelve-month bad debt write-offs, net of recoveries, divided by the rolling twelve-month average accounts receivable balance. The Company believes the twelve-month “look-back” is most representative of current credit worthiness of the customer. After adjustments for credit balances, that percentage is then applied to the current month end accounts receivable balance to arrive at the amount to reserve. Once the reserve is calculated, each business unit reviews their accounts receivable for any known customer accounts that should be added to the reserve based on their expectation of future economic conditions that might impact the customer, which would currently include the impact of COVID-19. At a minimum, the reserve balance should equal the calculated amount before specifically reserved items. Thus, each business unit records their accounts receivable at an amount expected to be collected and, therefore, incorporates expected credit losses.

Amounts are deemed past due when they exceed the payment terms agreed to by the customer in the sales contract. Past due amounts are charged off when reasonable collection efforts have been exhausted and the amounts are deemed uncollectible by management. The majority of the Company’s receivables within the scope of this topic are related to equipment that requires significant down payment with other terms allowing for payment shortly after shipment, typically 30 days, which the Company believes is very short term in nature. The significant down payment requirement leads to lower write-offs because it requires an upfront commitment by customers and they ultimately don’t want to lose their upfront investment. The 30-day payment requirement after shipment allows us to quickly assess where a customer stands on their account and lets us begin collect efforts.

Note 14. Segment Information

During the first quarter of 2020, the Company completed an internal reorganization of its reportable segments from three to two reportable segments (plus Corporate) and such segments are organized, operated and managed based on the products and services offered by the business units included in each segment. Amounts previously reported under the previous segment structure have been restated to conform to the new segment structure.

A brief description of each of the Company’s segments is as follows:

Infrastructure Solutions - The Infrastructure Solutions segment, also referred to herein as the Infrastructure Solutions Group, is comprised of 13 business units. These business units include Astec, Inc. (“CHA-Jerome Ave”), Roadtec, Inc. (“CHA-Manufacturers Rd”), Carlson Paving Products, Inc. (“Tacoma”), Heatec, Inc. (“CHA-Wilson Rd”), CEI Enterprises, Inc. (“Albuquerque”), GEFCO, Inc. (“Enid”), Peterson Pacific Corp. (“EUG-Airport Rd”), Power Flame Incorporated (“Parsons”), RexCon, Inc. (“Burlington”), Astec Mobile Machinery GmbH (“AMM”), Astec Australia Pty Ltd (“Australia”), Astec LatAm (“LatAm”), and Astec Thailand (“Thailand”). Products designed, engineered, manufactured and marketed by this group include a complete line of asphalt plants and their related components, asphalt pavers, screeds, milling machines, material transfer vehicles, stabilizers and related ancillary equipment, concrete plants, water well drilling rigs, wood chippers, wood grinders, heaters, commercial burners and industrial burners. The principal purchasers of the segment’s products are asphalt producers, highway and heavy equipment contractors, foreign and domestic governmental agencies, processors of oil, gas and biomass for energy production, ready mix concrete producers and contractors in the construction and demolition recycling markets.

In 2018, the Company decided to close and cease operations at AMM, located in Germany, and its land and buildings were sold in January 2020. In late 2019, the Company announced the closing of its Albuquerque site due to market conditions and underutilization of the manufacturing facility. Responsibilities for manufacturing and marketing of Albuquerque product lines were transferred to other Company facilities within the Infrastructure Solutions segment in late 2019 and early 2020. The Albuquerque site was closed as of June 30, 2020 and its land and buildings are currently accounted for as held for sale. In late 2019, the Company impaired and discontinued Enid’s oil and gas product lines and is in the process of disposing of the related oil and gas inventory. The Company is also currently marketing its Enid production facilities and remaining water well product line of the business for sale.

Materials Solutions – The Materials Solutions segment is comprised of 10 business units which are focused on designing and manufacturing heavy processing equipment, as well as servicing and supplying parts for the aggregate, metallic mining, recycling, ports and bulk handling markets. These business units are Telsmith, Inc. (“Mequon”), Kolberg-Pioneer, Inc. (“Yankton”), Astec Mobile Screens, Inc. (“Sterling”), Johnson Crushers International, Inc. (“EUG-Franklin Blvd”), Breaker Technology Ltd/Breaker Technology, Inc. (“Thornbury”), Osborn Engineered Products, SA (Pty) Ltd (“Johannesburg”), Astec do Brasil Fabricacao de Equipamentos Ltda. (“Belo Horizonte”), Telestack Limited (“Omagh”), Astec India (“India”) and Astec AME (“AME”). The principal purchasers of products produced by this group are distributors, open mine operators, quarry operators, port and inland terminal operators, highway and heavy equipment contractors and foreign and domestic governmental agencies. The Company is currently in the process of closing its Mequon site and relocating those operations to other business units.

Corporate - This category consists of business units that do not meet the requirements for separate disclosure as an operating segment or inclusion in one of the other reporting segments and includes the Company’s parent company and Astec Insurance Company (“Astec Insurance”), a captive insurance company. Certain start-up costs related to foreign sales offices are also included in Corporate’s operating results. The Company evaluates performance and allocates resources to its operating segments based on profit or loss from operations before U.S. federal income taxes, state deferred taxes and corporate overhead and, thus, these costs are included in the Corporate category.

The accounting policies of the reportable segments are the same as those described in the summary of significant accounting policies. Intersegment sales and transfers are valued at prices comparable to those for unrelated parties.

Segment Information:

	Three Months Ended June 30, 2020			
<i>(in thousands)</i>	Infrastructure Solutions	Materials Solutions	Corporate	Total
Net sales to external customers	\$ 181,851	\$ 83,448	\$ —	\$ 265,299
Intersegment sales	12,340	6,822	—	19,162
Gross profit	38,290	21,214	111	59,615
Gross profit percent	21.1 %	25.4 %	— %	22.5 %
Segment profit (loss)	\$ 14,215	\$ 8,469	\$ (13,605)	\$ 9,079

	Six Months Ended June 30, 2020			
<i>(in thousands)</i>	Infrastructure Solutions	Materials Solutions	Corporate	Total
Net sales to external customers	\$ 384,469	\$ 169,678	\$ —	\$ 554,147
Intersegment sales	18,281	15,096	—	33,377
Gross profit	91,213	42,219	204	133,636
Gross profit percent	23.7 %	24.9 %	— %	24.1 %
Segment profit (loss)	\$ 31,435	\$ 14,504	\$ (16,528)	\$ 29,411

Three Months Ended June 30, 2019

<i>(in thousands)</i>	Infrastructure Solutions	Materials Solutions	Corporate	Total
Net sales to external customers	\$ 197,965	\$ 106,837	\$ —	\$ 304,802
Intersegment sales	6,944	5,782	—	12,726
Gross profit	57,743	25,493	81	83,317
Gross profit percent	29.2 %	23.9 %	— %	27.3 %
Segment profit (loss)	\$ 26,926	\$ 8,489	\$ (12,563)	\$ 22,852

Six Months Ended June 30, 2019

<i>(in thousands)</i>	Infrastructure Solutions	Materials Solutions	Corporate	Total
Net sales to external customers	\$ 417,214	\$ 213,368	\$ —	\$ 630,582
Intersegment sales	16,036	10,539	—	26,575
Gross profit	109,053	51,038	76	160,167
Gross profit percent	26.1 %	23.9 %	— %	25.4 %
Segment profit (loss)	\$ 44,996	\$ 17,166	\$ (25,471)	\$ 36,691

A reconciliation of total segment profit to the Company's consolidated totals is as follows:

<i>(in thousands)</i>	Three Months Ended June 30,		Six Months Ended June 30,	
	2020	2019	2020	2019
Total profit shown above	\$ 9,079	\$ 22,852	\$ 29,411	\$ 36,691
Recapture of intersegment profit	226	509	377	888
Net income	9,305	23,361	29,788	37,579
Net (income) loss attributable to non-controlling interest in subsidiaries	(47)	16	114	72
Net income attributable to controlling interest	<u>\$ 9,258</u>	<u>\$ 23,377</u>	<u>\$ 29,902</u>	<u>\$ 37,651</u>

Note 15. Contingent Matters

Certain customers have financed purchases of Company products through arrangements in which the Company is contingently liable for customer debt of \$1.7 million and \$1.5 million at June 30, 2020 and December 31, 2019, respectively. These arrangements expire at various dates through March 2024 and provide that the Company will receive the lender's full security interest in the equipment financed if the Company is required to fulfill its contingent liability under these arrangements. Additionally, the Company is also potentially liable for 1.75% of the unpaid balance, determined as of December 31 of the prior year, on certain past customer equipment purchases that were financed by an outside finance company (the maximum exposure for the Company in 2020 is \$0.6 million). The Company has recorded a liability of \$2.1 million related to these guarantees as of June 30, 2020.

The Company reviews off balance sheet guarantees individually, and at the loss pool level based on one agreement. Prior history is considered in regard to the Company having to perform on any off balance sheet guarantees, as well as future projections of individual customer credit worthiness. During the three and six months ended June 30, 2020, the Company considered the implications of COVID-19 in regard to assessing credit losses related to off balance sheet guarantees.

In addition, the Company is contingently liable under letters of credit issued by a domestic lender totaling \$8.8 million as of June 30, 2020, including \$3.2 million of letters of credit guaranteeing certain Astec Brazil bank debt. The outstanding letters of credit expire at various dates through June 2023. As of June 30, 2020, the Company's foreign subsidiaries are contingently liable for a total of \$2.7 million in performance letters of credit, advance payments and retention guarantees. The maximum potential amount of future payments under these letters of credit and guarantees for which the Company could be liable is \$11.5 million as of June 30, 2020.

The Company and certain of its current and former executive officers have been named as defendants in a putative shareholder class action lawsuit filed on February 1, 2019, as amended on August 26, 2019, in the United States District Court for the Eastern District of Tennessee. The action is styled City of Taylor General Employees Retirement System v. Astec Industries, Inc., et al., Case No. 1:19-cv-00024-PLR-CHS. The complaint generally alleges that the defendants violated the Securities Exchange Act of 1934, as amended (the “Exchange Act”), and Rule 10b-5 promulgated thereunder by making allegedly false and misleading statements and that the individual defendants are control person under Section 20(a) of the Exchange Act. The complaint was filed on behalf of shareholders who purchased shares of the Company’s stock between July 26, 2016 and October 22, 2018 and seeks monetary damages on behalf of the purported class. The Company disputes these allegations and intends to defend this lawsuit vigorously and has filed a motion to dismiss the lawsuit on October 25, 2019. The Company has accrued a \$0.6 million liability as of June 30, 2020.

The Company's GEFCO subsidiary has been named a defendant in a lawsuit originally filed on August 16, 2018 with an amended complaint filed on January 25, 2019, in the United States District Court for the Western District of Oklahoma. The action is styled VenVer S.A. and Americas Coil Tubing LLP v. GEFCO, Inc., Case No. CIV-18-790-SLP. The complaint alleges breaches of warranty and other similar claims regarding equipment sold by GEFCO in 2013. In addition to seeking a rejection (rescission) of the purchase contract, the plaintiff is seeking special and consequential damages. The purchase contract contains an exclusion of consequential damages. The original purchase price of the equipment was approximately \$8.5 million. GEFCO disputes the plaintiff’s allegations and intends to defend this lawsuit vigorously. The Company is unable to determine whether or not a future loss will be incurred due to this litigation or estimate a range of loss, if any, at this time.

The Company is currently a party to various claims and legal proceedings that have arisen in the ordinary course of business. If management believes that a loss arising from such claims and legal proceedings is probable and can reasonably be estimated, the Company records the amount of the loss (excluding estimated legal fees) or the minimum estimated liability when the loss is estimated using a range and no point within the range is more probable than another. As management becomes aware of additional information concerning such contingencies, any potential liability related to these matters is assessed and the estimates are revised, if necessary. If management believes that a loss arising from such claims and legal proceedings is either (i) probable but cannot be reasonably estimated or (ii) reasonably possible but not probable, the Company does not record the amount of the loss, but does make specific disclosure of such matter. Based upon currently available information and with the advice of counsel, management believes that the ultimate outcome of its current claims and legal proceedings, individually and in the aggregate, will not have a material adverse effect on the Company's financial position, cash flows or results of operations. However, claims and legal proceedings are subject to inherent uncertainties and rulings unfavorable to the Company could occur. If an unfavorable ruling were to occur, there exists the possibility of a material adverse effect on the Company's financial position, cash flows or results of operations.

Note 16. Share-Based Compensation

Under the Company’s long-term incentive plans, key members of management may be issued restricted stock units (“RSUs”) each year based upon the financial performance of the Company and its subsidiaries. The number of RSUs granted to employees each year is determined based upon the performance of individual subsidiaries and consolidated financial performance. Generally, for RSUs granted through 2016, each award will vest at the end of five years from the date of grant, or at the time a recipient retires after reaching age 65, if earlier. Awards granted in 2017 and 2018 will vest at the end of three years from the date of grant or at the time a recipient retires after reaching age 65, if earlier. Awards granted in 2019 and thereafter will vest ratably, at the end of each year from the date of grant, over a three-year period. Awards granted through February 2020 were granted based upon past performance and were typically granted each year, shortly after the end of the year. Beginning in March 2020, the incentive plan was modified to award a combination of RSUs and Performance Stock Units (“PSUs”) which are granted in March each year based upon performance targets for the next three years, as approved by the Company’s board of directors. 50% percent of the awards granted are time based vesting RSUs and the other 50% percent are performance based awards granted at the plan’s targeted performance. The actual number of PSUs ultimately vesting can vary from zero to 200% of target, based upon the Company performance. Additional RSUs are granted to the Company’s outside directors under the Company’s Non-Employee Directors Compensation Plan with a one-year vesting period.

During the six months ended June 30, 2020 and 2019, the grant date fair value of the RSUs granted based upon past performance was \$3.2 million and \$2.1 million, respectively. During the six months ended June 30, 2020, the grant date fair value of the RSUs granted based upon targeted future performance and granted to our non-employee directors was \$6.1 million and \$1.0 million, respectively.

The total stock-based compensation expense was \$1.6 million and \$2.5 million for the three and six months periods ended June 30, 2020, respectively, and \$0.5 million and \$1.4 million for the three and six month periods ended June 30, 2019, respectively.

The following table presents the stock plan activity for the six months ended June 30, 2020 for RSUs:

	2020	
	Units	Weighted Average Grant Date Fair Value
Outstanding January 1,	187,646	\$ 45.78
Granted	298,725	34.51
Vested	(73,228)	49.97
Forfeited	(8,316)	43.84
Outstanding, June 30,	<u>404,827</u>	<u>\$ 36.75</u>

Note 17. Other Income, Net of Expenses

Other income, net of expenses for the three and six-month periods ended June 30, 2020 and 2019 are presented below:

<i>(in thousands)</i>	Three Months Ended June 30,		Six Months Ended June 30,	
	2020	2019	2020	2019
Interest income	\$ 198	\$ 295	\$ 418	\$ 569
Gain on investments	172	49	107	198
Other	64	28	143	72
Total	<u>\$ 434</u>	<u>\$ 372</u>	<u>\$ 668</u>	<u>\$ 839</u>

Note 18. Derivative Financial Instruments

The Company is exposed to certain risks related to its ongoing business operations. The primary risk managed by using derivative instruments is foreign currency risk. From time to time, the Company's foreign subsidiaries enter into foreign currency exchange contracts to mitigate exposure to fluctuations in currency exchange rates. The fair value of the derivative financial instruments is recorded on the Company's unaudited condensed consolidated balance sheets and is adjusted to fair value at each measurement date. The changes in fair value are recognized in the accompanying unaudited condensed consolidated statements of income in the current period. The Company does not engage in speculative transactions nor does it hold or issue financial instruments for trading purposes. The average U.S. dollar equivalent notional amount of outstanding foreign currency exchange contracts was \$8.7 million during the six-month period ended June 30, 2020. The Company reported \$0.4 million of derivative liabilities in other current liabilities at June 30, 2020. At December 31, 2019, the Company reported \$4 thousand of derivative assets in other current assets and \$49 thousand of derivative liabilities in other current liabilities. The Company recognized, as a component of cost of sales, a net loss of \$837 thousand and a net gain of \$62 thousand on the changes in fair value of derivative financial instruments in the three-month periods ended June 30, 2020 and 2019, respectively. The Company recognized, as a component of cost of sales, net gain of \$1.0 million and net loss of \$14 thousand on the changes in fair value of derivative financial instruments in the six-month periods ended June 30, 2020 and 2019, respectively. There were no derivatives that were designated as hedges at June 30, 2020.

Note 19. Restructuring and Asset Impairment Charges

Restructuring and asset impairment charges for the three and six-month periods ended June 30, 2020 are presented below (*in thousands*):

	Three Months Ended June 30, 2020	Six Months Ended June 30, 2020
Impairment of a Company plane and costs associated with repairs	\$ 2,612	\$ 2,612
Goodwill impairment related to mobile asphalt equipment operations	—	1,646
Closing operations at the Mequon site and moving operations - principally severance	1,389	1,389
Severance pay associated with workforce reductions at multiple sites	742	1,464
Closing operations at the Albuquerque site and moving operations	750	1,093
Final stages of closing AMM operations in Germany	285	285
Abandoned projects and other restructuring charges	216	216
Restructuring and asset impairment charges	<u>\$ 5,994</u>	<u>\$ 8,705</u>

Restructuring and asset impairment charges for the three and six months ended June 30, 2019 were \$44 thousand and \$556 thousand, respectively.

Restructuring charges accrued, but not paid, were \$2.2 million as of June 30, 2020. Restructuring costs accrued, but not paid as of December 31, 2019 were not significant.

Note 20. Subsequent Event

Con-e-Co Acquisition — The Company entered into a Stock Purchase Agreement, dated as of July 20, 2020, by and between Oshkosh Corporation — (“Oshkosh”) for the purchase of the Con-e-Co concrete equipment company in Nebraska for the purchase price of \$13.7 million after adjustments and was paid in cash. The purchase was consummated on July 20, 2020. The Company has not yet completed their business combination purchase price analysis. The Company expects goodwill, if any, to be nondeductible for income tax purposes. The results of operations will be included from the date of acquisition.

BMH Systems Acquisition — The Company entered into a Share Purchase Agreement, dated as of August 3, 2020, by and between BMH Systems — for the purchase of the concrete equipment company in Montreal, Canada. The purchase was \$15.7 million after adjustments and was paid in cash. The purchase was consummated on August 3, 2020. The Company has not yet completed their business combination purchase price analysis. The Company expects goodwill, if any, to be nondeductible for income tax purposes. The results of operations will be included from the date of acquisition.

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

Forward-Looking Statements

This Quarterly Report on Form 10-Q contains forward-looking statements made pursuant to the safe harbor provisions of the Private Securities Litigation Reform Act of 1995. Statements contained anywhere in this Quarterly Report on Form 10-Q that are not limited to historical information are considered 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 and are sometimes identified by the words “will,” “would,” “should,” “could,” “may,” “believes,” “anticipates,” “intends,” “forecasts” and “expects” and similar expressions. Such forward-looking statements include, without limitation, statements regarding the Company’s expected sales and results of operations during 2020, the Company’s expected capital expenditures in 2020, the ability of the Company to meet its working capital and capital expenditure requirements through August 2021, the amount and impact of any current or future state or federal funding for transportation construction programs, the need for road improvements, the amount and impact of other public sector spending and funding mechanisms, changes in the economic environment as it affects the Company, the Company being called upon to fulfill certain contingencies, the granting of restricted stock units and other incentive awards, changes in interest rates and the impact of such changes on the financial results of the Company, changes in the prices of steel and oil and the impact of such changes generally and on the demand for the Company’s products, customer’s buying decisions, the Company’s business, the ability of the Company to offset future changes in prices in raw materials, the change in the strength of the dollar and the level of the Company’s presence and sales in international markets, the impact that further development of domestic oil and natural gas production capabilities would have on the domestic economy and the Company’s business, the percentage of the Company’s equipment sold directly to end users, the impact of IRS tax regulations, payment of dividends by the Company, the impact of the Company’s efforts to impact its gross margins and inventory levels, the restructuring/relocation of Albuquerque’s operations and the ultimate sale of the Albuquerque facilities, the exiting of Enid’s oil and gas business, the disposal of the related oil and gas inventory, the marketing for sale of Enid’s production facilities and remaining water well line of business, the closure of the Mequon location and associated efficiencies, the possibility of future goodwill impairment charges, the ultimate outcome of the Company’s current claims and legal proceedings and the continued impact of the novel coronavirus (“COVID-19”) pandemic on the Company’s business and global demand for the Company’s products.

These forward-looking statements are based largely on management’s expectations, which are subject to a number of known and unknown risks, uncertainties and other factors discussed in this report and in other documents filed by the Company with the Securities and Exchange Commission, which may cause actual results, financial or otherwise, to be materially different from those anticipated, expressed or implied by the forward-looking statements. All forward-looking statements included in this document are based on information available to the Company on the date hereof, and the Company assumes no obligation to update any such forward-looking statements to reflect future events or circumstances.

The risks and uncertainties identified herein under the caption “Item 1A. Risk Factors” in Part II of this Report, elsewhere herein and in other documents filed by the Company with the Securities and Exchange Commission, including the Company’s Annual Report on Form 10-K for the year ended December 31, 2019 and the Quarterly Report on Form 10-Q for the quarter ended March 31, 2020, should be carefully considered when evaluating the Company’s business and future prospects.

Overview

The Company is a leading manufacturer and seller of equipment for the road building, aggregate processing, geothermal, water, oil and gas, and wood processing industries. The Company’s businesses:

- design, engineer, manufacture and market equipment used in each phase of road building, including mining, quarrying and crushing the aggregate, mobile bulk and material handling solutions, producing asphalt or concrete, recycling old asphalt or concrete and applying the asphalt;
- design, engineer, manufacture and market additional equipment and components, including equipment for geothermal drilling, industrial heat transfer, wood chipping and grinding, commercial and industrial burners, combustion control systems; and
- manufacture and sell replacement parts for equipment in each of its product lines.

The Company, as we refer to it herein, consists of a total of 25 companies that are consolidated in our consolidated financial statements. The companies include manufacturing companies, companies that operate as dealers for the manufacturing companies, a captive insurance company and the parent company. During the first quarter of 2020, the Company completed an internal reorganization of its reportable segments from three to two reportable segments (plus Corporate) and such segments are organized, operated and managed based on the products and services offered by the business units included in each segment.

Amounts previously reported under the previous segment structure have been restated to conform to the new segment structure. Additionally, in both internal and external communications, the Company is transitioning references to each individual business unit by a name associated with its location, as compared to previous references to the subsidiary company names. A brief description of each segment is as follows:

Infrastructure Solutions - The Infrastructure Solutions segment, also referred to herein as the Infrastructure Solutions Group, is comprised of 13 business units. These business units include Astec, Inc. (“CHA-Jerome Ave”), Roadtec, Inc. (“CHA-Manufacturers Rd”), Carlson Paving Products, Inc. (“Tacoma”), Heatec, Inc. (“CHA-Wilson Rd”), CEI Enterprises, Inc. (“Albuquerque”), GEFCO, Inc. (“Enid”), Peterson Pacific Corp. (“EUG-Airport Rd”), Power Flame Incorporated (“Parsons”), RexCon, Inc. (“Burlington”), Astec Mobile Machinery GmbH (“AMM”), Astec Australia Pty Ltd (“Australia”), Astec LatAm (“LatAm”), and Astec Thailand (“Thailand”). Products designed, engineered, manufactured and marketed by this group include a complete line of asphalt plants and their related components, asphalt pavers, screeds, milling machines, material transfer vehicles, stabilizers and related ancillary equipment, concrete plants, water well drilling rigs, wood chippers, wood grinders, heaters, commercial burners and industrial burners. The principal purchasers of the segment’s products are asphalt producers, highway and heavy equipment contractors, foreign and domestic governmental agencies, processors of oil, gas and biomass for energy production, ready mix concrete producers and contractors in the construction and demolition recycling markets.

In 2018, the Company decided to close and cease operations at AMM, located in Germany, and its land and buildings were sold in January 2020. In late 2019, the Company announced the closing of its Albuquerque site due to market conditions and underutilization of the manufacturing facility. Responsibilities for manufacturing and marketing of Albuquerque product lines were transferred to other Company facilities within the Infrastructure Solutions segment in late 2019 and early 2020. The Albuquerque site was closed as of March 31, 2020 and its land and buildings are currently accounted for as held for sale. In late 2019, the Company impaired and discontinued Enid’s oil and gas product lines and is in the process of disposing of the related oil and gas inventory. The Company is also currently marketing its Enid production facilities and remaining water well line of business for sale.

Materials Solutions – The Materials Solutions segment, also referred to herein as the Materials Solutions Group is comprised of 10 business units which are focused on designing and manufacturing heavy processing equipment, as well as servicing and supplying parts for the aggregate, metallic mining, recycling, ports and bulk handling markets. These business units are Telsmith, Inc. (“Mequon”), Kolberg-Pioneer, Inc. (“Yankton”), Astec Mobile Screens, Inc. (“Sterling”), Johnson Crushers International, Inc. (“EUG-Franklin Blvd”), Breaker Technology Ltd/Breaker Technology, Inc. (“Thornbury”), Osborn Engineered Products, SA (Pty) Ltd (“Johannesburg”), Astec do Brasil Fabricacao de Equipamentos Ltda. (“Belo Horizonte”), Telestack Limited (“Omagh”), Astec India (“India”) and Astec AME (“AME”). The principal purchasers of products produced by this group are distributors, open mine operators, quarry operators, port and inland terminal operators, highway and heavy equipment contractors and foreign and domestic governmental agencies. The Company is currently in the process of closing its Mequon site and relocating those operations to other business units.

Corporate - This category consists of business units that do not meet the requirements for separate disclosure as an operating segment or inclusion in one of the other reporting segments and includes the Company’s parent company and Astec Insurance Company (“Astec Insurance”), a captive insurance company. Certain start-up costs related to foreign sales offices are also included in Corporate’s operating results. The Company evaluates performance and allocates resources to its operating segments based on profit or loss from operations before U.S. federal income taxes, state deferred taxes and corporate overhead and, thus, these costs are included in the Corporate category.

The Company’s financial performance is affected by a number of factors, including the cyclical nature and varying conditions of the markets it serves. Demand in these markets fluctuates in response to overall economic conditions and is particularly sensitive to the amount of public sector spending on infrastructure development, privately funded infrastructure development, changes in the prices of liquid asphalt, oil and natural gas and steel.

Federal funding provides a significant portion of all highway, street, roadway and parking construction in the United States. The Company believes that federal highway funding influences the purchasing decisions of the Company’s customers, who are typically more comfortable making capital equipment purchases with long-term federal legislation in place.

Federal transportation funding operated on short-term appropriations until December 4, 2015 when the Fixing America's Surface Transportation Act ("FAST Act") was signed into law. The \$305 billion FAST Act approved funding for highways of approximately \$205 billion and transit projects of approximately \$48 billion for the five-year period ending September 30, 2020.

The Company believes a multi-year highway program (such as the FAST Act) will have the greatest positive impact on the road construction industry and allows its customers to plan and execute longer-term projects. Given the inherent uncertainty in the political process, the level of governmental funding for federal highway projects will similarly continue to be uncertain. Since elected in late 2016, the current executive branch of the federal government has stressed that one of its priorities is a new infrastructure bill including increased funding for roads, bridges, tunnels, airports, railroads, ports and waterways, pipelines, clean water infrastructure, energy infrastructure and telecommunication needs. Governmental funding that is committed or earmarked for federal highway projects is always subject to repeal or reduction. Although continued funding under the FAST Act or funding of a bill passed by the new administration is expected, it may be at lower levels than originally approved or anticipated. In addition, Congress could pass legislation in future sessions that would allow for diversion of previously appropriated highway funds for other purposes, or it could restrict funding of infrastructure projects unless states comply with certain federal policies. The level of future federal highway construction is uncertain and any future funding may be at levels lower than those currently approved or that have been approved in the past.

The public sector spending described above is needed to fund road, bridge and mass transit improvements. The Company believes that increased funding is unquestionably needed to restore the nation's highways to a quality level required for safety, fuel efficiency and mitigation of congestion. In the Company's opinion, amounts needed for such improvements are significantly greater than amounts approved to date, and funding mechanisms such as the federal usage fee per gallon of gasoline, which is still at the 1993 level of 18.4 cents per gallon, would likely need to be increased along with other measures to generate the funds needed.

In addition to public sector funding, the economies in the markets the Company serves, the price of liquid asphalt, the price of oil and natural gas, and the price of steel may each affect the Company's financial performance. Economic downturns generally result in decreased purchasing by the Company's customers, which, in turn, causes reductions in sales and increased pricing pressure on the Company's products. Rising interest rates also typically negatively impact customers' attitudes toward purchasing equipment. The Federal Reserve has maintained historically low interest rates in response to the economic downturn which began in 2009 with several rate adjustments (both up and down) in recent years. The current Federal Funds Rate is considered in the historically low range and future rate changes may occur.

Significant portions of the Company's revenues from the Infrastructure Solutions Group relate to the sale of equipment involved in the production, handling, recycling or application of asphalt mix. Liquid asphalt is a by-product of oil refining. An increase or decrease in the price of oil impacts the cost of asphalt, which is likely to alter demand for asphalt and, therefore, affects demand for certain Company products. While increasing oil prices may have a negative financial impact on many of the Company's customers, the Company's equipment can use a significant amount of recycled asphalt pavement, thereby partially mitigating the effect of increased oil prices on the final cost of asphalt for the customer. The Company continues to develop products and initiatives to reduce the amount of oil and related products required to produce asphalt. Oil price volatility makes it difficult to predict the costs of oil-based products used in road construction such as liquid asphalt and gasoline. While current oil prices are at recent record lows, oil prices have routinely fluctuated in recent years and are expected to continue to fluctuate in the future. Minor fluctuations in oil prices should not have a significant impact on customers' buying decisions. Other factors such as political uncertainty in oil producing countries, interruptions in oil production due to disasters, whether natural or man-made, or other economic factors could significantly impact oil prices, which could negatively impact demand for the Company's products. The Company believes the continued funding of the FAST Act federal highway bill passed in December 2015, together with the prospect of potential replacement funding, have a greater potential to impact the buying decisions of the Company's customers than does the fluctuation of oil prices in 2020 and 2021.

Contrary to the impact of oil prices on many of the asphalt related Infrastructure Solutions Group products as discussed above, other products manufactured by the Company, which are used in heaters for refineries and oil sands, would benefit from higher oil and natural gas prices, to the extent that such higher prices lead to increased development in the oil and natural gas production industries. The Company believes further development of domestic oil and natural gas production capabilities is needed and would positively impact demand for the Company's oil and gas related products.

Steel is a major component in the Company's equipment. Steel prices declined during the second quarter of 2020 due to the unprecedented fall in demand as a result of the effects of COVID-19. Mills responded by adjusting their production capacity to meet lower demand. Prices remained stable at these lower levels as supply was balanced to demand. Steel outlook is expected to remain stable during the third quarter of 2020 with no change to demand drivers. The Company will continue to utilize forward looking contracts when it deems conditions are appropriate (with no minimum or specified quantity guarantees) to minimize the impact of any price increases. We will continue to monitor trends in steel prices in 2020 and establish future contract pricing accordingly.

In addition to the factors stated above, many of the Company's markets are highly competitive, and its products compete worldwide with a number of other manufacturers and dealers that produce and sell similar products. From 2010 through mid-2012, a weak U.S. dollar, combined with improving economic conditions in certain foreign economies, had a positive impact on the Company's international sales. The continued strengthened U.S. dollar since mid-2012, including significant strengthening in 2020, has negatively impacted pricing in certain foreign markets the Company serves. The Company expects the U.S. dollar to remain strong in the near term relative to most foreign currencies. Domestic interest rates rising in the future or weakening economic conditions abroad could cause the U.S. dollar to further strengthen, which could negatively impact the Company's international sales.

In the United States and internationally, the Company's equipment is marketed directly to customers as well as through dealers. During 2019, approximately 60% of the Company's sales were to the end user. The Company expects this ratio to be between 60% and 70% for 2020.

As mentioned above, the Company has recently transitioned from a decentralized management structure to a matrix organizational management structure with major directives and decisions being made at the segment and/or parent company level. Subsidiary president positions, with responsibility for the performance of all aspects of their local company, have been eliminated. Performance is now evaluated at the consolidated and separate segment levels. Performance of individual subsidiaries/sites is the responsibility of segment senior managers and segment functional team leaders under their direction. Senior finance, insurance, legal, shareholder relations, corporate accounting and other corporate matters are primarily managed at the Corporate level (i.e., Astec Industries, Inc., the parent company). Standard accounting procedures are prescribed and followed in all reporting.

The Company's current profit sharing plans allow corporate officers and other key management participants the opportunity to earn profit sharing incentives based upon the Company's and/or the individual group's working capital turnover, adjusted EBITDA margin and safety. Executive and senior leadership team members, when calculated at targeted performance, are between 15% and 100% of their base salary, depending upon their responsibilities, and the plans allow for awards of up to double the target incentive compensation for executive team members. Other salaried employees have the ability to earn profit sharing incentives of up to 5% of their annual salary and non-union hourly employees can earn between \$0 and \$750 each.

The Company's current long-term incentive plans allow corporate officers and other key management participants to be awarded a 50/50 combination of service awards, Restricted Stock Units ("RSUs"), and performance awards, Performance Stock Units ("PSU"). Service awards are granted at target performance and vest in three equal annual installments beginning on the first anniversary of the grant date, subject to continued employment. Performance awards are granted at target performance, and are earned based upon the achievement of two equally rated performance metrics (return on invested capital ("ROIC") and total shareholder return ("TSR")). Total awards range from 20% to 150% of participants' annual salaries at target and participants may earn up to 200% of their PSU award.

During 2018 through mid-2019, the Company retained the services of a specialized consulting firm to assist with the accumulation of company-wide purchasing data including a system for maintaining the data for management to utilize in negotiations with suppliers or potential suppliers in order to obtain reduced prices on raw materials and equipment components purchased. The Company expects the results of these efforts to positively impact its gross margins for the remainder of 2020 and thereafter.

Results of Operations

Impact of COVID-19

The COVID-19 outbreak has caused significant disruptions to national and global economies. Our U.S. based businesses are designated as “Critical Manufacturing” infrastructure companies by the U.S. Department of Homeland Security and, as such, have remained open. Two of our foreign operations in the Materials Solutions Group, located in Northern Ireland and South Africa, as dictated by their local governments, temporarily ceased manufacturing activities in late March 2020. The South Africa site reopened on May 4, 2020 and the Northern Ireland facility reopened on May 11, 2020. The Company's top priority is to protect its employees and their families, its customers and suppliers and its operations from any adverse impacts by taking precautionary measures as directed by health authorities and local governments. In early March 2020, the Company formed a COVID-19 task force, which continually monitors information from government agencies, our sites, customers, suppliers and other sources. The Company has enacted several policies to combat the spread of the virus and keep our employees and visitors safe, including work at home initiatives, limits on employee travel, visitors policies, cleaning and disinfecting procedures and mandated temperature checks for visitors and employees. We are utilizing technology to hold meetings virtually as business permits. During the second quarter of 2020, the impact on our sales and financial results was largely driven by the international site closures due to COVID-19. No significant additional costs to our business were identified in the second quarter of 2020. Determining the extent of variances and fluctuations from COVID-19 has been difficult because there have been no easily discernible trends or patterns to our business. However, we expect an increase in the impact from COVID-19 to our business in the third quarter and possibly thereafter. While we expect this situation to be temporary, any longer-term impact to our business is currently unknown due to the uncertainty around the outbreak's duration and its broader impact. As part of our strategic planning, management has prepared several fluid business models including specific actions to take in the future, depending on the magnitude of the virus on our business levels. The Company's strong balance sheet, including \$119.8 million of cash on hand, no borrowings under its domestic \$150.0 million bank line of credit, only \$1.5 million of debt outstanding on its foreign banking arrangements and \$25.7 million of cash received (included in cash on hand) from the U.S. tax refund request filed due to changes in net operating loss (“NOL”) carryback rules under the Coronavirus Aid, Relief and Economic Security (“CARES”) Act, will aid the Company in withstanding possible future negative impacts of COVID-19. As discussed elsewhere in this report, as part of the Company's management transition from a decentralized management model to a matrix organizational management structure, the Company has taken numerous steps to increase the efficiency in its operations. While COVID-19 did not have a material impact on the Company's second quarter 2020 operations, management has prepared several scenarios of possible future impacts and related costs and cash savings action steps to take as the circumstances dictate. See the Liquidity and Capital Resources section below for additional information concerning the Company's liquidity.

Restructuring Charges

Restructuring and asset impairment charges for the three and six-month periods ended June 30, 2020 are presented below (*in thousands*):

	Three Months Ended June 30, 2020	Six Months Ended June 30, 2020
Impairment of a Company plane and costs associated with repairs	\$ 2,612	\$ 2,612
Goodwill impairment related to mobile asphalt equipment operations	—	1,646
Closing operations at the Mequon site and moving operations - principally	1,389	1,389
Severance pay associated with workforce reductions at multiple sites	742	1,464
Closing operations at the Albuquerque site and moving operations	750	1,093
Final stages of closing AMM operations in Germany	285	285
Abandoned projects and other restructuring charges	216	216
Restructuring and asset impairment charges	<u>\$ 5,994</u>	<u>\$ 8,705</u>

Net Sales

Net sales for the second quarter of 2020 were \$265.3 million compared to \$304.8 million for the second quarter of 2019, a decrease of \$39.5 million or 13.0%. Sales are generated primarily from new equipment and parts sales to domestic and international customers. Sales decreased in both the Infrastructure Solutions and Material Solutions Groups. The decrease of sales in the Infrastructure Solutions Group was driven by the non-recurring Georgia Pellet Plant sale in the second quarter of 2019 for \$20.0 million. The decrease of sales in the Material Solutions Group was driven by COVID-19 plant shutdowns, as well as lower sales related to its crushing and screening projects. Domestic sales for the second quarter of 2020 as compared to the second quarter of 2019 declined by 10.0%. International sales in the second quarter of 2020 decreased 25.3% as compared to the second quarter of 2019, driven by COVID-19 related business disruptions, as well as the impact from the strong U.S. dollar causing Company products that are produced in the United States to be more expensive. Sales reported by the Company's foreign subsidiaries in U.S. dollars for the second quarter of 2020 would have been \$4.1 million higher had second quarter 2020 foreign exchange rates been the same as second quarter 2019 rates.

Net sales for the first six months of 2020 were \$554.1 million compared to \$630.6 million for the first six months of 2019, a decrease of \$76.4 million or 12.1%. Sales are generated primarily from new equipment and parts sales to domestic and international customers. Sales decreased in both the Infrastructure Solutions and Material Solutions Groups. The decrease in sales for the Infrastructure Solutions Group was driven by the non-recurring Georgia Pellet Plant sale in the second quarter of 2019 for \$20.0 million, as well as a lower order backlog entering the first quarter of 2020 compared to the first quarter of 2019. The decrease in sales for the Material Solutions Group was driven by COVID-19 plant shutdowns, as well as lower sales related to its crushing and screening projects. Domestic sales for the first six months of 2020 as compared to the first six months of 2019 declined by 10.5%. International sales in the first six months of 2020 decreased 18.8% as compared to the first six months of 2019, driven by COVID-19 related business disruptions, as well as the impact from the strong U.S. dollar causing Company products produced in the United States to be more expensive. Sales reported by the Company's foreign subsidiaries in U.S. dollars for the first six months of 2020 would have been \$6.9 million higher had first six months of 2020 foreign exchange rates been the same as first six months of 2019 rates.

Domestic sales for the second quarter of 2020 were \$221.5 million or 83.5% of consolidated net sales compared to \$246.2 million or 80.8% of consolidated net sales for the second quarter of 2019, a decrease of \$24.7 million or 10.0%. Domestic sales for the second quarter of 2020 as compared to the second quarter of 2019 decreased by \$18.4 million in the Infrastructure Solutions Group and \$6.3 million in the Materials Solutions Group.

Domestic sales for the first six months of 2020 were \$455.4 million or 82.2% of consolidated net sales compared to \$509.0 million or 80.7% of consolidated net sales for the first six months of 2019, a decrease of \$53.6 million or 10.5%. Domestic sales for the first six months of 2020 as compared to the first six months of 2019 decreased by \$32.7 million in the Infrastructure Solutions Group and \$21.0 million in the Materials Solutions Group.

International sales for the second quarter of 2020 were \$43.8 million or 16.5% of consolidated net sales compared to \$58.6 million or 19.2% of consolidated net sales for the second quarter of 2019, a decrease of \$14.8 million or 25.3%. International sales for the second quarter of 2020 as compared to the second quarter of 2019 increased \$2.3 million in the Infrastructure Solutions Group and decreased \$17.1 million in the Materials Solutions Group. Decreases in international sales in Canada, Australia, Africa, Europe, Central America, Asia and the West Indies were partially offset by increases in sales in South America, Japan & Korea and the Middle East.

International sales for the first six months of 2020 were \$98.7 million or 17.8% of consolidated net sales compared to \$121.5 million or 19.3% of consolidated net sales for the first six months of 2019, a decrease of \$22.8 million or 18.8%. International sales for the first six months of 2020 as compared to the first six months of 2019 decreased \$0.1 million in the Infrastructure Solutions Group and \$22.7 million in the Materials Solutions Group. Decreases in international sales in Canada, Australia, Africa, Europe, Central America and Asia were partially offset by increases in sales in South America, China, Japan & Korea, the West Indies and the Middle East.

Parts sales for the second quarter of 2020 were \$66.4 million compared to \$74.1 million for the second quarter of 2019, a decrease of \$7.7 million or 10.4%. Parts sales as a percentage of net sales increased 70 basis points to 25.0% in the second quarter of 2020 compared to 24.3% in the second quarter of 2019. Parts sales decreased \$2.0 million in the Infrastructure Solutions Group and \$5.7 million in the Materials Solutions Group.

Parts sales for the first six months of 2020 were \$155.1 million compared to \$166.7 million for the first six months of 2019, a decrease of \$11.6 million or 6.9%. Parts sales as a percentage of net sales increased 160 basis points to 28.0% in the first six months of 2020 compared to 26.4% in the first six months of 2019. Parts sales decreased \$4.2 million in the Infrastructure Solutions Group and \$7.3 million in the Materials Solutions Group.

Gross Profit

Consolidated gross profit decreased \$23.7 million or 28.4% to \$59.6 million for the second quarter of 2020 compared to \$83.3 million for the second quarter of 2019. Gross profit as a percentage of sales decreased 480 basis points to 22.5% for the second quarter of 2020 compared to 27.3% for the second quarter of 2019 due to the non-recurring Georgia Pellet Plant sale, which resulted in \$20.0 million of gross profit in the second quarter of 2019 as the related inventory values had been written off in 2018.

Consolidated gross profit decreased \$26.5 million or 16.6% to \$133.6 million for the first six months of 2020 compared to \$160.2 million for the first six months of 2019. Gross profit as a percentage of sales decreased 130 basis points to 24.1% for the first six months of 2020 compared to 25.4% for the first six months of 2019 due to the non-recurring Georgia Pellet Plant sale, which resulted in \$20.0 million of gross profit in the second quarter of 2019 as the related inventory values had been written off in 2018. This was offset by improved overhead absorption variances driven by restructuring and right-sizing activities which began in late 2019.

Selling, General, Administrative and Engineering Expenses

Selling, general, administrative and engineering expenses decreased \$10.0 million, or 19.0%, to \$42.8 million or 16.1% of net sales for the second quarter of 2020, compared to \$52.8 million or 17.3% of net sales for the second quarter of 2019 primarily due to reductions in consulting fees, travel and employee expenses.

Selling, general, administrative and engineering expenses decreased \$12.0 million, or 10.8%, to \$98.9 million or 17.9% of net sales for the first six months of 2020, compared to \$111.0 million or 17.6% of net sales for the first six months of 2019 primarily due to reductions in consulting fees, travel and employee expenses.

Interest Expense

Interest expense for the second quarter of 2020 decreased \$0.4 million to \$0.1 million from \$0.5 million for the second quarter of 2019 due primarily to the Company not having any loans outstanding on the Company's domestic line of credit in the second quarter of 2020.

Interest expense for the first six months of 2020 decreased \$0.9 million to \$0.2 million from \$1.1 million for the first six months of 2019 due primarily to the Company not having any loans outstanding on the Company's domestic line of credit in the second quarter of 2020.

Other Income, Net of Expenses

Other income, net of expenses was \$0.4 million for the second quarter of 2020 compared to \$0.4 million for the second quarter of 2019.

Other income, net of expenses was \$0.7 million for the first six months of 2020 compared to \$0.8 million for the first six months of 2019, a decrease of \$0.1 million due primarily to reduced investment earnings.

Income Tax Expense

The Company's income tax expense for the second quarter of 2020 was \$1.9 million compared to income tax expense of \$7.0 million for the second quarter of 2019. The Company's combined effective income tax rate was 16.7% for the second quarter of 2020 compared to 23.1% for the second quarter of 2019. The tax rate for 2020 was lower compared to 2019 due to an increased research and development credit benefit for 2020 in combination with a lower comparative pre-tax book income to 2019, which included the \$20.0 million sale of the Georgia Pellet Plant in the second quarter of 2019.

The Company's income tax benefit for the first six months of 2020 was \$3.3 million compared to income tax expense of \$10.8 million for the first six months of 2019. The Company's combined effective income tax rate was (12.4)% for the first six months of 2020 compared to 22.3% for the first six months of 2019. The tax provision for the six months ended June 30, 2020 includes a \$9.5 million tax benefit resulting from provisions of the CARES Act enacted on March 27, 2020. Among other provisions, the CARES Act modified the NOL carryback provisions, which allowed the Company to carryback its 2018 NOL to prior tax years. This change not only favorably impacted the timing of the NOL benefit, but also increased the tax benefit amount as the federal tax rates in the prior years (35%) were higher than the current federal tax rate (21%).

Net Income

The Company’s net income attributable to controlling interest was \$9.3 million for the second quarter of 2020 compared to \$23.4 million for the second quarter of 2019, an decrease of \$14.1 million or 60.4%, with the main drivers being the non-recurring Georgia Pellet Plant sale, which resulted in \$20.0 million of gross margin in the second quarter of 2019 and a \$5.9 million increase in restructuring and impairment charges; offset by a decrease in selling, general, administrative and engineering expenses of \$10.0 million. Net income attributable to controlling interest per diluted share was \$0.41 for the second quarter of 2020 compared to \$1.03 for the second quarter of 2019, a decrease of \$0.62. Diluted shares outstanding for the quarters ended June 30, 2020 and 2019 were 22,711,000 and 22,667,000, respectively.

The Company’s net income attributable to controlling interest was \$29.9 million for the first six months of 2020 compared to \$37.7 million for the first six months of 2019, a decrease of \$7.7 million or 20.6%, with the main drivers being the non-recurring Georgia Pellet Plant sale, which resulted in \$20.0 million of gross margin in the second quarter of 2019 and a \$8.1 million increase in restructuring and impairment charges; offset by a decrease in selling, general, administrative and engineering expenses of \$12.0 million and a decrease of \$14.1 million of income tax expense. Net income attributable to controlling interest per diluted share was \$1.32 for the first six months of 2020 compared to \$1.66 for the first six months of 2019, a decrease of \$0.34. Diluted shares outstanding for the six months ended June 30, 2020 and 2019 were 22,714,702 and 22,656,000, respectively.

Dividends

In February 2013, the Company’s Board of Directors approved a dividend policy pursuant to which the Company began paying a quarterly \$0.10 per share dividend on its common stock beginning in the third quarter of 2013. In July 2018, the Company’s Board of Directors approved a revised quarterly dividend of \$0.11 per share, a 10% increase. The actual amount of future quarterly dividends, if any, will be based upon the Company’s financial position, results of operations, cash flows, capital requirements and restrictions under the Company’s existing credit agreement, among other factors. The Board retained the power to modify, suspend or cancel the Company’s dividend policy in any manner and at any time it deems necessary or appropriate in the future. The Company paid quarterly dividends of \$0.11 per common share to shareholders in the first and second quarter of 2020 and 2019.

Backlog

The backlog of orders as of June 30, 2020 was \$182.0 million compared to \$246.1 million as of June 30, 2019, a decrease of \$64.1 million or 26.1%. Both domestic and international backlogs decreased \$33.2 million or 20.6% and \$30.9 million or 36.6%, respectively. The backlog decreased \$48.9 million in the Infrastructure Solutions Group and decreased \$15.2 million in the Materials Solutions Group. Lower orders were driven by COVID-19 uncertainty.

Employees

Due to restructuring plans implemented by the Company in the last quarter of 2019 and the first and second quarters of 2020, including its efforts to increase the efficiencies of its workforce considering current production requirements, the Company reduced its employee headcount 15.6% compared to June 30, 2019 (from 4,183 employees at June 30, 2019 to 3,866 employees at December 31, 2019 to 3,529 at June 30, 2020) and will continue to evaluate future staffing needs as sales and production levels dictate.

Segment Net Sales-Quarter:

<i>(in millions)</i>	Three Months Ended June 30, 2020		\$ Change	% Change
	2020	2019		
Infrastructure Solutions Group	\$ 181.9	\$ 198.0	\$ (16.1)	(8.1)%
Materials Solutions Group	83.4	106.8	(23.4)	(21.9)%

Infrastructure Solutions Group: Sales in this group were \$181.9 million for the second quarter of 2020 compared to \$198.0 million for the same period in 2019, a decrease of \$16.1 million or 8.1%. The group’s backlog at the end of the second quarter of 2020 as compared to the end of the second quarter of 2019 decreased \$48.9 million or 30.9%. Domestic sales for the Infrastructure Solutions Group decreased \$18.4 million or 10.4% for the second quarter of 2020 compared to the same period in 2019. The decrease in sales in the Infrastructure Solutions Group was driven by the non-recurring sale of the Georgia Pellet Plant in the second quarter of 2019 for \$20.0 million. International sales for the Infrastructure Solutions Group increased \$2.3 million or 10.9% for the second quarter of 2020 compared to the same period in 2019 primarily due to higher sales in Brazil. Parts sales for the Infrastructure Solutions Group decreased 4.5% for the second quarter of 2020 compared to the same period in 2019.

Materials Solutions Group: Sales in this group were \$83.4 million for the second quarter of 2020 compared to \$106.8 million for the same period in 2019, a decrease of \$23.4 million or 21.9%. The group's backlog at the end of the second quarter of 2020 as compared to the end of the second quarter of 2019 decreased \$15.2 million or 17.3%. Domestic sales for the Materials Solutions Group decreased by \$6.3 million or 9.1% for the second quarter of 2020 compared to the same period in 2019 due to lower sales of its crushing and screening projects. International sales for the Material Solutions Group decreased \$17.1 million or 45.6% for the second quarter of 2020 compared to the same period in 2019 due to COVID-19 plant related shutdowns, as well as the impact from the strong U.S. dollar causing the Company's products produced in the United States to be more expensive. Parts sales for this group decreased 18.9% for the second quarter of 2020 compared to the same period in 2019.

Segment Net Sales-Six Months:

<i>(in millions)</i>	Six Months Ended June 30, 2020		\$ Change	% Change
	2020	2019		
Infrastructure Solutions Group	\$ 384.5	\$ 417.2	\$ (32.7)	(7.8)%
Materials Solutions Group	169.7	213.4	(43.7)	(20.5)%

Infrastructure Solutions Group: Sales in this group were \$384.5 million for the first six months of 2020 compared to \$417.2 million for the same period in 2019, a decrease of \$32.7 million or 7.8%. Domestic sales for the Infrastructure Solutions Group decreased \$32.7 million or 9.0% for the first six months of 2020 compared to the same period in 2019 due to the non-recurring sale of the Georgia Pellet Plant in the second quarter of 2019 for \$20.0 million, as well as a lower order backlog entering the first quarter of 2020 compared to the first quarter of 2019. International sales for the Infrastructure Solutions Group decreased \$0.1 million or 0.1% for the first six months of 2020 compared to the same period in 2019. Parts sales for the Infrastructure Solutions Group decreased 4.0% for the first six months of 2020 compared to the same period in 2019.

Materials Solutions Group: Sales in this group were \$169.7 million for the first six months of 2020 compared to \$213.4 million for the same period in 2019, a decrease of \$43.7 million or 20.5%. Domestic sales for the Materials Solutions Group decreased by \$21.0 million or 14.5% for the first six months of 2020 compared to the same period in 2019, which was driven by the lower sales of its crushing and screening projects. International sales for the Material Solutions Group decreased \$22.7 million or 33.3% for the first six months of 2020 compared to the same period in 2019 due to COVID-19 plant related shutdowns, as well as the impact from the strong U.S. dollar causing the Company's products produced in the United States to be more expensive. Parts sales for this group decreased 12.3% for the first six months of 2020 compared to the same period in 2019.

Segment Profit (Loss)-Quarter:

<i>(in millions)</i>	Three Months Ended June 30, 2020		\$ Change	% Change
	2020	2019		
Infrastructure Solutions Group	\$ 14.2	\$ 26.9	\$ (12.7)	(47.2)%
Materials Solutions Group	8.5	8.5	—	— %
Corporate	(13.6)	(12.6)	(1.0)	8.3 %

Infrastructure Solutions Group: Segment profit for the Infrastructure Solutions Group was \$14.2 million for the second quarter of 2020 compared to \$26.9 million for the same period in 2019, a decrease of \$12.7 million or 47.2%. The decrease in segment profits resulted from a decrease in gross profit of \$19.5 million due to a 810 basis point decrease in gross margins between periods (21.1% and 29.2% for the second quarter of 2020 and 2019, respectively). The reduction in gross margin percentage is due to the non-recurring sale of the Georgia Pellet Plant in the second quarter of 2019 for \$20.0 million. General and administrative expenses decreased by \$0.8 million and selling expenses decreased by \$4.0 million driven by increasing efficiencies. The increases were offset by increases in restructuring and asset impairment charges of \$1.8 million.

Materials Solutions Group: Segment profit for the Materials Solutions Group was \$8.5 million for the second quarter of 2020 compared to \$8.5 million for the same period in 2019, a decrease of \$20 thousand or 0.2%. The decrease in segment profits between periods resulted from a decrease in gross profit of \$4.3 million due primarily to decreased sales of \$23.4 million between periods. Segment profits were partially offset by a 150 basis point increase in gross margins. Segment profits were positively impacted by decreases in general and administrative expenses of \$0.3 million and selling expenses of \$3.5 million due to increasing efficiencies.

Corporate: Corporate operations had a loss of \$13.6 million for the second quarter of 2020 compared to a loss of \$12.6 million for the second quarter of 2019, an increase of \$1,042 thousand or 8.3%. The increase in expenses were driven by \$2.5 million of asset impairment, \$0.7 million of outside services and \$0.8 million of SERP compensation expense. This was offset by a decrease of \$3.9 million in income tax expense.

Segment Profit (Loss)-Six Months:

<i>(in millions)</i>	Six Months Ended June 30, 2020		\$ Change	% Change
	2020	2019		
Infrastructure Solutions Group	\$ 31.4	\$ 45.0	\$ (13.6)	(30.1)%
Materials Solutions Group	14.5	17.2	(2.7)	(15.5)%
Corporate	(16.5)	(25.5)	9.0	(35.1)%

Infrastructure Solutions Group: Segment profit for the Infrastructure Solutions Group was \$31.4 million for the first six months of 2020 compared to \$45.0 million for the same period in 2019, a decrease of \$13.6 million or 30.1%. Segment profits were unfavorably impacted by a decrease in gross profit of \$17.8 million due to a 240 basis point decrease in gross margins between periods (23.7% and 26.1% for the first six months of 2020 and 2019, respectively). The reduction in gross margin percentage is due to the non-recurring sale of the Georgia Pellet Plant in the second quarter of 2019 for \$20.0 million. Selling expenses decreased by \$2.3 million driven by increasing efficiencies. The decreases in selling expenses were offset by increases in general and administrative expenses of \$0.4 million and increases in restructuring and asset impairment charges of \$4.2 million, including \$1.6 of goodwill impairment related to the Company’s mobile asphalt equipment product lines.

Materials Solutions Group: Segment profit for the Materials Solutions Group was \$14.5 million for the first six months of 2020 compared to \$17.2 million for the same period in 2019, a decrease of \$2.7 million or 15.5%. The decrease in segment profits between periods resulted from a decrease in gross profit of \$8.8 million due primarily to decreased sales of \$43.7 million between periods. Segment profits were positively impacted by an increase of 100 basis points in gross margins between periods. Segment profits were offset by decreases in general and administrative expenses of \$1.4 million and selling expenses of \$3.9 million due to right-sizing activities.

Corporate: Corporate operations had a loss of \$16.5 million for the first six months of 2020 compared to a loss of \$25.5 million for the first six months of 2019, a favorable change of \$9.0 million or 35.1%, due primarily to reductions in income taxes of \$13.1 million. This was offset by \$2.5 million of asset impairment and \$1.5 million of outside services.

Liquidity and Capital Resources

The Company's primary sources of liquidity and capital resources are its (1) cash on hand, (2) borrowing capacity under a \$150.0 million revolving credit facility and (3) cash flows from operations, which may be negatively affected in the future as a result of COVID-19. The Company had \$119.8 million of cash available for operating purposes as of June 30, 2020, of which \$15.2 million was held by the Company's foreign subsidiaries. The Company used \$29.4 million to complete two acquisitions subsequent to June 30, 2020. The transition of U.S. international taxation from a worldwide tax system to a territorial system, as provided under the Tax Act passed in December 2017, greatly reduced any additional taxes on these funds should the Company decide to repatriate these funds to the United States. At June 30, 2020, or at any time during the first six months of 2020, the Company had no borrowings outstanding under its \$150.0 million domestic revolving credit facility. Net of letters of credit totaling \$8.8 million, the Company had borrowing availability of \$141.2 million under the revolving credit facility as of June 30, 2020. The revolving credit facility agreement contains certain financial covenants, including provisions concerning required levels of annual net income and minimum tangible net worth. The Company was in compliance with the financial covenants of the agreement at June 30, 2020.

The Company’s South African subsidiary, Osborn Engineered Products SA (Pty) Ltd (“Osborn”), has a credit facility of \$5.5 million with a South African bank to finance short-term working capital needs, as well as to cover performance letters of credit, advance payment and retention guarantees. As of June 30, 2020, Osborn had no outstanding borrowings but had \$0.9 million in performance, advance payment and retention guarantees outstanding under the facility. The facility has been guaranteed by Astec Industries, Inc., but is otherwise unsecured. A 0.75% unused facility fee is charged if less than 50% of the facility is utilized. As of June 30, 2020, Osborn had available credit under the facility of \$4.6 million. The interest rate is 0.25% less than the South Africa prime rate.

The Company’s Brazilian subsidiary, Astec Brazil, had a \$0.6 million and \$0.9 million working capital loan outstanding as of June 30, 2020 and December 31, 2019, respectively, from a Brazilian bank with an interest rate of 10.4%. The loan’s final monthly payment is due in April 2024 and the debt is secured by Astec Brazil’s manufacturing facility. Astec Brazil’s debt is included in the accompanying unaudited condensed consolidated balance sheets as current maturities of long-term debt (\$0.2 million and \$0.2 million) and long-term debt (\$0.4 million and \$0.7 million) as of June 30, 2020 and December 31, 2019, respectively. Additionally, as of June 30, 2020 and December 31, 2019, respectively, Astec Brazil had \$0.2 million and \$1.1 million outstanding under order anticipation agreements with a local bank with maturity dates through September 2020, which are included as short-term debt in the accompanying unaudited condensed consolidated balance sheets. These loans are drawn under credit facilities with local Brazilian banks secured by letters of credit totaling \$3.2 million issued by Astec Industries, Inc.

The Company’s U.K. subsidiary, Telestack, had a \$0.8 million and \$0.0 million working capital loan outstanding as of June 30, 2020 and December 31, 2019, respectively, from a U.K. bank with an annual interest rate of 2.60% as of June 30, 2020. The \$3.1 million credit facility size against which these drawings are outstanding is scheduled to decrease to \$0.3 million on December 31, 2020 and Telestack is currently working with the bank on an extension. This credit facility is secured by a parent guarantee from Astec Industries, Inc. and certain Telestack assets. Telestack’s cash drawings against this credit facility are included in the accompanying unaudited condensed consolidated balance sheets as short-term debt as of June 30, 2020. Additionally, as of June 30, 2020 and December 31, 2019, respectively, Telestack had \$1.5 million and \$1.2 million outstanding under performance bonds and advance payment guarantees with the same U.K. bank with maturity dates through December 2021, which are contingent liabilities.

The Company’s Australian subsidiary, Astec Australia, has credit facilities of \$2.4 million with an Australian bank to finance short-term working capital needs, as well as to cover performance letters of credit, advance payment and retention guarantees. As of June 30, 2020, Astec Australia had no outstanding cash borrowings but had \$0.3 million in performance, advance payment and retention guarantees outstanding under the facilities which are contingent liabilities. The facilities are secured by certain Astec Australia assets. A 1.35% unused facility fee is charged on unused portions of the \$1.5 million portion which is a short-term working capital facility. As of June 30, 2020, Astec Australia had available credit under the short-term working capital facility of \$1.5 million. The interest rate is the Westpac Business One Loan Rate without a margin.

Cash Flows from Operating Activities:

<i>(in millions)</i>	Six Months Ended June 30,		Increase (Decrease)
	2020	2019	
Net income	\$ 29.8	\$ 37.6	\$ (7.8)
Depreciation and amortization	12.6	13.1	(0.5)
Provision for warranties	5.1	4.5	0.6
Deferred income tax provision	13.4	8.4	5.0
Asset impairment charge	4.1	—	4.1
Distributions to SERP participants	(0.4)	(1.0)	0.6
Changes in working capital:			
Trade and other receivables	5.4	(6.7)	12.1
Inventories	31.4	(5.2)	36.6
Prepaid expenses and other assets	2.7	0.6	2.1
Accounts payable	(7.7)	(2.0)	(5.7)
Customer deposits	(20.1)	(13.0)	(7.1)
Product warranty accruals	(4.5)	(5.3)	0.8
Prepaid, refundable and income taxes payable, net	10.6	7.7	2.9
Other, net	2.4	4.2	(1.8)
Net cash provided by operating activities	<u>\$ 84.8</u>	<u>\$ 42.9</u>	<u>\$ 41.9</u>

Net cash provided by operating activities increased by \$41.9 million for the first six months of 2020 as compared to the first six months of 2019 due primarily to decreases in the growth of receivables of \$12.1 million and inventories of \$36.6 million, partially offset by a decrease in customer deposits of \$7.1 million.

Cash Flows from Investing Activities:

<i>(in millions)</i>	Six Months Ended June 30,		Increase (Decrease)
	2020	2019	
Expenditures for property and equipment	\$ (7.4)	\$ (8.7)	\$ 1.3
Other	1.8	0.6	1.2
Net cash used by investing activities	<u>\$ (5.6)</u>	<u>\$ (8.1)</u>	<u>\$ 2.5</u>

Net cash used by investing activities decreased by \$2.5 million for the first six months of 2020 as compared to the same period in 2019.

Total capital expenditures for 2020 are currently forecasted to be approximately \$20.0 million. The Company expects to finance these expenditures using currently available cash balances, internally generated funds and available credit under the Company's credit facilities. Capital expenditures are generally for machinery, equipment and facilities used by the Company in the production of its various products. The Company believes that its current working capital, cash flows generated from future operations and available capacity under its credit facility will be sufficient to meet the Company's working capital and capital expenditure requirements through August 2021.

Cash Flows from Financing Activities:

<i>(in millions)</i>	Six Months Ended June 30,		Increase (Decrease)
	2020	2019	
Payment of dividends	\$ (5.0)	\$ (5.0)	\$ —
Net change in borrowings from banks	(0.2)	(31.0)	30.8
Other, net	(0.4)	0.1	(0.5)
Net cash used by financing activities	<u>\$ (5.6)</u>	<u>\$ (35.9)</u>	<u>\$ 30.3</u>

Net cash used by financing activities decreased by \$30.3 million for the first six months of 2020 compared to the same period in 2019 due primarily to the Company having no borrowings or repayments under its domestic line of credit during the first six months of 2020.

Financial Condition

The Company's total current assets increased to \$530.4 million as of June 30, 2020 from \$506.3 million as of December 31, 2019, an increase of \$24.1 million or 4.8%, due primarily to an increase in cash and cash equivalents of \$70.9 million offset by a decrease of \$5.4 million in trade receivables and contract assets, net, a decrease of \$31.4 million in inventories and a decrease of \$7.3 million in prepaid and refundable income taxes during the first six months of 2020.

The Company's total current liabilities decreased to \$144.0 million as of June 30, 2020 from \$172.8 million as of December 31, 2019, a decrease of \$28.8 million, or 16.6%, due primarily to reductions in customer deposits of \$20.1 million and accounts payable of \$8.9 million, offset by an increase in other current liabilities of \$2.9 million during the first six months of 2020.

Market Risk and Risk Management Policies

We have no material changes to the disclosure on this matter made in the Company's Annual Report on Form 10-K for the year ended December 31, 2019.

Contingencies

Certain customers have financed purchases of Company products through arrangements in which the Company is contingently liable for customer debt of \$1.7 million at June 30, 2020. These arrangements expire at various dates through March 2024 and provide that the Company will receive the lender's full security interest in the equipment financed if the Company is required to fulfill its contingent liability under these arrangements. Additionally, the Company is also potentially liable for 1.75% of the unpaid balance, determined as of December 31st of the prior year, on certain past customer equipment purchases that were financed by an outside finance company (the maximum exposure for the Company in 2020 is \$0.6 million). The Company has recorded a liability of \$2.1 million related to these guarantees as of June 30, 2020.

In addition, the Company is contingently liable under letters of credit issued by a domestic lender totaling \$8.8 million as of June 30, 2020, including \$3.2 million of letters of credit guaranteeing certain Astec Brazil bank debt. The outstanding letters of credit expire at various dates through June 2023. As of June 30, 2020, the Company's foreign subsidiaries are contingently liable for a total of \$2.7 million in performance letters of credit, advance payments and retention guarantees. The maximum potential amount of future payments under these letters of credit and guarantees for which the Company could be liable is \$11.5 million as of June 30, 2020.

The Company and certain of its current and former executive officers have been named as defendants in a putative shareholder class action lawsuit filed on February 1, 2019, as amended on August 26, 2019, in the United States District Court for the Eastern District of Tennessee. The action is styled City of Taylor General Employees Retirement System v. Astec Industries, Inc., et al., Case No. 1:19-cv-00024-PLR-CHS. The complaint generally alleges that the defendants violated the Securities Exchange Act of 1934, as amended (the "Exchange Act"), and Rule 10b-5 promulgated thereunder by making allegedly false and misleading statements and that the individual defendants are control person under Section 20(a) of the Exchange Act. The complaint was filed on behalf of shareholders who purchased shares of the Company's stock between July 26, 2016 and October 22, 2018 and seeks monetary damages on behalf of the purported class. The Company disputes these allegations and intends to defend this lawsuit vigorously and filed a motion to dismiss the lawsuit on October 25, 2019. The Company has accrued a \$0.6 million liability as of June 30, 2020.

The Company's GEFCO subsidiary has been named a defendant in a lawsuit originally filed on August 16, 2018 with an amended complaint filed on January 25, 2019, in the United States District Court for the Western District of Oklahoma. The action is styled VenVer S.A. and Americas Coil Tubing LLP v. GEFCO, Inc., Case No. CIV-18-790-SLP. The complaint alleges breaches of warranty and other similar claims regarding equipment sold by GEFCO in 2013. In addition to seeking a rejection (rescission) of the purchase contract, the plaintiff is seeking special and consequential damages. The purchase contract contains an exclusion of consequential damages. The original purchase price of the equipment was approximately \$8.5 million. GEFCO disputes the plaintiff's allegations and intends to defend this lawsuit vigorously. The Company is unable to determine whether or not a future loss will be incurred due to this litigation, or estimate a range of loss, if any, at this time.

The Company is currently a party to various claims and legal proceedings that have arisen in the ordinary course of business. If management believes that a loss arising from such claims and legal proceedings is probable and can reasonably be estimated, the Company records the amount of the loss (excluding estimated legal fees) or the minimum estimated liability when the loss is estimated using a range and no point within the range is more probable than another. As management becomes aware of additional information concerning such contingencies, any potential liability related to these matters is assessed and the estimates are revised, if necessary. If management believes that a loss arising from such claims and legal proceedings is either (i) probable but cannot be reasonably estimated or (ii) reasonably possible but not probable, the Company does not record the amount of the loss, but does make specific disclosure of such matter. Based upon currently available information and with the advice of counsel, management believes that the ultimate outcome of its current claims and legal proceedings, individually and in the aggregate, will not have a material adverse effect on the Company's financial position, cash flows or results of operations. However, claims and legal proceedings are subject to inherent uncertainties and rulings unfavorable to the Company could occur. If an unfavorable ruling were to occur, there exists the possibility of a material adverse effect on the Company's financial position, cash flows or results of operations.

Off-balance Sheet Arrangements

As of June 30, 2020, the Company does not have any off-balance sheet arrangements as defined by Item 303(a)(4) of Regulation S-K.

Contractual Obligations

During the six months ended June 30, 2020, there were no material changes in the Company's commitments or contractual liabilities disclosed in the Company's Annual Report on Form 10-K for the year ended December 31, 2019.

Item 3. Quantitative and Qualitative Disclosures About Market Risk

The Company has no material changes to the disclosure on this matter made in Item 7A of the Company's Annual Report on Form 10-K for the year ended December 31, 2019.

Item 4. Controls and Procedures

Disclosure Controls and Procedures

The Company maintains disclosure controls and procedures that are designed to ensure that information required to be disclosed by the Company in the reports it files or submits under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms, and that such information is accumulated and communicated to the Company's management, including its principal executive officer and principal financial officer, as appropriate to allow timely decisions regarding required disclosure.

The Company's management, under the supervision and with the participation of the Company's principal executive officer and principal financial officer, has evaluated the effectiveness of the Company's disclosure controls and procedures as of the end of the period covered by this report. Based upon that evaluation, the Company's principal executive officer and principal financial officer concluded that, as of the end of the period covered by this report, the Company's disclosure controls and procedures (as defined in Rule 13a-15(e) under the Exchange Act) were not effective due to material weaknesses in the Company's internal control over financial reporting that were disclosed in our Annual Report on Form 10-K for the year ended December 31, 2019.

Internal Control over Financial Reporting

Other than the remediation efforts discussed below, there have been no changes in the Company's internal control over financial reporting (as defined in Rule 13a-15(f) under the Exchange Act) that occurred during the six-month period ended June 30, 2020 that have materially affected, or are reasonably likely to materially affect, the Company's internal control over financial reporting.

Remediation

As previously described in Part II, Item 9A of our Annual Report on Form 10-K for the year ended December 31, 2019, we began implementing a remediation plan to address the material weaknesses mentioned above. The weaknesses will not be considered remediated until the applicable controls operate for a sufficient period of time and management has concluded, through testing, that these controls are operating effectively.

PART II - OTHER INFORMATION

Item 1. Legal Proceedings

The Company is involved from time to time in legal actions arising in the ordinary course of its business. Other than as set forth in Note 15, Contingent Matters, to the accompanying unaudited condensed financial statements and Part I, "Item 3. Legal Proceedings" in the Company's Annual Report on Form 10-K for the year ended December 31, 2019, the Company currently has no pending or threatened litigation that the Company believes will result in an outcome that would materially affect the Company's business, financial position, cash flows or results of operations. Nevertheless, there can be no assurance that future litigation to which the Company becomes a party will not have a material adverse effect on its business, financial position, cash flows or results of operations.

Item 1A. Risk Factors

In addition to the other information set forth in this Report, you should carefully consider the factors discussed in Part I, "Item 1A. Risk Factors" in the Company's Annual Report on Form 10-K for the year ended December 31, 2019 and the Quarterly Report on Form 10-Q for the quarter ended March 31, 2020, which could materially affect the Company's business, financial condition or future results. The risks described in the Company's Annual Report on Form 10-K for the year ended December 31, 2019, the Quarterly Report on Form 10-Q for the quarter ended March 31, 2020 and in this Quarterly Report on Form 10-Q are not the only risks facing our Company. Additional risks and uncertainties not currently known to management or that management currently deems to be immaterial also may materially adversely affect the Company's business, financial condition or operating results.

Item 2. Unregistered Sales of Equity Securities and Use of Proceeds

On July 29, 2018, the Company's Board of Directors approved a share repurchase program authorizing the Company to repurchase up to \$150.0 million of its common stock. Through December 31, 2018, the Company had repurchased 582,222 shares of its stock at total cost of \$24.1 million under this program. Under the share repurchase plan, the Company may purchase common stock in open market transactions, block or privately negotiated transactions, and may from time to time purchase shares pursuant to a trading plan in accordance with Rule 10b5-1 and Rule 10b-18 under the Securities Exchange Act of 1934, as amended, or by any combination of such methods. The number of shares to be purchased and the timing of the purchases are based on a variety of factors. No time limit was set for completion of repurchases under the authorization and the program may be suspended or discontinued at any time. No additional shares were repurchased under this plan during 2019 or the first six months of 2020.

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Items 3, 4 and 5 are not applicable and have been omitted.

Item 6. Exhibits

Exhibit No.	Exhibit Description
10.1	Amendment to “Appendix A” of the Astec Industries, Inc. Supplemental Executive Retirement Plan, effective April 30, 2020.
31.1	Certification of the Chief Executive Officer pursuant to Rule 13a-14(a)/15d-14(a) of the Securities Exchange Act of 1934, as amended, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
31.2	Certification of the Chief Financial Officer pursuant to Rule 13a-14(a)/15d-14(a) of the Securities Exchange Act of 1934, as amended, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
32.1*	Certification of Chief Executive Officer and Chief Financial Officer pursuant to Rule 13a-14(b)/15d-14(b) of the Securities Exchange Act of 1934, as amended, and 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
101.INS	XBRL Instance Document
101.SCH	XBRL Taxonomy Extension Schema
101.CAL	XBRL Taxonomy Extension Calculation Linkbase
101.DEF	XBRL Taxonomy Extension Definition Linkbase
101.LAB	XBRL Taxonomy Extension Label Linkbase
101.PRE	XBRL Taxonomy Extension Presentation Linkbase
104	Cover Page Interactive Data File - (formatted as Inline XBRL and contained in Exhibit 101)

The exhibits are numbered in accordance with Item 601 of Regulation S-K. Inapplicable exhibits are not included in the list.

* In accordance with Release No. 34-47551, this exhibit is hereby furnished to the SEC as an accompanying document and is not to be deemed “filed” for purposes of Section 18 of the Securities Exchange Act of 1934, as amended, or otherwise subject to the liabilities of that section, nor shall it be deemed incorporated by reference into any filing under the Securities Act of 1933, as amended.

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.

ASTECH INDUSTRIES, INC.
(Registrant)

Date: August 10, 2020

/s/ Barry A. Ruffalo

Barry A. Ruffalo
Chief Executive Officer and President
(Principal Executive Officer)

Date: August 10, 2020

/s/ Rebecca A. Weyenberg

Rebecca A. Weyenberg
Chief Financial Officer
(Principal Financial and Accounting Officer)

Exhibit 10.1

THIS AMENDMENT to “Appendix A” of the Astec Industries, Inc. Supplemental Executive Retirement Plan, as amended and restated as of January 1, 2008 (the “Plan”), is adopted by Astec Industries, Inc. (the “Company”), effective as of July 30, 2020.

WHEREAS, Article 2 of the Plan permits the Board of Directors of the Company (the “Board”) to designate participants in the Plan from time to time, whose names and effective dates of participation shall be set forth on Exhibit A to the Plan;

NOW, THEREFORE, the Company hereby amends “Appendix A” of the Plan in the form attached hereto, to update the same for changes in Plan participation approved by the Board, by action take on July 30, 2020.

Except as amended herein, the Plan shall continue in full force and effect.

Date: July 30, 2020

By: /s/ Stephen C. Anderson

Name: Stephen C. Anderson

Title: Secretary

“Appendix A”**Each Participant’s Date of Participation**

<u>Name of Participant</u>	<u>Effective Dates of Participation</u>
Tim Gonigam	August 1, 2000
Stephen C. Anderson	January 1, 2003
Joe Cline	February 1, 2008
Chris Colwell	May 31, 2011
Matthew B. Haven	January 1, 2013
Jeff May	October 1, 2013
Tom Wilkey	January 1, 2014
Jeff Schwarz	July 1, 2014
Jaco Van Der Merwe	October 1, 2016
Scott Barker	April 3, 2017
Neil Whitworth	May 30, 2017
Michael G. Anderson	July 7, 2017
Jody Volner	November 1, 2017
Michael Norris	January 1, 2018
Greg Renegar	January 1, 2019
Vince Trotta	April 15, 2019
Barry Ruffalo	August 12, 2019
Matthew Litchfield	October 1, 2019
Greg Oswald	October 29, 2019

<u>Name of Participant</u>	<u>Effective Dates of Participation</u>
Tim Averkamp	November 4, 2019
Rebecca Weyenberg	December 4, 2019
Chris Frost	January 1, 2020
Ron Earl	January 1, 2020
Gerardo Goya	January 27, 2020
Eric Baker	February 1, 2020
Basman Alias	February 1, 2020
Dena Fairley	February 1, 2020
Brian Gray	February 1, 2020
Jeff Rowan	March 3, 2020
Aletheia Silcott	March 17, 2020
David Lieber	March 30, 2020
Reuben Srinivasan	March 30, 2020
Tim Hilvers	March 31, 2020
David Furr	April 20, 2020
William Steiger	April 27, 2020
Rob Lowe	July 27, 2020

**Certification pursuant to Rule 13a-14(a)/15d-14(a),
as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002**

I, Barry A. Ruffalo, certify that:

1. I have reviewed this quarterly report on Form 10-Q of Astec Industries, Inc.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: August 10, 2020

/s/ Barry A. Ruffalo

Barry. A. Ruffalo

Chief Executive Officer and President
(Principal Executive Officer)

**Certification pursuant to Rule 13a-14(a)/15d-14(a),
as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002**

I, Rebecca A. Weyenberg, certify that:

1. I have reviewed this quarterly report on Form 10-Q of Astec Industries, Inc.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: August 10, 2020

/s/ Rebecca A. Weyenberg

Rebecca A. Weyenberg
Chief Financial Officer
(Principal Financial Officer)

**Certification pursuant to Rule 13a-14(b)/15d-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**

In connection with the Quarterly Report of Astec Industries, Inc. (the “Company”) on Form 10-Q for the period ended June 30, 2020 as filed with the Securities and Exchange Commission on the date hereof (the “Report”), the undersigned, Barry A. Ruffalo and Rebecca A. Weyenberg, certify, pursuant to Rule 13a-14(b)/15d-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, that:

- (1) The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and
- (2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

/s/ Barry A. Ruffalo

Barry A. Ruffalo
Chief Executive Officer and President
(Principal Executive Officer)
August 10, 2020

/s/ Rebecca A. Weyenberg

Rebecca A. Weyenberg
Chief Financial Officer
(Principal Financial Officer)
August 10, 2020