ASTEC INDUSTRIES, INC.

SAFETY, QUALITY, PRODUCTIVITY

2017 ANNUAL REPORT

FINANCIAL OVERVIEW

(in thousands, except as noted*)	**2017**	2016	2015	2014	2013
OPERATING RESULTS					
Net sales	**$1,184,739**	$1,147,431	$983,157	$975,595	$932,998
Net income attributable to controlling interest	**37,795**	$55,159	$32,797	$34,458	$39,042
FINANCIAL POSITION					
Total assets	**$889,579**	$843,601	$777,353	$802,265	$749,291
Working capital	**423,823**	407,972	399,785	388,862	385,680
Equity	**686,765**	648,841	609,858	596,152	577,311
PER COMMON SHARE*					
Net income attributable to controlling interest					
Basic	**$1.64**	$2.40	$ 1.43	$1.51	$1.72
Diluted	**1.63**	2.38	1.42	1.49	1.69
Book value per common share at year end	**29.58**	27.99	26.30	25.62	24.85
OTHER DATA					
Weighted average number of common shares outstanding					
Basic	**23,025**	22,992	22,934	22,819	22,749
Diluted	**23,184**	23,142	23,120	23,105	23,081
Associates*	**4,437**	4,218	3,740	3,952	3,708

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OUR INDUSTRY-LEADING FOOTPRINT

The companies of Astec Industries, Inc. manufacture more than 240 products for a global customer base operating in the sectors of infrastructure, aggregates, mining, and energy.

INFRASTRUCTURE GROUP

1 Astec
2 Astec Australia
3 Astec Mobile Machinery
4 Dillman Equipment
5 Carlson Paving Products
6 Roadtec

AGGREGATE & MINING GROUP

7 Astec do Brasil
8 Astec Mobile Screens
9 Breaker Technology
10 Johnson Crushers International
11 Kolberg-Pioneer
12 Osborn Engineered Products
13 Telestack
14 Telsmith

ENERGY GROUP

15 CEI Enterprises
16 GEFCO
17 Heatec
18 Peterson Pacific Corp.
19 Power Flame
20 RexCon

SAFETY, QUALITY, PRODUCTIVITY

> "Safety, Quality, Productivity. These three words are our focus and we are excited to execute on the bottom line in a better way in 2018."
>
> Benjamin G. Brock,
> *President and Chief Executive Officer*

FELLOW SHAREHOLDERS:

The theme of our annual report this year is, "Safety, Quality, Productivity". These three words are very important to all of us. First, we want to improve on our strong safety incident rate, a rate that is half the industry average, and push toward the ultimate goal of zero injuries. Second, we work every day to protect our heritage of providing the best quality products and service available in the industries we serve. Finally, we have the opportunity to improve our in-house productivity, not only in manufacturing, but in all areas of our company. Our efforts in the three focus areas mentioned above will help put us in position to improve on a 2017 that presented transitional challenges along with encouraging developments.

Our two main transitional challenges in 2017 were our release of thirty-three new products at ConExpo in March and getting two large wood pellet production plants up to full operating capacity for our customers. While the ConExpo show was one of our best shows ever, we experienced the normal, lower gross margins associated with the new products as they were sold and built for the first few times in our facilities. Wood pellet plants have great potential for us in the long-run, however the investment to get to success was front and center in 2017 through our announced charges to modify the equipment to reach full production capacities at the plants we have delivered to customers.

Transitional challenges that come with new products are not new to Astec Industries, but the number of new products introduced in 2017 was extraordinary. Entering 2018, we are focused on improving our day-to-day operations as a whole, having returned our research and development to more typical levels.

Someone said to me recently that with the higher volume of research and development and

the pellet plant charges behind us, we are back to being the Astec Industries everyone knew before. To me, that really depends on when someone got to know us. We started in 1972 as a single company focused on providing a single product, hot mix asphalt production plants, to customers in the United States. Today, we are a company made up of 20 subsidiaries focused on providing over 240 products to customers around the world in the infrastructure, aggregate, mining and energy industries.

Another person commented to me that 2017 was a down year for Astec Industries because our net income was not in line with our record revenue. Again, it depends on your perspective. While it was not an excellent or very good year on the bottom line, considering the transitional issues referenced above, it was a good year. Many companies would not have been as successful as we have been given the challenges we faced in 2017. We performed well during the financial crisis years and when things got better we quickly acted to advance plans for the future which in turn brought on the transitional challenges we faced. We are now well positioned for the long-run. I am proud of our team's effort in 2017 bearing in mind the challenges we worked through.

That being said, 2018 for us will be a year of focusing on improving internally. Safety, Quality, Productivity - these three words are our focus and we are excited to execute on the bottom line in a better way in 2018. One of the specific things we have done to improve is hire a new Vice President of Global Operational Excellence. This person has a successful track record of implementing continuous improvement systems and will guide our subsidiaries in this effort.

Order activity is strong and we have a nice backlog as a result of a good economy in many countries around the world. We are also in the middle of a long-term federal highway bill in the United States. Reflected by our best third quarter (excluding pellets) since 2008, our core businesses performed well in 2017, and we have an opportunity to perform even better in 2018.

In addition to the current long-term highway bill that expires in the year 2020, there could be more funding for infrastructure on the way as the federal government in Washington D.C. begins to consider the President's $1.5 trillion infrastructure spending proposal. Time will tell, but we will be ready for the opportunities that come with a potential infrastructure bill.

Our wood pellet plant business is in our Infrastructure Group. We will not take another wood pellet plant order until we have met production requirements at the two plants already delivered. Our plants are well known in the industry now, so we are in position to supply plants for the projected demand increase in the industry. We believe we will earn our next pellet plant order for delivery in 2019 after we meet production levels at the two existing plants.

Our main headwinds from the last few years have been subsiding. The headwinds have been low oil and natural gas prices (stabilized), the global mining slowdown (improving), and a strong United States dollar (weakening). Our energy group is in a better place with the stabilized oil prices, we have

Order activity is strong and we have a nice backlog as a result of a good economy in many countries around the world.

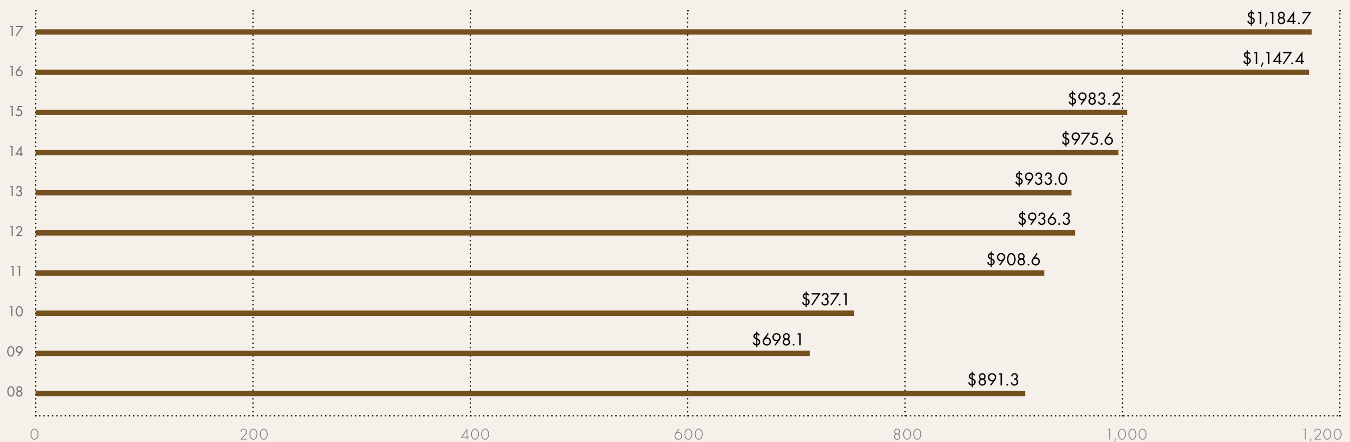
seen an increase in quotations to mining companies and our international sales improved in 2017.

With regards to international sales, we have been purposeful in our efforts over the years to improve and maintain our sales and service around the globe and our export sales were up this year. We are not sitting still on our international gains. We recently hired a new group managing director of international region offices. This person will lead our efforts to be even closer to customers globally through regional offices for sales, service and parts for the majority of our subsidiaries. This will position us in an even better way for the future in international markets.

As a reminder, our corporate management team and subsidiary presidents took time in September 2015 and together developed a five-year strategic plan. We reviewed our progress as a team in August 2017 and came away from that meeting with a renewed focus on our goals to continually improve and grow our company deliberately and strategically through new product releases and market-share gains; while adding new subsidiaries through acquisitions in the industries we serve. The year 2017 presented challenges to our efforts but it did not put our fire out. Our goals remain achievable with focused effort.

We have been fortunate to remain debt-free with cash on hand. Our plan is to use this position for acquiring companies we feel are a fit with our family of companies. We have a goal of making one or two acquisitions during 2018. However, we do not see acquisitions as a must-do item. We will only add to our

> We also plan to use our strong balance sheet and recent United States tax plan changes to invest in operational excellence efforts as we spread best management practices among our subsidiaries.



family if we believe there is a strategic fit with our business.

To that end, we did announce the addition of RexCon to our family of companies during 2017. RexCon is a leader in concrete production equipment with great market shares in every segment they serve. We are pleased to have the RexCon team with us and look forward to participating in their future growth and success.

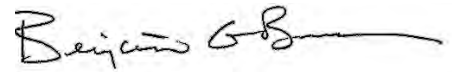
We also plan to use our strong balance sheet and recent United States tax plan changes to invest in operational excellence efforts as we spread best management practices among our subsidiaries. These investments could include, but not be limited to, state-of-the-art equipment in our facilities, software technology upgrades and other opportunities as they arise. As always, any investment will only be made after adequate return on investment analysis has been completed.

In closing, 2017 was a record year for revenues with net income reflective of transitional challenges. At the end of 2017 Rick Dorris, our chief operating officer, and I marked the fourth year of being in our current roles. As we enter our fifth year of service we are optimistic about Astec Industries' position going in to 2018, and we are focused on "safety, quality and productivity". We have a great team of corporate and subsidiary officers, and in my travels to our subsidiaries and customer job sites during the year, it always is clear to me how truly blessed we are with great people at all levels of our company.

We look forward to success in 2018 – and beyond!

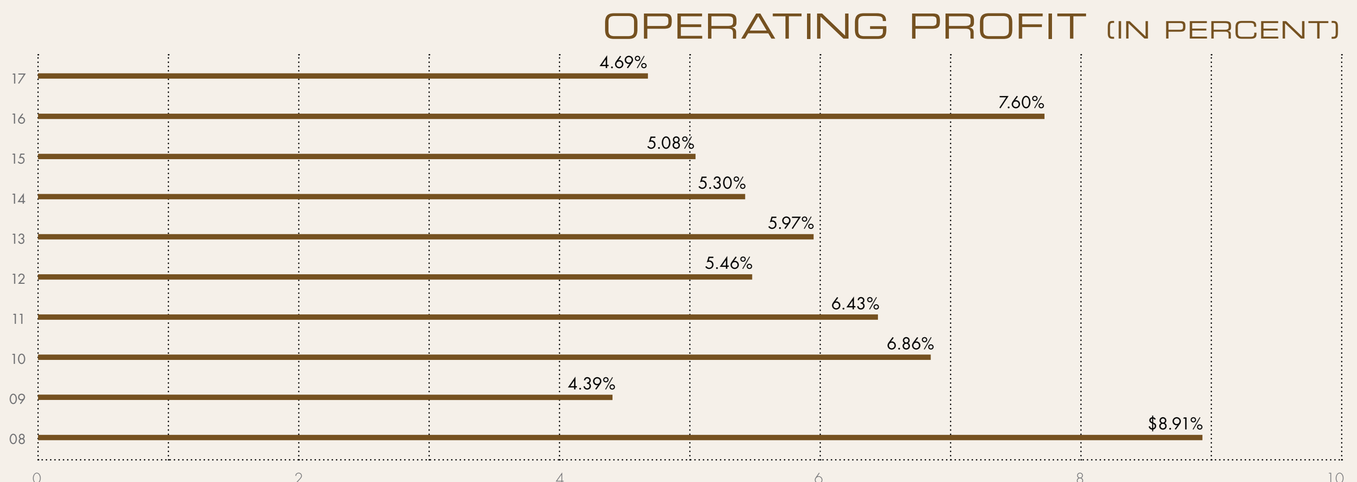
Thank you for taking the time to read this letter and thank you for your support.

Sincerely,



Benjamin G. Brock
President and Chief Executive Officer
Astec Industries, Inc.

OPERATING PROFIT (IN PERCENT)



NEW TECHNOLOGIES

Astec Industries, Inc. is committed to bringing innovative products and solutions to market through nurturing the inventive spirit of our employees and listening to the needs and wants of customers.

CARLSON PAVING PRODUCTS

CP130 Asphalt Paver

Introduced at ConExpo in March, 2017, the CP130 represents a new class of commercial paver. Combining highway-class material throughput, production, and wear components in a compact, transportable platform, the CP130 excels across a wide array of job-sites, including commercial, municipal, and county roadwork. The paver features a 130hp Cummins Tier IV Final engine, class-exclusive armrest operator controls, and Carlson's newest 8'-15' screed in the EZCSS, based on the company's larger highway-class platforms. The CP130 is available in an export-compliant version for overseas markets.

ASTEC, INC.

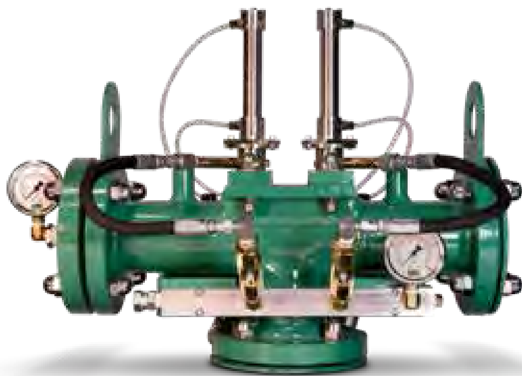
Silobot™ Inspection Device

At ConExpo 2017, Astec introduced the Silobot inspection service for testing silo wall thickness. Astec Silobot inspection service uses an innovative, remotely controlled robot that analyzes, evaluates and inspects asphalt silos for wear.

The chief benefit of the Silobot inspection service is equipment inspection without entering the silo. It allows for safer and more efficient inspection. One would only need to enter the silo to perform any identified maintenance.

ASTEC, INC.

Generation 3 Warm Mix System



Astec continues to evolve the revolutionary warm mix system, first introduced in 2007. The latest generation of the Astec warm mix system debuted at ConExpo 2017. The new design simplifies production of warm mix asphalt, achieving better foaming with less maintenance. The benefits of warm mix asphalt, such as reduced energy consumption, lowered emissions and elimination of visible smoke, are well-known in the asphalt paving industry.

The Astec warm mix system achieves a lower temperature at a lower cost by eliminating the need for additives or special asphalt cement. Instead, the Astec warm mix system injects a small amount of water into the liquid AC to create microscopic steam bubbles. These small bubbles reduce the viscosity of the liquid AC, allowing the mix to be worked at lower temperatures.

JOHNSON CRUSHERS INTERNATIONAL

Kodiak Cone Improvements

JCI has continued to improve the operation and ease of maintenance on the Kodiak Plus line of premier roller-bearing cone crushers. The Kodiak Control System has been fully implemented into all new cone crushers. This new, innovative technology allows producers to monitor crusher performance and routine maintenance on an easy-to-use Human Machine Interface. Updates to the bowl float sensor and the addition of a labyrinth contact seal have continued to improve bearing life and reduce operating costs.

NEW TECHNOLOGIES

Within our culture of innovation, ideas are shared among employees and with customers. Creating these opportunities to share and grow ideas, creates an environment where innovation thrives.

GEFCO

GEFCO DP 3000

The GEFCO DP 3000 is a high-pressure, high-volume, double-fluid pumper for cleaning and stimulating natural gas or petroleum wells. The unit can use water or mud mixes in its treatments.

The double-fluid pumper utilizes two 1,300-hp, quintuplex pumps driven by a pair of Cummins QST30 turbocharged diesel engines producing 1,500 hp each — 3,000 hp total. The Cummins engines drive the pumps through Allison 9000 series transmissions coupled to Namco NM-203 Series 2-speed gearboxes.

The pumps can operate in tandem or independently to ensure the ability to pump in the event of component failure or while conducting routine maintenance. The unit is capable of a maximum discharge pressure of 15,000 psi.

ASTEC MOBILE SCREENS

Electric ProSizer 3600

Astec Mobile Screens has expanded its ProSizer line to include an electric version of the ProSizer 3600. The launch of the electric version of the unit will give producers the flexibility to better control their operating costs and can allow for smoother operation in dirty environments, such as recycled asphalt pavement processing. The ProSizer 3600 is a single-load crushing plant for processing virgin aggregate and recycled materials.

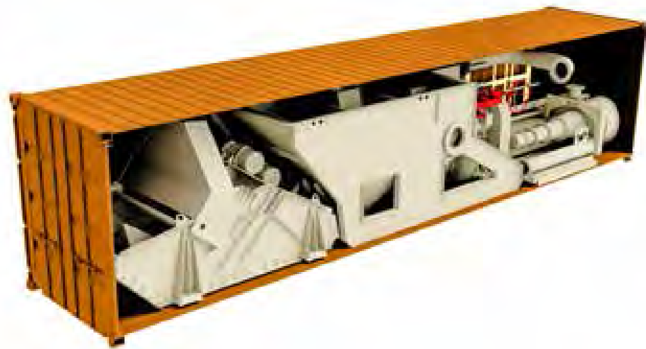
KOLBERG-PIONEER

Drop-In Carbides

Drop-In carbides are now available for all models of vertical shaft impactors (VSI) from KPI. The new industry-standard drop-in carbide wear parts will significantly decrease downtime required for service and maintenance. The new carbides cut replacement time to as little as 20% of other solutions. The drop-in carbides can be retrofitted into existing VSI crushers from KPI.

KOLBERG-PIONEER

Containerized Units



KPI has continued to expand its capabilities to offer world-class equipment in convenient containerized configurations. The SuperStacker® telescoping stacker is now offered as a containerized unit for its 150-foot, 36-inch belt model. Fines recovery plants are also available for containerization. They are the ideal solution for KPI to more efficiently deliver equipment to producers.

NEW TECHNOLOGIES

Ultimately, our goal is to supply our customers with state-of-the-art equipment that enables them to operate profitably.

ROADTEC

MTV-1105

In 2017, Roadtec designed the rubber-tracked Material Transfer Vehicle, the MTV-1105. As an example of Roadtec's customer-focused innovations, the MTV-1105 was born out of customer feedback. By offering the MTV-1100 and the MTV-1105, Roadtec gives customers the choice of tracks or tires on their MTV.

With the addition of the MTV-1105, operators and crews have options for any application. Jobs that require extra traction and flotation, such as steep grades and sandy environments, are ideal for the MTV-1105. Like the MTV-1100, the MTV-1105 includes the option for Guardian® telematics.

PETERSON

2700D Horizontal Grinder

Peterson's all-new 2700D is the smallest, and lightest horizontal grinder in our product line. With up to 765hp, the 2700D packs impressive performance in a small package.

REXCON

Lightning Batching System

RexCon introduced the new Lightning batching system. This new control builds on the already very successful RexCon Control and Communication Center (RC3). The Lightning system, which is a new state-of-the art Programmble Logic Controller (PLC), utilizes a high-speed Ethernet communication port for an extremely fast batching control. The new PLC can be updated with a USB flash drive that can also be used to back up the system.

The PLC CPU, power supply, I/O relays and associated I/O modules are all mounted in a DIN rail, allowing additional modules to be added at the customer site and replaced quickly. The parts are available around the world, so replacement parts can be obtained quickly.

Although the batching system is much faster, the control interface is exactly the same as the RC3 control users have come to know. No specialized operator training is required to run the new system if they have used the RC3 in the past.

REXCON

Mag Meter

RexCon released their very own water meter – the RexCon Mag Meter. All meters are calibrated at the factory. With the parameters stored in the meter, on-site calibration is completely eliminated.

The meter features static ring technology and an ebonite lined body which eliminates false or ghost signals. The meter also has a removable head to ensure the safety of the meter during transport. The circuitry of the meter is separated from the meter body. This isolation reduces the chances of condensation on important electrical components.

INDUSTRIES SERVED:

PRODUCTS AND SERVICES:

- Portable Asphalt Plants
- Relocatable Asphalt Plants
- Stationary Asphalt Plants
- Soil Remediation Equipment
- Wood Pellet Processing Plants
- Control Systems

REPORTING GROUP: INFRASTRUCTURE

LOCATION:

CHATTANOOGA, TENNESSEE, USA
PRAIRIE DU CHIEN, WISCONSIN, USA

ASTEC AND DILLMAN EQUIPMENT

Astec offers a complete line of portable, relocatable, and stationary asphalt plant equipment produced under the Astec and the Dillman brands. In addition, Astec also manufactures soil remediation equipment and wood pellet processing plants. In 2017, Astec enhanced its position as a global leader in design, innovation, manufacturing and service.

In 2017, sales for asphalt plants and related equipment were brisk with Astec seeing one of its strongest years for asphalt equipment sales. Astec continued to see industry acceptance of the Double Barrel® XHR drum dryer with an external mixer as a premium solution for utilizing a high percentage of RAP. This innovative drum design allows production of mix with up to 70% RAP content, producing high-quality mix across the RAP percentage range.

In March of 2017, participation at ConExpo produced interest in several improved products, including the debut of a new design for the Astec warm mix system. The new design is now operating in the field and is being well received. Also at ConExpo, Astec unveiled a new Silobot inspection service.

Astec initiated design upgrades to its customers' Georgia and Arkansas wood pellet plants. The upgrades were driven by the need for both facilities to achieve full production rates. Astec remains very confident in the near-term and long-term outlook for the wood pellet business and believes it has been a good investment for the company.

Astec is optimistic about future prospects and plans to continue to position itself to take full advantage of opportunities both domestically and abroad. Astec continues to grow and maintain customer loyalty through innovative equipment designs, industry-leading customer service and state-of-the-art technical education.

PLANT PROCESS CONTROL SYSTEMS

DILLMAN UNIDRUM® ASPHALT PLANT

PHOENIX® TALON II™ BURNER

DOUBLE BARREL XHR ASPHALT PLANT

"ASTEC offers a complete line of portable, relocatable and stationary asphalt plant equipment produced under the ASTEC and the DILLMAN brands."

GENERATION 3 WARM MIX SYSTEM

WOOD PELLET MANUFACTURING PLANT

PORTABLE SIX PACK® ASPHALT PLANT WITH SEB

INDUSTRIES SERVED:

INFRASTRUCTURE

AGGREGATE AND MINING

ENERGY

PRODUCTS AND SERVICES:
- Milling Machines
- Cold In-Place Asphalt Recyclers
- Commercial-Class Asphalt Pavers
- Highway-Class Asphalt Pavers
- Material Transfer Vehicles
- Self-Propelled Brooms
- Aggregate Processing Equipment

REPORTING GROUP: INFRASTRUCTURE

LOCATION:
ACACIA RIDGE, QUEENSLAND, AUSTRALIA

ASTEC AUSTRALIA

Exclusively representing Astec Industries family of companies, Astec Australia continues to grow business internationally for Astec's Infrastructure, Aggregate and Mining and Energy Groups.

INFRASTRUCTURE GROUP

2017 was a record sales year in Australia for Roadtec's paving products, mainly the RP170EX and SB2500. The first new Carlson EZR2 heavy highway screed was promoted and sold at the Asphalt Association's bi-annual conference and the first Astec Double Barrel X style plant was sold into Australia. Committed to providing customers with the best service and support in the industries we serve, the company also recorded its strongest ever sales in after-market products.

AGGREGATE AND MINING GROUP

For the Aggregate and Mining Group, we had a strong year in materials processing products for JCI and AMS. The promotion of Astec Mobile Screens high-frequency products yielded sales in 2017, providing us with high expectations for 2018, particularly for the recycling industry and the quarry industry which are our focus.

ENERGY GROUP

Heatec's development of a new liquid asphalt tank to meet the specific needs of the Australian market proved successful with multiple sales in 2017. With multiple orders in hand for 2018 the Australian tank market is a key focus for our Energy Group for the year(s) ahead.

In 2018 we expect continued growth. With most of our aggregate sales occurring in the Southern Region, we will open a sales and service workshop in Melbourne to support our growing customer base there. New products planned for promotion and introduction to the market are Roadtec's and Carlson's narrow width 8′ pavers, Astec, Inc.'s Double Barrel XHR plant and Johnson Crushers International's modular crushing and screening plant.

GT205 MULTI FREQUENCY NRL

AAPA CONFERENCE BOOTH

SB-2500EX SHUTTLE BUGGY® MTV

PORTABLE DOUBLE BARREL ASPHALT PLANT WITH SEB AND HEATEC STORAGE TANK

> *Exclusively representing Astec Industries family of companies, Astec Australia continues to grow business internationally for Astec's Infrastructure, Aggregate and Mining and Energy Groups.*

HEATEC LIQUID ASPHALT TANK FARM

RX-600E/EX COLD PLANER

INDUSTRIES SERVED:

PRODUCTS AND SERVICES:

- Material Transfer Vehicles
- Asphalt Pavers—Asphalt Screeds
- Milling Machines
- Cold In-Place Recyclers
- Front Mounted Brooms
- Road Wideners
- Wood Processing Equipment

REPORTING GROUP: INFRASTRUCTURE

LOCATION: HAMELIN, GERMANY

ASTEC MOBILE MACHINERY

In addition to representing Roadtec and Peterson Pacific products in Europe, Astec Mobile Machinery (AMM) also supplies road wideners for hard shoulder work, maintenance and repairs of roads, farm roads and road widening. AMM also specializes in the technical reworking and resale of its used machines.

Located in Hamelin, Germany, AMM has sold equipment to customers all over the world.

In the future, AMM will work to represent additional Astec Industries' subsidiaries as opportunities arise.

BF-400 ROAD WIDENER

BF-400 ROAD WIDENER

RX-600E ASPHALT MILLING MACHINE

"AMM supplies road wideners for hard shoulder work, maintenance and repairs of roads, farm roads and road widening."

SB-2500E SHUTTLE BUGGY® MTV

SB-2500EX SHUTTLE BUGGY® MTV

INDUSTRIES SERVED:

INFRASTRUCTURE

PRODUCTS AND SERVICES:
- Highway-Class Asphalt Screeds
- Commercial-Class Asphalt Pavers
- Mobile Equipment Lighting
- Asphalt Screed Attachments

REPORTING GROUP: INFRASTRUCTURE

LOCATION: TACOMA, WASHINGTON, USA

CARLSON PAVING PRODUCTS

Carlson Paving Products has grown to become the asphalt paving industry's leader in highway-class asphalt screeds, commercial-class paver platforms and attachment innovations that enhance the safety and longevity of roadways around the globe.

Solidifying itself as the preeminent leader among asphalt screed manufacturers, Carlson produces seven highway-class screed platforms in front-mount, rear-mount, and fixed width variations. With their ability to mount to all North American tractors built by the major paver manufacturers, as well as the ability to retrofit to nearly all previous models, Carlson's line of the EZIII, EZIV, EZV and EZR2 screeds remain the most demanded platforms by highway-class contractors on the market today.

In 2017, Carlson achieved a milestone with its commercial paver platforms with the introduction of three all-new models: the CP85, CP100 II and CP130. Now with a full line of commercial pavers, ranging from the economical CP75 II to the class-redefining CP130, Carlson's platforms have emerged as the contractor's choice for performance, machine life cycle, and mat quality. With a steadily growing network of leading distributors, Carlson is poised to grow its market-share while targeting new opportunities with all-new export-oriented platforms for global markets.

With its continuously growing product line and steadfast dedication to the customer, Carlson enters 2018 poised to take advantage of emerging opportunities and deliver innovative solutions for the commercial and highway-class contractor in North America and around the globe.

CP85 PAVER

CP100 II PAVER

LED BLADE LIGHT

CP75 II PAVER

"Carlson Paving Products has grown to become the asphalt paving industry's leader in highway-class asphalt screeds, commercial-class paver platforms and attachment innovations."

EZR2: REAR-MOUNT SCREED

CP130 PAVER

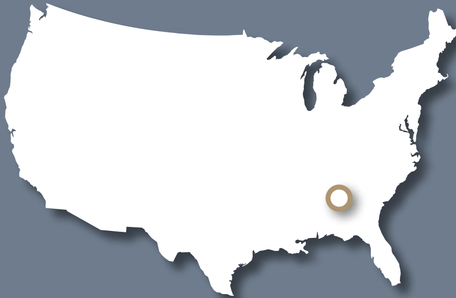
EZV: FRONT-MOUNT SCREED

INDUSTRIES SERVED:

PRODUCTS AND SERVICES:
- Milling Machines
- Cold In-Place Asphalt Recyclers
- Commercial Class Asphalt Pavers
- Material Transfer Vehicles
- Self-Propelled Brooms
- Soil Stabilizers

REPORTING GROUP: INFRASTRUCTURE

LOCATION: CHATTANOOGA, TENNESSEE, USA



ROADTEC

Roadtec was founded 36 years ago as a manufacturer of asphalt pavers. Today, Roadtec continues to lead the industry in asphalt pavers, and is an innovator in cold planers, soil stabilizers, brooms and material transfer vehicles.

In 2017, Roadtec maximized areas of growth and opportunity by releasing new products, expanding wear parts lines, growing the dealer network and refining telematics innovations.

The product line grew with the addition of the RX-600eLR Cold Planer and the MTV-1105 Material Transfer Vehicle. The RX-600eLR's dual flush cut capability gives operators an advantage when dealing with barrier walls and other obstructions. The MTV-1105's operator station provides exceptional visibility from the dump hopper to the paver.

Roadtec continues to expand the competitive wear parts line and promotes products to achieve record sales. The company also attracts competitor market share with customer focused service and support.

The Roadtec Dealer Network, initiated in 2016, saw exponential growth in 2017. As a result Roadtec experienced increased sales, while customers benefited from local service. This strategy continues to build trust and reinforce brand loyalty.

The industry-leading Guardian™ Telematics System continues to provide customers with best-in-class fleet management and real time reporting. As the system continues to develop, Roadtec is able to gather data and proactively support customers in the field, decreasing downtime and costs.

2018 will be a year of working to exceed customer expectations. Roadtec looks forward to continuing to lead the industry by providing unparalleled value, original product development and best-in-class service to customers worldwide.

SB-1500E SHUTTLE BUGGY® MTV WORKING WITH RP-195E PAVER

MTV-1105E MATERIAL TRANSFER VEHICLE

RX-600ELR COLD PLANER

"In 2017, Roadtec maximized areas of growth and opportunity by releasing new products, expanding wear parts lines, growing the dealer network and refining telematics innovations."

SB-2500E SHUTTLE BUGGY® MTV WORKING WITH RP-190E PAVER

SX-8 SOIL STABILIZER

RP-170E RUBBER TIRE PAVER

INDUSTRIES SERVED:

AGGREGATE AND MINING

INFRASTRUCTURE

PRODUCTS AND SERVICES:

- Mobile Screening Plants
- Portable Screening Plants
- Stationary Screen Structures
- High-Frequency Screens
- Crushing and Vibrating Equipment
- Asphalt Production Equipment

REPORTING GROUP: AGGREGATE AND MINING

LOCATION:
VESPASIANO, MINAS GERAIS, BRASIL

ASTEC DO BRASIL

Astec do Brasil is Astec's only manufacturing facility in South America producing a complete line of crushers, vibrating screens and portable, relocatable and stationary asphalt plants. In addition, Astec do Brasil markets and supports Astec's subsidiaries' equipment such as, track-mounted equipment, material transfer vehicles and scalers.

With the delivery and startup of complete crushing plants already manufactured in the new facility, Astec do Brasil is poised to become a significant supplier to the infrastructure and aggregate/mining segment of the market. The goal is to become the leader in the Brazilian market, while expanding throughout the Mercosur market. Shipment of equipment has already occurred to Argentina and Colombia.

Astec do Brasil continues to increase its line of products, with a focus on safety, quality, productivity and customer satisfaction. In 2017, they introduced an Astec Mobile Screens Vari-Vibe® Screen to the Brazilian market. This Vari-Vibe Screen is manufactured in Brasil and has already been shipped to customers.

Wear parts sales are becoming increasingly important to the market. Astec do Brasil continues to put its brand in contact with sales representatives, users and customers with competitive brands to continue increasing market penetration.

Overall, the response from current customers regarding our equipment has been exceptional, including Telsmith crushers and screens, which are reaching and even exceeding expected performance. This response supports increasing growth for Astec throughout Brazil.

44SBS CONE CRUSHER

VARI-VIBE SCREEN

SPARE AND WEAR PARTS

COMPLETE CRUSHING PLANT WITH H3244 HYDRA JAW CRUSHER, VGF 48X16 FEEDER AND 5' X 14' DD VIBRO KING SCREEN

> *"Astec do Brasil continues to increase its line of products, with a focus on safety, quality, productivity and customer satisfaction."*

8' X 24' TD VIBRO KING SCREEN

CMH3244 PRIMARY PORTABLE CRUSHING PLANT

INDUSTRIES SERVED:

PRODUCTS AND SERVICES:

- Track-Mounted Screening Plants
- Stationary Screen Structures
- Portable Screening Plants
- High-Frequency and Multi-Frequency Screens
- ProSizer® Plants

REPORTING GROUP: AGGREGATE AND MINING

LOCATION: STERLING, ILLINOIS, USA

ASTEC MOBILE SCREENS

Astec Mobile Screens is recognized as a global leader in screening solutions. Marketed together with the Kolberg-Pioneer (KPI) and Johnson Crushers International (JCI) brands, the company's products include mobile screening plants, portable and stationary screen structures and high-frequency screens for quarry, recycle, sand and gravel, industrial and other material processing industries.

In 2017, the GT205 Multi-Frequency Screen saw great adoption as producers were eager to try the new technology. The unit is ideal for the toughest applications where conventional incline screens are limited. Astec Mobile Screens also expanded the multi-frequency technology into its popular PTSC line, a portable screening structure.

Astec Mobile Screens has also expanded its ProSizer® line to include an electric version of the ProSizer® 3600. As an alternative to diesel power, the launch of the electric version of the unit will give producers the flexibility to better control their operating costs and can allow for smoother operation in dirty environments, such as recycled asphalt pavement processing. The ProSizer® 3600 is a single-load crushing plant for processing virgin aggregate and recycled materials.

In addition to their OEM parts, Astec Mobile Screens continues to develop its PDQ parts line for competitive products. Astec Mobile Screens now offers parts on nearly all lines of competitive mobile screening lines and has developed a truck kit to showcase a portable package of the PDQ parts line.

PROSIZER® 4200 PORTABLE PLANT

HIGH FREQUENCY STATIONARY SCREEN STRUCTURE

GT205 MULTI-FREQUENCY MOBILE SCREEN PLANT

PROSIZER® 3100 PORTABLE PLANT

> *Astec Mobile Screens, Inc. is recognized as a global leader in screening solutions.*

GT205 MULTI-FREQUENCY MOBILE SCREEN PLANT

PROSIZER® 3600 PORTABLE PLANT

INDUSTRIES SERVED:

AGGREGATE AND MINING

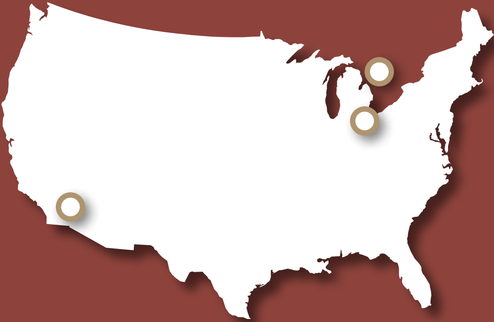
INFRASTRUCTURE

PRODUCTS AND SERVICES:

- Mine, Quarry and Construction Equipment
- Stationary Rockbreaker Systems
- Hydraulic Breakers
- Underground Mobile Rockbreakers
- Underground Mechanized Scalers
- Underground Utility Vehicles
- Demolition and Construction Attachments

REPORTING GROUP: AGGREGATE AND MINING

LOCATION: THORNBURY, ONTARIO, CANADA
RIVERSIDE, CALIFORNIA, USA
SOLON, OHIO, USA



BREAKER TECHNOLOGY

Breaker Technology (BTI) is the rock-breaking expert in the mining and quarrying industries. For nearly 60 years, BTI has been helping companies power their productivity and break into profitability.

BTI is known worldwide for exceptional rockbreaker systems. It offers 12 different model series, with over 300 boom-to-breaker combinations, for breaking oversize at primary crushers, grizzlies, draw points and stopes. All rockbreaker systems are custom-fitted to the mine or quarry application for maximum endurance.

Manufacturing and distributing a wide-range of underground mining vehicles has always been one of the core products in BTI's product line. Its latest design, the ScaleBOSS 3D/3DE scaler, is a cutting-edge machine for a new generation of underground mining. BTI's Mine Runner, a purpose-built utility vehicle, recently received an overhaul to increase its payload capacity to 4,000 to 6,000 pounds and a new extended wheel base model was added to the lineup.

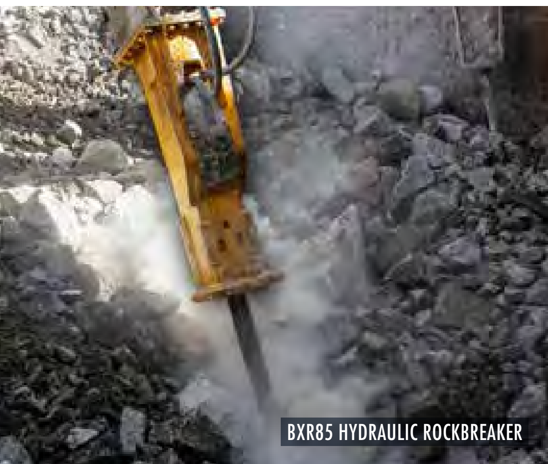
BTI also distributes a range of excavator attachments, which includes hydraulic rockbreakers, demolition attachments and compactors. The attachment line is known to be some of the most efficient attachments in North America.

Situated along the Southern Georgian Bay in Thornbury, Ontario, Canada, BTI has been innovating custom sales and dealer network engineering solutions since 1958. Its highly-qualified sales and dealer network supplies and services mining and aggregate equipment worldwide. BTI offers a depth of engineering experience, a dedicated and professional service and support network and a commitment to superior customer service, remaining a trusted brand in today's aggregate and mining industries.

MRHT20 ROCKBREAKER SYSTEM FITTED WITH A BXR65 HYDRAULIC BREAKER

EAGLE SHEAR II

SCALEBOSS 3DE SCALER


BXR85 HYDRAULIC ROCKBREAKER

"For nearly 60 years, BTI has been helping companies power their productivity and break into profitability."

MINE RUNNER UTILITY VEHICLE

KPI-JCI
ASTEC COMPANIES

INDUSTRIES SERVED:

AGGREGATE AND MINING

INFRASTRUCTURE

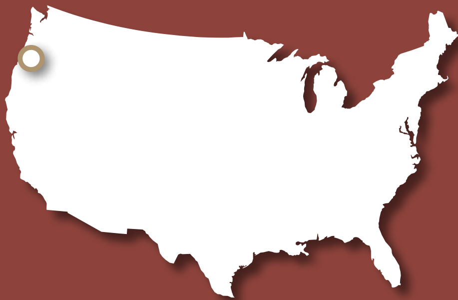
ENERGY

PRODUCTS AND SERVICES:

- Crushing Equipment
- Screening Equipment
- Track-Mounted Equipment
- Portable Equipment
- Stationary Equipment

REPORTING GROUP: AGGREGATE AND MINING

LOCATION: EUGENE, OREGON, USA



JOHNSON CRUSHERS INTERNATIONAL

Johnson Crushers International (JCI) is a global leader in engineering and manufacturing full lines of cone crushers, horizontal and incline vibrating screens and track-mounted, portable and stationary crushing and screening plants. Marketed together with the Kolberg-Pioneer (KPI) and Astec Mobile Screens brands, JCI is committed to meeting consumer demand.

JCI has continued to improve the operation and ease of maintenance on the Kodiak® Plus line of premier roller-bearing cone crushers. The Kodiak® Control System (KCS) has been fully implemented into all new cone crushers. This new, innovative technology allows producers to monitor crusher performance and routine maintenance on an easy-to-use interface. Updates to the bowl float sensor and the addition of a labyrinth contact seal have continued to improve bearing life and reduce operating costs.

The modular plants, launched in 2016, have shown growth as JCI has continued to offer more options for jaw and impact crushers, as well as horizontal and incline screens on its simple modular structures. They are the ideal solution for producers looking for a simplified equipment selection process with industry-leading technology and low cost transportation.

JCI continues to develop its PDQ parts line for competitive products, as well as grow support for its OEM line. In 2017, JCI has worked closely with its distribution network to more efficiently provide crusher castings to the market through a commitment to stocking programs.

"Manufacturing full lines of cone crushers, horizontal and incline vibrating screens and track-mounted, portable and stationary crushing and screening plants."

KODIAK® PLUS K200+ MOBILE CONE CRUSHER PLANT

AGGREGATE SYSTEM

KODIAK® PLUS K400+ CONE CRUSHER

DUAL HORIZONTAL PORTABLE SCREEN PLANT

KODIAK® PLUS K500+ IN AND OUT PORTABLE PLANT

COMBO™ SCREEN

KPI-JCI
ASTEC COMPANIES

INDUSTRIES SERVED:

AGGREGATE AND MINING

INFRASTRUCTURE

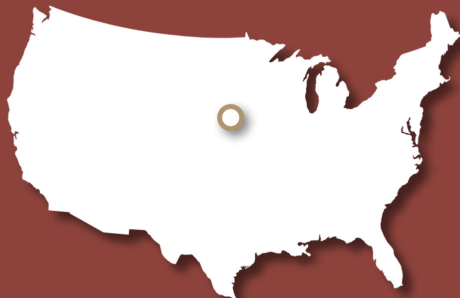
ENERGY

PRODUCTS AND SERVICES:

- Material Handling Equipment
- Crushing Equipment
- Screening Equipment
- Track-Mounted Equipment
- Washing and Classifying Equipment
- Portable Equipment
- Stationary Equipment

REPORTING GROUP: AGGREGATE AND MINING

LOCATION: YANKTON, SOUTH DAKOTA, USA



KOLBERG-PIONEER

For more than 75 years, Kolberg-Pioneer (KPI) has led the marketplace in designing and manufacturing powerful equipment for the aggregate, construction, mining, industrial and recycling industries. Marketed together with the Johnson Crushers International (JCI) and Astec Mobile Screens brands, KPI manufactures complete lines of crushing, screening, material handling and washing and classifying equipment in stationary, portable and mobile configurations.

In 2017, KPI greatly expanded several of its product lines. The crushing line now features the 3500 Vertical Shaft Impactor (VSI), with a 14-inch feed tube opening and 350 TPH capacity. All VSI crushers from KPI also offer new drop-in carbides to greatly reduce downtime for maintenance.

KPI also expanded its SuperStacker® telescoping stacker line with the launch of the 190-foot model with 36-inch belt, and the containerized 150-foot model with 36-inch belt. The updated, patent-pending Wizard Touch® automation software provides application flexibility with configurable stockpiles.

The washing and classifying line from KPI also received an update with its fines recovery plants being released with containerized options. This will greatly reduce transportation costs and allow KPI to more efficiently ship equipment to producers.

In addition to their OEM parts, Kolberg-Pioneer continues to develop its PDQ parts line for competitive products. In 2017, KPI has grown the washing and classifying PDQ parts lines with dedicated, internal engineering resources. KPI now offers an online platform for interactive, 3D parts manuals to more efficiently serve customers and dealers anywhere and at any time.

WASHING AND CLASSIFYING SYSTEM

GT125 MOBILE JAW PLANT

CS4250 PORTABLE HORIZONTAL SHAFT IMPACTOR PLANT

3500 VSI VERTICAL SHAFT IMPACT CRUSHER

"KPI manufactures complete lines of crushing, screening, material handling and washing and classifying equipment in stationary, portable and mobile configurations."

CS3055 PORTABLE JAW PLANT

FT4250 MOBILE HORIZONTAL SHAFT IMPACTOR PLANT

GT440 HYBRID MOBILE HORIZONTAL SHAFT IMPACTOR PLANT

INDUSTRIES SERVED:

AGGREGATE AND MINING

INFRASTRUCTURE

PRODUCTS AND SERVICES:

- Jaw and Cone Crushers
- Modular Crushing Plants
- Coal Crushers
- Vibrating Screens
- Aggregate Feeders and Conveyors
- Rotary Scrubbers

REPORTING GROUP: AGGREGATE AND MINING

LOCATION: JOHANNESBURG, SOUTH AFRICA

OSBORN ENGINEERED PRODUCTS

Osborn designs, engineers, manufactures, markets and provides full after-market support for a well-established range of mineral processing equipment. Osborn's primary market is in the mining industry, followed by the aggregate and metallurgical industries.

Osborn maintains an ISO:9001:2008 certification for quality assurance and offers the following equipment of its own design: single- and double-toggle jaw crushers, rotary breakers, roll crushers, ring crushers, grinding mills, out-of-balance or exciter-driven screens and feeders and modular "containerized" crusher and screening systems. Complementing its own designed range of products Osborn also manufactures, markets and supports, under licenses, products from Telsmith and KPI.

Osborn has, in the past year, developed a D3 apron feeder, which will be put into production during April 2018. The D3 will be the smallest offering within Osborn's apron feeder range. The expectation is that the D3 will be well received by the market, which traditionally had to settle for a D4 apron feeder. In addition, Osborn continues to introduce innovative upgrades and features to existing products, through close collaboration with its customer base, with focus on "safety, quality, and productivity".

MODULAR 3042 JAW STATION

MODULAR 3648 JAW PLANT

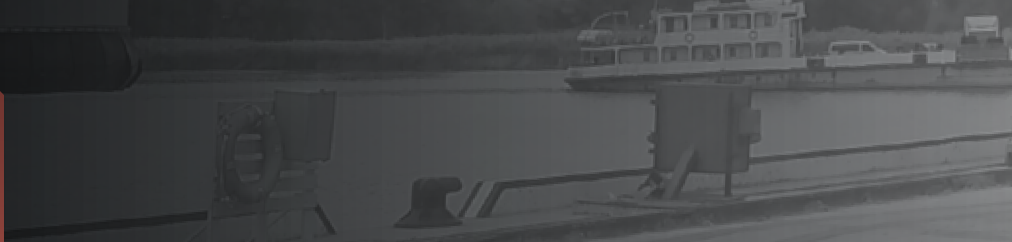
ROTARY COAL BREAKER 3M X 6M

MODULAR 44 GYRASPHERE

MODULAR SCREEN STATIONS

"Osborn designs, engineers, manufactures, markets and provides full after-market support for a well-established range of mineral processing equipment."

MODULAR PRIMARY AND SECONDARY CRUSHERS



Telestack
Mobile Bulk Material Handling

INDUSTRIES SERVED:

AGGREGATE AND MINING

INFRASTRUCTURE

ENERGY

PRODUCTS AND SERVICES:

- Shiploaders and Unloaders
- Bulk Reception Feeders
- Radial Telescopic Stackers
- Mobile Truck Unloaders
- Track-Mounted Conveyors
- Reclaim Hoppers
- Mobile Truck Unloaders

REPORTING GROUP: AGGREGATE AND MINING

LOCATION: OMAGH, NORTHERN IRELAND

TELESTACK

Telestack's products include ship loaders, ship unloaders, bulk reception feeders, radial telescopic stackers, mobile hopper feeders, track mounted conveyors and reclaim hoppers. Their customized solutions are used for vessel loading/unloading, stacking, reclaiming and rail wagon loading/unloading of a range of dry bulk materials. The end users are some of the largest companies in their chosen industries and they repeatedly rely on Telestack's proven record of performance to develop customized solutions for their bulk-handling facilities. Its externally audited procedures ISO 14001: 2015 (Environmental Management), OHSAS 18001:2007 (Health & Safety Management) and ISO 9001:2025 (Quality Management Systems) ensures Telestack has the processes in place to deliver what the customer ordered on time, within budget and to the quality standards required by large multi-national companies. Robust designs and innovative assembly designs allow Telestack equipment to be easily packed into shipping containers and quickly assembled on site, anywhere in the world, ensuring Telestack is competitive globally.

Telestack continues to invest heavily in its facility and has recently invested $2.5 million in its paint facility, as part of a long term strategy to future proof its capacity to support the development of an extensive range of world-class, innovative and quality products. Demonstrating enviable year-on-year growth, Telestack is globally regarded as one of the world's leading manufacturers in the global material handling industry designing, manufacturing and exporting from its base in Northern Ireland.

TS1042 & T800-6 STOCKPILING COAL

HF REVOLUTION LOADING COASTER VESSELS

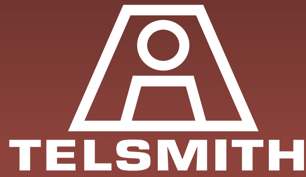
MH4875 MULCH HOPPER

> *"One of the world's leading manufacturers in the global material handling industry."*

TITAN 450-4 BULK RECEPTION FEEDER AND TS650 RADIAL TELESCOPIC CONVEYOR

TS 527 RAIL MOUNTED SHIPLOADER

TCL 1031 STOCKPILING AGGREGATE AFTER PRIMARY JAW CRUSHER



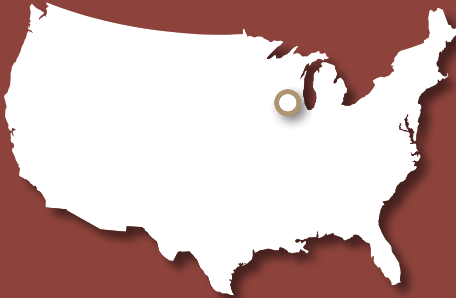
INDUSTRIES SERVED:

PRODUCTS AND SERVICES:

- Cone, Jaw and Impactor Crushers
- Horizontal and Vertical Screens
- Conveyors
- Feeders
- Track and Wheeled Portable Plants
- Modular Plants

REPORTING GROUP: AGGREGATE AND MINING

LOCATION: MEQUON, WISCONSIN, USA



TELSMITH

For over 110 years, Telsmith has provided integrated minerals processing solutions to the global aggregate and mining industries through a commitment to ethical business practices, technologically advanced products, manufacturing excellence and world-class customer support.

With a focus on improving efficiency, profitability and safety in customer operations, Telsmith designs and manufactures processing equipment for the reduction and sizing of raw material. Industries served include precious metals mining, processing of aggregates for construction materials and recycling of recovered materials, including concrete, asphalt and steel slag. Core products include jaw crushers, cone crushers, impact crushers, vibrating screens and feeders.

In addition to core components, Telsmith also designs and manufactures complete processing systems. Telsmith capabilities include custom solutions ranging from mobile crushing systems to large modular processing plants that deliver high volume production with low operating costs.

Offering a full spectrum of services including conceptual design, engineering and construction management, Telsmith brings a truly integrated package of solutions to the market place.

In 2017, Telsmith continued the roll-out of the T-Series line of cone crushers with the introduction and initial sale of the T500 to a quartzite mine. Telsmith also completed the design, manufacture, shipment and installation of a containerized, modular crushing plant located in Thailand. This new design allows Telsmith to design and build complete plants and ship them competitively throughout the world.

CONTAINERIZED PLANT

32X58 TEL-TRAX JAW PLANT

"Telsmith designs and manufactures processing equipment for the reduction and sizing of raw material."

8X20 VIBRO-KING TL SCREEN PLANT

T400 PORTABLE CONE CRUSHER

CONTAINERIZED 3450 HYDRA JAW PLANT

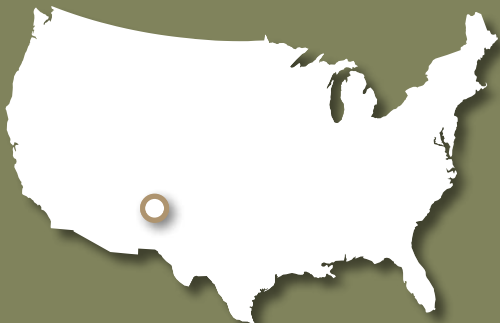
INDUSTRIES SERVED:

PRODUCTS AND SERVICES:

- Asphalt-Rubber Blending Systems
- Hot Oil Heaters
- Asphalt Storage Tanks
- Heavy Fuel Preheaters
- Emission Control Equipment
- Liquid Additive Systems
- Asphalt Storage Tanks
- Concrete Plants

REPORTING GROUP: ENERGY

LOCATION: ALBUQUERQUE, NEW MEXICO, USA



CEI ENTERPRISES

CEI Enterprises designs, produces and services mixing equipment for both concrete and modified asphalt materials. Products include concrete batch plants, asphalt-rubber blending systems, hot oil heaters and storage tanks for liquid asphalt and fuel, as well as liquid additive systems.

Concrete production equipment includes the Fusion™ concrete batch plant. The Fusion plant combines established, high-precision, aggregate blending technology from the asphalt industry with traditional cement metering from the concrete industry. This process yields superior quality concrete, while allowing producers to reduce their material and labor costs. This contributes to higher profitability for producers, while still letting them offer better concrete mix to their local markets. In 2017, the CEI Fusion plant contributed to high-spec, military infrastructure work at Kirtland AFB in Albuquerque, New Mexico.

In addition to the Fusion plant, CEI also developed a portable Cement Treated Base (CTB) plant that is currently operating in San Antonio, Texas.

CEI is an industry leader in asphalt-rubber blending systems. These systems mix ground rubber from recycled tires with liquid asphalt to create better, longer-lasting roads. Recent CEI projects have included multiple asphalt-rubber blending systems delivered to California and Canada.

PORTABLE ASPHALT RUBBER TANK

CEMENT TREATED BASE PLANT

LIQUID ASPHALT STORAGE TANKS

FUSION™ HYBRID-PROCESS READY MIX CONCRETE PLANT

FUSION™ HYBRID-PROCESS READY MIX CONCRETE PLANT

HEATERS

> *"CEI Enterprises of Albuquerque, NM designs, produces and services mixing equipment for both concrete and modified asphalt materials."*

INDUSTRIES SERVED:

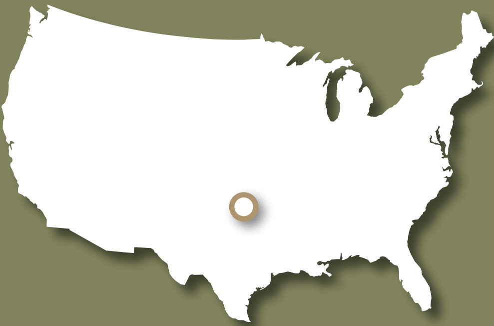
ENERGY

PRODUCTS AND SERVICES:

- Fluid Pump Trailers
- Drills for Oil and Gas
- Water Well Drills
- Drills for Mining Core Samples

REPORTING GROUP: ENERGY

LOCATION: ENID, OKLAHOMA, USA



GEFCO

GEFCO is a known leader in the development and manufacture of reliable and safe drilling equipment and related products. Our experienced engineers design a diverse line of products allowing us to serve various industries including: water well, environmental, groundwater monitoring, construction, mining, and oil and gas exploration.

In operation for over 80 years, GEFCO is well known in the industry for reliability and exceptional customer service. GEFCO's 260,000 sq. ft. state-of-the-art manufacturing facility includes a fully-integrated machine shop, fabrication and weld shop, assembly, painting and testing facility.

As a global company, with products delivered to over 100 countries, GEFCO is focused on remaining competitive by researching and developing equipment that can be adapted for various terrains, climates and demanding conditions.

We are committed to producing high-quality products, exceptional customer support and outstanding value. It is our priority to exceed our customers' requirements and comply with our industry standards by promoting a continuous improvement culture for our products, processes, and services.

GEFCO DP 2000

GEFCO 30K

GEFCO 20K

GEFCO 135

"GEFCO, Inc. is a known leader in the development and manufacture of reliable and safe drilling equipment and related products."

GEFCO 22 RC

INDUSTRIES SERVED:

ENERGY

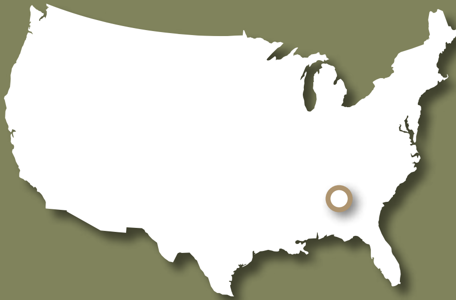
INFRASTRUCTURE

PRODUCTS AND SERVICES:

- Thermal Fluid Heaters
- Process Heaters
- Asphalt Storage, Heating, and Blending Equipment
- Instantaneous Water Heaters
- Engineering Services for Asphalt Terminals and Emulsion Plants

REPORTING GROUP: ENERGY

LOCATION: CHATTANOOGA, TENNESSEE, USA



HEATEC

Heatec celebrated its 40th anniversary in 2017. The company continues to design, manufacture and service heating and storage equipment. Heatec products are used in a variety of industries, including hot mix asphalt plants, asphalt terminals, gas processing plants, food and beverage production facilities, chemical plants and power plants. The company continues to adapt its products to meet the needs and standards of the international market and to configure the products for easy transport overseas.

The company developed new computerized control systems for asphalt terminals and tank farms at hot mix asphalt plants. Heatec polymer systems were upgraded to use programmable logic controllers (PLCs). New versions of its Recon® monitoring system were introduced. One version can monitor equipment at numerous plants simultaneously, eliminating the need to switch back and forth. Another version expands the monitoring capabilities to include the operating status of the heater.

The company has expanded its customer training programs to include an annual class on operation of equipment at asphalt terminals. The class is conducted at the training center located at the Heatec manufacturing facility. The company continues to participate in Astec customer schools held in Chattanooga and to provide on-site training for operators at their facilities.

TANK FARM MANAGEMENT CONTROLS

WATER BATH HEATERS FOR A POWER PLANT

ASPHALT TANK FARM

ASPHALT EMULSION BLENDING TERMINAL

VERTICAL THERMAL FLUID HEATERS

THERMAL FLUID HEATER

> *"Heatec products are used in a variety of industries, including hot mix asphalt plants, asphalt terminals, gas processing plants, food and beverage production facilities, chemical plants and power plants."*

ASPHALT TERMINAL

INDUSTRIES SERVED:

ENERGY

INFRASTRUCTURE

PRODUCTS AND SERVICES:

- Whole Tree Chippers
- Whole Tree Debarkers
- Horizontal Grinders
- Blower Trucks and Trailers
- Screening Equipment
- Asphalt Shingle Shredders

REPORTING GROUP: ENERGY

LOCATION: EUGENE, OREGON, USA

PETERSON PACIFIC CORPORATION

Peterson Pacific Corp. is a manufacturer of grinders, chippers, debarkers, screens and blower trucks that serve a wide variety of markets. The company has 110,000 square feet of modern manufacturing space. Peterson machines are sold and supported through a worldwide network of distributors and direct sales and service representatives.

Peterson horizontal grinders reduce wood, low value logs and other organic materials; the reduced material is used in the compost, mulch, and biomass energy markets. Peterson grinders can also reduce certain construction and demolition materials, such as asphalt shingles, that can then be recycled and used in hot mix asphalt paving. Peterson drum and disc chippers and debarkers are used to produce wood chips for pulp and paper production, as well as biomass energy markets. Peterson blower trucks and trailers are used to broadcast compost and mulch for landscaping and erosion control. Peterson deck screens are used for classifying materials to maximize the value of each product. Many Peterson machines are available in either electric or diesel power, depending on the application. For increased mobility at a job site, both tracked and wheeled versions of many of their products are available.

6310B DRUM CHIPPER

3310 DRUMCHIPPER

5700D HORIZONTAL GRINDER

4710D HORIZONTAL GRINDER

5000H WHOLE TREE CHIPPER

2700D HORIZONTAL GRINDER

> *Peterson Pacific Corp. is a Eugene, Oregon based manufacturer of grinders, chippers, debarkers, screens, and blower trucks that serve a wide variety of markets.*

BT60C BLOWER TRUCK

INDUSTRIES SERVED:

ENERGY

INFRASTRUCTURE

PRODUCTS AND SERVICES:

- Forced Draft Burners
- Direct Fired Applications
- Indirect Fired Applications
- Control Systems
- Pump Sets
- Custom Engineered Systems

REPORTING GROUP: ENERGY

LOCATION: PARSONS, KANSAS, USA

POWER FLAME

Power Flame's products are sold to a wide range of customers in the commercial/industrial burner market to produce steam or hot water for heating buildings, schools, hospitals, food processing, aerospace, petrochemical and infrastructure.

Its products consist of "design and build" burners capable of converting liquid or gaseous fuels into usable energy. Its product lines cover input capacities from 400,000 to 120,000,000 BTU/HR. Its combustion systems are offered through manufacturer representatives for retrofit to replace existing combustion equipment with new, state-of-the art systems or directly to original equipment manufacturers' customers for new packaged energy generating systems.

Power Flame has been able to use its proven advanced low and ultra-low emission technologies to expand sales on an international level by assisting environmental authorities to set new emission and efficiency standards to clean the air in new global markets.

In addition to state-of-the-art combustion systems, it offers a wide range of operating control systems, which can vary from simple relay-based logic to microprocessor-based controls to sophisticated PLC applications.

RF AND LOW-NOX BURNERS

C BURNER WITH NEW AIR DAMPER

VECTOR INDUSTRIAL BURNER WITH DIRECTOR SCS CONTROLS

CMAX 50 HZ BURNER

ULTRA-LOW NOX CSB BURNER ON A D-TYPE WATERTUBE BOILER

FREE STANDING CONTROL PANELS WITH TOUCH SCREEN DISPLAYS

“Our products consist of “design and build” burners capable of converting liquid or gaseous fuels into usable energy.”

INDUSTRIES SERVED:

ENERGY

INFRASTRUCTURE

PRODUCTS AND SERVICES:

- Stationary Transit and Central Mix Concrete Batch Plants
- Portable Transit and Central Mix Concrete Batch Plants
- High Production Paving Concrete Batch Plants
- Tilt Mixers
- Controls
- Concrete Placing Equipment

REPORTING GROUP: ENERGY

LOCATION: BURLINGTON, WISCONSIN, USA

REXCON

RexCon manufactures a complete line of stationary and portable central mix and ready mix concrete batch plants. For decades, the RexCon product line has been an industry leader because of its quality design, durability and high-production capabilities.

In 2017, RexCon participated in ConExpo 2017 in Las Vegas, Nevada, showcasing their highly-popular Mobile 12 Self-Erecting Central Mix Batch Plant. The self-supporting sub frame and superior hydraulic system reduces the need for site preparation, foundations and cranes. This plant is capable of producing about 250 cubic yards per hour.

RexCon was tasked with designing a highly custom concrete batch plant. The result: a batch plant that can produce about 800 cubic yards of concrete per hour. With two gravity-fed dry lanes, and one central mix wet lane, it can charge three trucks simultaneously. In 2017, it finished the manufacturing and erection of the plant located in Chicago, Illinois near the O'Hare airport. It is currently the largest batch plant in the Midwest.

2017 was a significant year for RexCon. Not only did it have a record year for sales, but it also joined the Astec Industries family. RexCon is looking forward to continued growth, both domestically and internationally.

RexCon's reputation continues to be based on honesty and integrity, with devoted commitment to supporting customers, new and old, in a manner which ensures long-term loyalty to our products.

MODEL S BATCH PLANT WITH HORIZONTAL MIXER

> *"RexCon manufactures a complete line of stationary and portable central mix and ready mix concrete batch plants."*

LOGO 12 TRANSIT MIX BATCH PLANT

MOBILE 5 CENTRAL MIX BATCH PLANT

LOGO 12 CENTRAL MIX BATCH PLANT

REXBATCH 150 DUAL LANE WET/DRY PLANT

MOBILE 12 SELF-ERECTING CENTRAL MIX PLANT

BOARD OF DIRECTORS

FRONT ROW, LEFT TO RIGHT

James B. Baker
Co-Managing Director of River Associates Investments, LLC
Chairman—Audit Committee
Member—Compensation Committee

William D. Gehl
Chairman of the Board of IBD Southeastern Wisconsin
Chairman of the Board of FreightCar America
Member—Compensation Committee
Member—Audit Committee

Benjamin G. Brock
President and Chief Executive Officer of Astec Industries, Inc.
Chairman—Executive Committee

Charles F. Potts
Chairman of the Board of Heritage Construction and Materials
Member—Audit Committee
Member—Compensation Committee

William G. Dorey
Former Chief Executive Officer and President of Granite Construction, Inc.
Chairman—Compensation Committee
Member—Audit Committee
Member—Nominating and Corporate Governance Committee

BACK ROW, LEFT TO RIGHT

W. Norman Smith
Vice Chairman of Astec Industries, Inc.
Vice Chairman of the Board
Member—Executive Committee

William B. Sansom
Chairman of the Board and Chief Executive Officer of The H.T. Hackney Company
Member—Audit Committee
Member—Nominating and Corporate Governance Committee
Lead Independent Director

Daniel K. Frierson
Chairman of the Board and Chief Executive Officer of the Dixie Group, Inc.
Chairman—Nominating and Corporate Governance Committee
Member—Audit Committee
Member—Executive Committee

Glen E. Tellock
President and CEO of Lakeside Foods
Member—Audit Committee
Member—Nominating and Corporate Governance Committee

ASTEC INDUSTRIES' CORPORATE EXECUTIVE OFFICERS

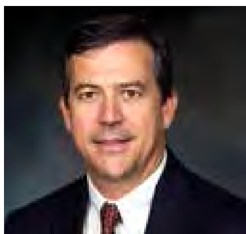
Benjamin G. Brock
President and Chief Executive Officer

Richard J. Dorris
Executive Vice President and Chief Operating Officer

W. Norman Smith
Vice Chairman

Steve Claude
Group President Infrastructure

Richard A. Patek
Group President – Aggregate and Mining International



Jaco van der Merwe
Group President Energy

Jeffrey J. Elliott
Group President – Aggregate and Mining U.S.A.

David C. Silvious
Vice President, Chief Financial Officer and Treasurer

Stephen C. Anderson
Vice President of Administration, Corporate Secretary and Director of Investor Relations

Robin A. Leffew
Corporate Controller

FINANCIAL INFORMATION

SELECTED CONSOLIDATED FINANCIAL DATA
(in thousands, except as noted*)

	2017	2016	2015	2014	2013
Consolidated Statement of Income Data					
Net sales	$ 1,184,739	$ 1,147,431	$ 983,157	$ 975,595	$ 932,998
Gross profit	243,129	265,269	218,843	215,316	207,119
Gross profit %	20.5%	23.1%	22.3%	22.1%	22.2%
Selling, general and administrative expenses	160,775	153,145	145,180	141,490	133,337
Research and development	26,817	24,969	23,676	22,129	18,101
Income from operations	55,537	87,155	49,987	51,697	55,681
Interest expense	840	1,395	1,611	720	423
Other income	1,218	529	3,055	1,207	1,937
Net income	37,590	54,988	31,966	34,206	39,214
Net income attributable to controlling interest	37,795	55,159	32,797	34,458	39,042
Earnings per common share*:					
Net income attributable to controlling interest					
Basic	1.64	2.40	1.43	1.51	1.72
Diluted	1.63	2.38	1.42	1.49	1.69
Consolidated Balance Sheet Data					
Working capital	$ 423,823	$ 407,972	$ 399,785	$ 388,862	$ 385,680
Total assets	889,579	843,601	777,353	802,265	749,291
Short-term debt	--	4,632	--	2,814	--
Current maturities of long-term debt	2,469	2,538	4,528	1,027	34
Long-term debt, less current maturities	1,575	4,116	5,154	7,061	510
Total equity	686,765	648,841	609,858	596,152	577,311
Cash dividends declared per common share*	0.40	0.40	0.40	0.40	0.30
Book value per share at year-end (shareholders' equity / diluted shares outstanding for the year)*	29.58	27.99	26.30	25.62	24.85

SUPPLEMENTARY FINANCIAL DATA

(in thousands, except as noted*)

Quarterly Financial Highlights (Unaudited)		**First Quarter**	**Second Quarter**	**Third Quarter**	**Fourth Quarter**
2017	Net sales	$ 318,401	$ 301,909	$ 252,054	$ 312,375
	Gross profit	75,771	65,524	39,084	62,750
	Net income (loss)	15,080	14,359	(2,703)	10,854
	Net income (loss) attributable to controlling interest	15,120	14,420	(2,667)	10,922
	Earnings (loss) per common share*				
	Net income (loss) attributable to controlling interest:				
	Basic	0.66	0.63	(0.12)	0.47
	Diluted	0.65	0.62	(0.12)	0.47
2016	Net sales	$ 278,721	$ 294,394	$ 247,752	$ 326,564
	Gross profit	71,956	73,452	55,389	64,472
	Net income	17,678	18,141	6,835	12,334
	Net income attributable to controlling interest	17,743	18,192	6,838	12,386
	Earnings per common share*				
	Net income attributable to controlling interest:				
	Basic	0.77	0.79	0.30	0.54
	Diluted	0.77	0.79	0.30	0.53
Common Stock Price*					
	2017 High	$ 73.37	$ 66.66	$ 58.06	$ 59.22
	2017 Low	59.02	52.35	45.70	48.44
	2016 High	$ 47.97	$ 57.51	$ 62.75	$ 71.88
	2016 Low	33.08	44.21	51.73	52.08

The Company's common stock is traded in the Nasdaq National Market under the symbol ASTE. Prices shown are the high and low sales prices as announced by the Nasdaq National Market. The Company paid quarterly dividends of $0.10 per common share to shareholders in each quarter of 2016 and 2017. As determined by the proxy search on the record date for the Company's 2018 annual shareholders' meeting, the number of holders of record is approximately 215.

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

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

The following discussion contains forward-looking statements that involve inherent risks and uncertainties. Actual results may differ materially from those contained in these forward-looking statements. For additional information regarding forward-looking statements, see "Forward-looking Statements" on page 68.

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, oil and natural gas drilling, industrial heat transfer, wood chipping and grinding, wood pellet processing, 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 21 companies that are consolidated in our financial statements, which includes 17 manufacturing companies, two companies that operate as dealers for the manufacturing companies, a captive insurance company and the parent company. RexCon, Inc. was purchased by the Company on October 1, 2017 and is included in the number of companies disclosed above. The companies fall within three reportable operating segments: the Infrastructure Group, the Aggregate and Mining Group and the Energy Group.

Infrastructure Group - This segment consists of five business units, three of which design, engineer, manufacture and market a complete line of asphalt plants, asphalt pavers, wood pellet plants and related components and ancillary equipment. The two remaining companies in the Infrastructure Group primarily sell, service and install equipment produced by the manufacturing subsidiaries of the Company, with the majority of sales to the infrastructure industry.

Aggregate and Mining Group - This segment consists of eight business units that design, manufacture and market heavy equipment and parts in the aggregate, metallic mining, quarrying, recycling, ports and bulk handling industries.

Energy Group - This segment consists of six business units that design, manufacture and market heaters, gas, oil and combination gas/oil burners, combustion control systems, drilling rigs, concrete plants, wood chippers and grinders, pump trailers, commercial and industrial burners, combustion control systems, storage equipment and related parts to the oil and gas, construction, and water well industries. RexCon, Inc. was added to this group effective October 1, 2017 as described below.

Individual Company subsidiaries included in the composition of the Company's segments are as follows:

1. **Infrastructure Group** – Astec, Inc., Roadtec, Inc., Carlson Paving Products, Inc., Astec Australia, Pty Ltd and Astec Mobile Machinery GmbH.
2. **Aggregate and Mining Group** – Telsmith, Inc., Kolberg-Pioneer, Inc., Johnson Crushers International, Inc., Osborn Engineered Products SA (Pty) Ltd, Breaker Technology, Inc., Astec Mobile Screens, Inc., Astec do Brasil Fabricacao de Equipamentos LTDA and Telestack Limited.
3. **Energy Group** – Heatec, Inc., CEI, Inc., GEFCO, Inc., Peterson Pacific Corp., Power Flame Incorporated (beginning in August 2016) and RexCon, Inc. (beginning in October 2017). RexCon, Inc., a manufacturer of high-quality stationary and portable, central mix and ready mix concrete batch plants, concrete mixers and concrete paving equipment, was added to this group effective October 1, 2017 upon the acquisition of substantially all of the assets and liabilities of RexCon LLC.

The Company also has one other category, Corporate, that contains the business units that do not meet the requirements for separate disclosure as a separate operating segment or inclusion in one of the other reporting segments. The business units in the Corporate category are Astec Insurance Company ("Astec Insurance" or "the captive") and Astec Industries, Inc., the parent company. These two companies provide support and corporate oversight for all the companies that fall within the reportable operating segments.

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 price of crude oil, which affects the cost of fuel, and liquid asphalt and changes in the price of steel.

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 funding provides for approximately 25% of all highway, street, roadway and parking construction in the United States.

In July 2012, the "Moving Ahead for Progress in the 21st Century Act" ("Map-21") was approved by the U.S. federal government, which authorized $105 billion of federal spending on highway and public transportation programs through fiscal year 2014. In August 2014, the U.S. government approved short-term funding of $10.8 billion through May 2015. 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 allow its customers to plan and execute longer-term projects, but 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. The funding for the bill as proposed would rely in part on direct federal spending as well as increased private sector funding in exchange for federal tax credits. 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 the 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 oil and its impact on customers' purchasing decisions 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; however, the Federal Reserve raised the Federal Funds Rate in 2016 and again in March, June and December 2017, and may implement additional increases in the future.

Significant portions of the Company's revenues from the Infrastructure Group relate to the sale of equipment involved in the production, handling, recycling or installation of asphalt mix. Liquid asphalt is a by-product of oil production. An increase or decrease in the price of oil impacts the cost of asphalt, which is likely to alter demand for asphalt and therefore affect 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 mix. Oil price volatility makes it difficult to predict the costs of oil-based products used in road construction such as liquid asphalt and gasoline. Oil prices rose during much of 2016 and continued to fluctuate during 2017 and fluctuations are expected to continue 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. However, the

Company believes the continued funding of the FAST Act federal highway bill passed in December 2015 has greater potential to impact the buying decisions of the Company's customers than does the fluctuation of oil prices in 2018.

Contrary to the impact of oil prices on many of the Company's Infrastructure Group products as discussed above, the products manufactured by the Energy Group, which are used in drilling for oil and natural gas, in heaters for refineries and oil sands and in double fluid pump trailers for fracking and oil and gas extraction, 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 the domestic economy and the Company's business.

Steel is a major component in the Company's equipment. Steel followed typical seasonal patterns during 2017, peaking in April and reaching lows in November. Prices began to rise in early 2018 and are expected to continue to rise throughout the first and second quarters of 2018 due to seasonal demand and an improving economy. The Company expects normal seasonal price movement during 2018 with steel prices higher on average than in 2017. The Company continues to utilize forward-looking contracts (with no minimum or specified quantity guarantees) coupled with advanced steel purchases to minimize the impact of any price increases. The Company will review the trends in steel prices entering into the second half of 2018 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. From mid-2012 through 2017, the strong U.S. dollar has negatively impacted pricing in certain foreign markets the Company serves. The Company expects the U.S. dollar to remain strong as compared to historical rates in the near term relative to most foreign currencies. Increasing domestic interest rates or weakening economic conditions abroad could cause the U.S. dollar to continue to 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 2017, approximately 65% of the Company's sales were to the end user. The Company expects this ratio to be between 60% and 70% for 2018.

The Company is operated on a decentralized basis with a complete management team for each operating subsidiary. Finance, insurance, legal, shareholder relations, corporate accounting and other corporate matters are primarily handled at the corporate level (i.e., Astec Industries, Inc., the parent company). The engineering, design, sales, manufacturing and basic accounting functions are handled at each individual subsidiary. Standard accounting procedures are prescribed and followed in all reporting.

During 2016, the Company implemented revised profit sharing plans whereby corporate officers, subsidiary presidents and other employees at each subsidiary have the opportunity to earn profit sharing incentives based upon the Company's and/or the individual groups or subsidiaries' return on capital employed, EBITDA margin and safety. Corporate officers' and subsidiary presidents' awards when calculated at targeted performance, are between 35% and 100% of their base salary, depending upon their responsibilities, and the plans allow for awards of up to 200% of the target. Each subsidiary has the opportunity to earn up to 10% of its after-tax profit as a profit-sharing incentive award to be paid to its employees.

The Company also implemented revised long-term incentive plans during 2016 whereby corporate officers, subsidiary presidents and other corporate or subsidiary management employees will be awarded Restricted Stock Units ("RSUs") if certain goals are met based upon the Company's Total Shareholder's Return ("TSR") as compared to a peer group and the Company's pretax profit margin. The grant date value of corporate officers' and subsidiary presidents' awards, when calculated at targeted performance, are between 20% and 100% of their base salary, depending upon their responsibilities, and the plans allow for awards of up to 200% of the target. Additional RSUs may be granted to other key subsidiary management employees based upon individual subsidiary profits.

Results of Operations: 2017 vs. 2016

Net Sales
Net sales increased $37,308 or 3.3% to $1,184,739 in 2017 from $1,147,431 in 2016. Sales are generated primarily from new equipment purchases made by customers for use in construction of privately funded infrastructure, public sector spending on infrastructure and sales of equipment for the aggregate, mining, wood pellet, quarrying and recycling markets, and for oil and gas and geothermal industries. Excluding a decline in domestic wood pellet plant sales discussed below, total sales increased $164,508 between years.

Domestic sales for 2017 were $932,294 or 78.7% of net sales compared to $941,273 or 82.0% of net sales for 2016, a decrease of $8,979 or 1.0%. The decrease in domestic sales was due to a $127,200 decline in pellet plant related

sales due to no new orders being received in 2017, offset by increases in sales of most of the Company's other major product lines due to the continuing positive economic conditions in the domestic markets and the impact of the FAST Act funding.

International sales for 2017 were $252,445 or 21.3% of net sales compared to $206,158 or 18.0% of net sales for 2016, an increase of $46,287 or 22.5%. The Company experienced improved markets for most of its major product lines internationally in 2017 compared to 2016 caused by improved global market conditions, the stabilization of the U.S. dollar in certain foreign markets and a slight recovery in the mining and oil and gas sectors. The Company believes its strategy of keeping its sales and service structure in place during the recent downturn aided international sales in 2017. Sales reported by the Company for 2017 would have been $2,884 lower had 2017 foreign exchange rates been the same as 2016 rates. The increase in international sales occurred primarily in Canada, Russia, Australia, Brazil and Africa, offset by sales decline in South America (excluding Brazil), Japan and Mexico. The Company continues its efforts to grow its international business by increasing its presence in the markets it serves.

Parts sales for 2017 were $283,361 or 23.9% of net sales compared to $263,457 or 23.0% of net sales for 2016, an increase of $19,904 or 7.6%. All of the Company's major product lines experienced increased parts sales in 2017 as compared to 2016.

Gross Profit
Gross profit for 2017 was $243,129 or 20.5% of net sales as compared to $265,269 or 23.1% of net sales in 2016, a decline of $22,140 or 8.3%. Due to cost overruns incurred in 2017 by the Company on the installation phase of its customer's Arkansas wood pellet plant sold in 2016 and the identification of design issues its customers' wood pellet plants in Arkansas and Georgia discovered in the third quarter of 2017, the Company experienced an overall reduction in wood pellet plant margins of $60,107 between years. As the Company has financed the sale of the $60,249 Georgia wood pellet plant, revenue from the sale will be recorded when the customer pays for the equipment, which is expected in late 2018. No significant margins are expected to be recorded on the Georgia pellet plant in 2018.

Selling, General and Administrative Expense
Selling, general and administrative expense for 2017 was $160,775 or 13.6% of net sales compared to $153,145 or 13.3% of net sales for 2016, an increase of $7,630 or 5.0% due to an increase of $8,646 in selling expenses resulting primarily from increased ConExpo Show-related costs of $4,355 and other increased costs related to the $164,508 increase in total sales excluding wood pellet plants.

Research and Development
Research and development expenses increased $1,848 or 7.4% to $26,817 in 2017 from $24,969 in 2016. During 2017, the Company continued its focus on research and development spending for new products as well as improvements to existing product lines and adaptation of those products to other markets.

Interest Expense
Interest expense in 2017 decreased $555 or 39.8%, to $840 from $1,395 in 2016 due to a reduction in debt levels at the Company's subsidiary in Brazil and reduced interest on tax return audit assessments.

Interest Income
Interest income increased $496 or 61.5% to $1,302 in 2017 from $806 in 2016 due primarily to interest received in 2017 from a wood pellet plant customer.

Other Income
Other income increased $689 or 130.2% to $1,218 in 2017 from $529 in 2016 due primarily to a $347 deposit forfeited by a customer on a cancelled order, reduced investment losses of $180 and improved licensing fee income of $105.

Income Tax
Income tax expense for 2017 was $19,627, compared to $32,107 for 2016. The effective tax rates for 2017 and 2016 were 34.3% and 36.9%, respectively. The reduction in tax rates between periods is due primarily to an increase in the percent impact of the Company's Domestic Production Activities Deduction and Research and Development Tax Credit (due to similar dollar impacts on lower taxable earnings) and a $1,056 reduction in income tax expense in the fourth quarter of 2017 due to the application of the provisions of Tax Cuts and Jobs Act of 2017, enacted by the U.S. government on December 22, 2017.

Net Income Attributable To Controlling Interest
The Company had net income attributable to controlling interest of $37,795 in 2017 compared to $55,159 in 2016, a decrease of $17,364, or 31.5%. Earnings per diluted share decreased $0.75 to $1.63 in 2017 from $2.38 in 2016. Weighted average diluted shares outstanding for the years ended December 31, 2017 and 2016 were 23,184 and 23,142, respectively.

Backlog
The backlog of orders at December 31, 2017 was $411,469 compared to $361,831 at December 31, 2016, an increase of $49,638, or 13.7%. Backlogs for both periods include a $60,249 pellet plant order the Company has financed for its customer. Revenue will not be recorded on the order until cash payments are received, which is expected to occur in late 2018. The increase in the backlog of orders was due to an increase in domestic backlog of $36,786 or 12.3% and an increase in international backlog of $12,852 or 20.5%. The Infrastructure Group backlog increased $7,271 or 3.1% from 2016. The Aggregate and Mining Group backlog increased $28,036 or 31.5% from 2016 while the backlog in the Energy Group increased $14,331 or 35.2% over the 2016 levels. The Company is unable to determine whether the changes in backlogs were experienced by the industry as a whole.

Net Sales by Segment

	2017	2016	$ Change	% Change
Infrastructure Group	$ 553,691	$ 608,908	$ (55,217)	(9.1)%
Aggregate and Mining Group	403,720	359,760	43,960	12.2%
Energy Group	227,328	178,763	48,565	27.2%

Infrastructure Group: Sales in this group decreased $55,217 or 9.1%. Excluding a $127,200 decrease in wood pellet plant sales, the group's sales increased $71,983 in 2017 as compared to 2016. Domestic sales for the Infrastructure Group decreased $80,666 or 14.7% in 2017 compared to 2016. The decrease in domestic sales was due to a $127,200 decline in pellet plant related sales due to no new orders being received in 2017, offset by increases in sales of most other major product lines due to the continuing positive economic conditions in the domestic markets and the impact of the FAST Act funding. International sales for the Infrastructure Group increased $25,449 or 41.3% in 2017 compared to 2016. The increase in international sales was due primarily to the improved sales of mobile asphalt equipment and increased sales by the Company owned distributor in Australia. The increase in international sales for the Infrastructure Group occurred mainly in Canada, Australia and Russia, offset by a decrease in sales in South America and Japan. Parts sales for the Infrastructure Group increased 3.7% in 2017 compared to 2016.

Aggregate and Mining Group: Sales in this group increased $43,960 or 12.2%. Domestic sales for the Aggregate and Mining Group increased $32,206 or 13.1% in 2017 compared to 2016 primarily due to improved sales into the Company's traditional rock quarry markets, increased sales of the Company's larger aggregate equipment due to the release of pent-up demand and increased sales by the Company's Northern Ireland subsidiary in the U.S. domestic market. International sales for the Aggregate and Mining Group increased $11,754 or 10.3% in 2017 compared to 2016. The increase in international sales is due to an easing of pent-up demand, the Company's continued sales efforts in the international markets and improved sales by the Company's Brazilian subsidiary. The increase in international sales for the Aggregate and Mining Group occurred primarily in Canada, Brazil, Australia, Asia and Africa, offset by sales declines in Mexico, Japan and South America. Parts sales for the Aggregate and Mining Group increased 7.9% in 2017 compared to 2016 due to improved sales by the Company's South African subsidiary and sales into the traditional rock quarry markets.

Energy Group: Sales in this group increased $48,565 or 27.2%. Domestic sales for the Energy Group increased $39,482 or 26.6% in 2017 compared to 2016 due to an increase in sales of $14,739 by Power Flame, which was acquired on August 1, 2016, and improved sales of wood chipping and grinding equipment, drilling rigs and oil and gas pumpers. RexCon, Inc., which was acquired on October 1, 2017, also contributed $2,449 of domestic sales in 2017. International sales for the Energy Group increased $9,083 or 30.0% in 2017 compared to 2016. The increase in international sales was due primarily to increased sales by Power Flame of $3,287 and increased sales of oil and gas drilling rigs. The increase in international sales occurred in Canada, Africa, China, Brazil and the Middle East, offset by decreased sales in South America (excluding Brazil). Parts sales for the Energy Group increased 19.6% in 2017 compared to 2016 due to increased sales in all major product lines.

Segment Profit (Loss)

	2017	2016	$ Change	% Change
Infrastructure Group	$ 26,641	$ 71,482	$ (44,841)	(62.7)%
Aggregate and Mining Group	35,748	34,877	871	2.5%
Energy Group	16,219	4,145	12,074	291.3%
Corporate	(40,963)	(55,992)	15,029	26.8%

Infrastructure Group: Profit for this group decreased $44,841 or 62.7% from 2016. This group's profits were impacted by a decrease in gross profit of $42,821 or 550 basis points. Due to cost overruns incurred by the Company in 2017 on the installation phase of its customer's Arkansas wood pellet plant sold in 2016 and the identification of design issues its customers' wood pellet plants in Arkansas and Georgia discovered in the third quarter of 2017, the Company experienced an overall reduction in wood pellet plant margins of $60,107 between years. As the Company has financed the sale of the Georgia wood pellet plant, revenue from the sale will be recorded when the customer pays for the equipment, which is expected in late 2018. No significant margins are expected to be recorded on the Georgia pellet plant in 2018. Segment profits were also negatively impacted by a $3,448 increase in selling expenses, including $1,986 related to the ConExpo Show and other cost increases related to the $71,983 increase in group sales, excluding wood pellet plants. Research and development costs also increased by $1,475 between periods.

Aggregate and Mining Group: Profit for this group increased $871 or 2.5% from 2016. This group's profits were impacted by an increase in gross profit of $2,440 on increased sales of $43,960, offset by a 220 basis point decrease in gross margin due to intercompany profit eliminations, product mix considerations and reduced margins at the Company's Northern Ireland subsidiary. The group's profits were also negatively impacted by increased ConExpo Show costs of $1,842.

Energy Group: Profit for this group increased $12,074 or 291.3% from 2016. This group's profits were impacted by an increase in gross profit of $17,954 on increased sales of $48,565 and a 330 basis point increase in gross margins. Margins were favorably impacted by significant improvements at the Company's GEFCO subsidiary, due to a 64% increase in sales, and by the addition of Power Flame, which was acquired on August 1, 2016. The group's profits were negatively impacted by a $5,540 increase in selling, general and administrative expenses, of which $3,280 relates to additional costs incurred by Power Flame and RexCon, which were acquired in 2016 and 2017, respectively.

Corporate: Net corporate expenses decreased $15,029 from 2016 due to decreases in profit sharing and SERP expenses of $5,031 and decreased income taxes of $10,617.

Results of Operations: 2016 vs. 2015

Net Sales

Net sales increased $164,274 or 16.7% to $1,147,431 in 2016 from $983,157 in 2015. Sales are generated primarily from new equipment purchases made by customers for use in construction of privately funded infrastructure, public sector spending on infrastructure and sales of equipment for the aggregate, mining, wood pellet, quarrying and recycling markets, and for oil and gas and geothermal industries.

Domestic sales for 2016 were $941,273 or 82.0% of net sales compared to $722,287 or 73.5% of net sales for 2015, an increase of $218,985 or 30.3%. The overall increase in domestic sales for 2016 compared to 2015 reflects the strengthening economic conditions for the Company's products in the domestic market and a $135,187 increase in wood pellet plant sales between years.

International sales for 2016 were $206,158 or 18.0% of net sales compared to $260,870 or 26.5% of net sales for 2015, a decrease of $54,711 or 21.0%. The Company continued to experience a challenging market for its products internationally in 2016 compared to 2015 caused by competitive pressures due to the strengthening of the U.S. dollar, as we compete with local manufacturers that do not price their products based on the U.S. dollar and the continued sluggishness in the global mining industry. Sales reported by the Company for 2016 would have been $10,148 higher had 2016 foreign exchange rates been the same as 2015 rates. The Company continues its efforts to grow its international business by increasing its presence in the markets it serves.

Parts sales as a percentage of net sales decreased 400 basis points to 23.0% in 2016 from 27.0% in 2015. Parts sales decreased 0.6% to $263,457 in 2016 from $265,092 in 2015.

Gross Profit
Gross profit as a percentage of sales increased to 23.1% in 2016 as compared to 22.3% in 2015. Gross profit increased 21.2% to $265,269 in 2016 from $218,843 in 2015. Gross margins increased in 2016 due to a release of pent-up demand from the lack of a long-term federal highway bill, which led to increased margins in the Infrastructure Group as well as margins recorded for wood pellet plant sales by the Company.

Selling, General and Administrative Expense
Selling, general and administrative expense for 2016 was $153,145 or 13.3% of net sales compared to $145,180 or 14.8% of net sales for 2015, an increase of $7,965 or 5.5%. The increase in selling, general and administrative expense over 2015 was due to an increase in payroll and related expense of $6,263 and an increase of $7,640 in profit sharing and SERP expenses, offset by a reduction in the cost of repairs and maintenance, primarily on Company airplanes of $3,001, a decrease in consultant fees of $789 and a decrease in computer expenses of $874.

Research and Development
Research and development expenses increased $1,293 or 5.5% to $24,969 in 2016 from $23,676 in 2015. During 2016, the Company continued its focus on research and development spending for new products as well as improvements to existing product lines and adaptation of those products to other markets. The Company will introduce many of its new products at the ConExpo Show to be held in March 2017.

Interest Expense
Interest expense in 2016 decreased $216 or 13.4%, to $1,395 from $1,611 in 2015.

Interest Income
Interest income increased $264 or 48.7% to $806 in 2016 from $542 in 2015.

Other Income
Other income was $529 in 2016 compared to $3,055 in 2015, a decrease of $2,526 or 82.7% due to $1,204 of income from key-man life insurance policies received in 2015 resulting from the death of the Company's Chairman (and former CEO) and the forfeiture of a customer deposit of $1,002 in 2015 on a cancelled order.

Income Tax
Income tax expense for 2016 was $32,107, compared to $20,007 for 2015. The effective tax rates for 2016 and 2015 were 36.9% and 38.5%, respectively. The effective tax rate decreased in 2016 from the 2015 effective tax rate due to an increase in domestic tax credits for research and development expenditures, a decrease in the overall effective state rate caused by changes in apportionment and statutory state rates and a reduced impact of valuation allowances on deferred tax assets.

Net Income Attributable To Controlling Interest
The Company had net income attributable to controlling interest of $55,159 in 2016 compared to $32,797 in 2015, an increase of $22,362, or 68.2%. Earnings per diluted share increased $0.96 to $2.38 in 2016 from $1.42 in 2015. Weighted average diluted shares outstanding for the years ended December 31, 2016 and 2015 were 23,142 and 23,120, respectively.

Backlog
The backlog of orders at December 31, 2016 was $357,367 compared to $315,910 at December 31, 2015, an increase of $41,457, or 13.1%. The increase in the backlog of orders was due to an increase in domestic backlog of $33,006 or 12.6% and an increase in international backlog of $8,451 or 15.6%. The Infrastructure Group backlog increased $28,394 or 13.9% from 2015. The Infrastructure Group backlog includes $60,249 in both 2016 and 2015 for the first three-line pellet plant order from a single customer under a Company financed arrangement whereby the Company expects to record the related revenues in 2018 when payment is due to be received. The Infrastructure Group believes the FAST Act federal highway funding bill passed in late 2015, continues to positively impact order backlogs of the group. The Aggregate and Mining Group backlog increased $14,467 or 19.5% from 2015 while the backlog in the Energy Group decreased $1,404 or 3.7% over the 2015 levels. Both the Aggregate and Mining Group and the Energy Group continue to be negatively impacted by competitive pricing issues in many foreign countries due to the strength of the U.S. dollar compared to foreign currencies, and reduced demand for equipment in the mining and oil and gas industries. The Company is unable to determine whether the changes in backlogs were experienced by the industry as a whole.

MANAGEMENT'S DISCUSSION AND ANALYSIS (CONTINUED)

Net Sales by Segment

	2016	2015	$ Change	% Change
Infrastructure Group	$ 608,908	$ 428,737	$ 180,171	42.0%
Aggregate and Mining Group	359,760	370,813	(11,053)	(3.0)%
Energy Group	178,763	183,607	(4,844)	(2.6)%

Infrastructure Group: Sales in this group increased $180,171 or 42.0%. Domestic sales for the Infrastructure Group increased 55.2% in 2016 compared to 2015 due to a release of some of the pent-up demand from the lack of a long-term federal highway bill for most of 2015 and increased pellet plant sales of $135,187. International sales for the Infrastructure Group decreased 19.2% in 2016 compared to 2015. The decrease in international sales was due primarily to the strengthening of the U.S. dollar compared to the currencies in many of the countries in which the Company operates. The decrease in international sales for the Infrastructure Group occurred mainly in Canada, Europe, the Middle East, Post-Soviet States, South America and Asia, offset by an increase in sales in the Mexico, Japan, Australia, West Indies, China and Central America. Parts sales for the Infrastructure Group increased 5.7% in 2016 compared to 2015. The Company believes the increase in parts sales from 2015 to 2016 was due to the impact of the FAST Act federal highway bill passed in late 2015. The Company also believes a portion of the increase in parts sales was attributed to sales of replacement parts for our competitors' equipment.

Aggregate and Mining Group: Sales in this group decreased $11,053 or 3.0%. Domestic sales for the Aggregate and Mining Group increased 6.3% in 2016 compared to 2015 primarily due to improved demand related to infrastructure projects. International sales for the Aggregate and Mining Group decreased 18.3% in 2016 compared to 2015. The decrease in international sales is due to the strength of the U.S. dollar compared to the currencies in many of the countries in which the Company operates and the continuing slowdown in the mining industry. The decrease in international sales for the Aggregate and Mining Group occurred primarily in Africa, the Middle East, Canada, Brazil, Russia and India, offset by increases in Mexico, Japan, Europe and Asia. Sales reported by the Company's foreign subsidiaries in this group would have been $10,134 higher had foreign exchange rates for 2016 been the same as 2015 rates. Parts sales for the Aggregate and Mining Group decreased 6.4% in 2016 compared to 2015.

Energy Group: Sales in this group decreased $4,844 or 2.6%. Sales in this group were positively affected by the purchase of Power Flame Incorporated (PFI), located in Parsons, Kansas in August 2016. PFI manufactures and sells gas, oil and combination gas/oil and low NOx burners as well as combustion control systems designed for commercial, industrial and process applications. Without the purchase of PFI, sales would have decreased 10% from 2015 to 2016. Domestic sales for the Energy Group increased 6.9% in 2016 compared to 2015. International sales for the Energy Group decreased 32.3% in 2016 compared to 2015. The decrease in international sales was due primarily to the continued strength of the U.S. dollar in 2016 and a continued reduction in oil production and exploration brought on by the low oil prices. The decrease in international sales occurred in Russia, the Middle East, Australia, Asia, Africa and Brazil, offset by increased sales in Japan and China. Parts sales for the Energy Group decreased 4.8% in 2016 compared to 2015.

Segment Profit (Loss)

	2016	2015	$ Change	% Change
Infrastructure Group	$ 71,482	$ 33,890	$ 37,592	110.9%
Aggregate and Mining Group	34,877	30,690	4,187	13.6%
Energy Group	4,145	3,609	536	14.9%
Corporate	(55,992)	(36,623)	(19,369)	(52.9)%

Infrastructure Group: Profit for this group increased $37,592 or 110.9% from 2015. This group's profits were impacted by an increase in gross profit of $42,884 or 60 basis points on increased sales of $180,171 partially due to increased overhead absorption on a 20% increase in direct labor hours worked from 2015 to 2016, offset by an increase in payroll and related expenses of $5,692.

Aggregate and Mining Group: Profit for this group increased $4,187 or 13.6% from 2015. This group's profits were impacted by an increase in gross profit of $1,851 on decreased sales of $11,053 due to a 130 basis point increase in gross margin and decreases in payroll and related expense of $1,329, decreased travel expense of $786 and a $528 decrease in repairs and maintenance expense, primarily on a company airplane.

Energy Group: Profit for this group increased $536 or 14.9% from 2015. This group's profits were impacted by an increase in gross profit of $2,077 on decreased sales of $4,844 due to a 170 basis point increase in gross margin and decreased outside service expense of $741, repairs and maintenance of $346 and computer expense of $235.

Corporate: Net corporate expenses increased $19,369 from 2015 due to increases in profit sharing and SERP expense of $7,640, stock incentive expense of $1,376, and increased income taxes of $9,826.

Liquidity and Capital Resources

The Company's primary sources of liquidity and capital resources are its cash on hand, borrowing capacity under a $100,000 revolving credit facility with a lender and cash flows from operations. The Company had $62,280 (of which $22,064 was held by our foreign subsidiaries) of cash available for operating purposes at December 31, 2017. The Company had outstanding letters of credit of $9,757 and borrowing availability of $90,243 under the credit facility as of December 31, 2017. The Company had no outstanding borrowings at any time during 2017 under this facility. Borrowings under the Company's credit agreement are subject to an interest rate equal to the daily one-month LIBOR rate plus a 0.75% margin, resulting in a rate of 2.32% at December 31, 2017. The credit agreement contains certain financial covenants, including provisions concerning required levels of annual net income, minimum tangible net worth and maximum allowed capital expenditures. The Company was in compliance with these covenants as of December 31, 2017.

The Company's South African subsidiary, Osborn Engineered Products SA (Pty) Ltd ("Osborn"), has a credit facility of $7,672 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 December 31, 2017, Osborn had no outstanding borrowings, but had $813 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 December 31, 2017, Osborn had available credit under the facility of $6,859. The interest rate is 0.25% less than the South Africa prime rate, resulting in a rate of 10.0% as of December 31, 2017.

The Company's Brazilian subsidiary, Astec do Brasil Fabricacao de Equipamentos Ltda. ("Astec Brazil"), has outstanding working capital loans totaling $3,402 from Brazilian banks with interest rates ranging from 10.4% to 11.0%. The loans' maturity dates range from November 2018 to April 2024 and are secured by Astec Brazil's manufacturing facility and also by letters of credit totaling $3,200 issued by Astec Industries, Inc. Additionally, Astec Brazil has various 5-year equipment financing loans outstanding with Brazilian banks in the aggregate of $642 as of December 31, 2017 that have interest rates ranging from 3.5% to 16.3%. These equipment loans have maturity dates ranging from September 2018 to April 2020. Astec Brazil reduced its outstanding debt by $2,610 during 2017 and plans to further reduce it by $2,469 during 2018.

Cash Flows from Operating Activities

	2017	2016	Increase / Decrease
Net income	$ 37,590	$ 54,988	$ (17,398)
Depreciation and amortization	25,802	24,813	989
Provision for warranties	16,725	18,912	(2,187)
Deferred income tax benefits	(291)	(3,521)	3,230
Increase in receivables	(7,749)	(4,895)	(2,854)
(Increase) decrease in inventories	(19,618)	30,839	(50,457)
(Increase) decrease in prepaid expenses	(5,181)	4,846	(10,027)
Increase in accounts payable	630	8,836	(8,206)
Increase (decrease) in customer deposits	9,379	(762)	10,141
Decrease in accrued product warranties	(14,642)	(15,125)	483
Other, net	(764)	15,875	(16,639)
Net cash provided by operating activities	$ 41,881	$ 134,806	$ (92,925)

Net cash provided by operating activities decreased $92,925 in 2017 compared to 2016. The primary reasons for the decrease in operating cash flows relate to increased inventories due to increased order volumes, reduced net income, increased prepaid expenses and reduced accounts payable offset by cash provided by customer deposits.

Cash Flows from Investing Activities

	2017	2016	Increase / Decrease
Expenditures for property and equipment	$ (20,046)	$ (27,367)	$ 7,321
Business acquisition, net of cash acquired	(26,443)	(39,764)	13,321
Other	(411)	904	(1,315)
Net cash used by investing activities	$ (46,900)	$ (66,227)	$ 19,327

Net cash used by investing activities decreased by $19,327 in 2017 compared to 2016 due primarily to the reductions in cash used for business acquisitions and expenditures for property and equipment.

Cash Flows from Financing Activities

	2017	2016	Increase / Decrease
Payment of dividends	$ (9,226)	$ (9,217)	$ (9)
Borrowings under bank loans	--	5,973	(5,973)
Repayments of bank loans	(7,242)	(5,903)	(1,339)
Other, net	(324)	(1,873)	1,549
Net cash used by financing activities	$ (16,792)	$ (11,020)	$ (5,772)

Financing activities used cash of $16,792 in 2017 and $11,020 in 2016 for an increase of $5,772. The change is primarily due to reduced borrowings and increased debt repayments by the Company's Brazilian and South African subsidiaries.

Approved capital expenditures for 2018 total $35,398, including facility additions at the Company's Roadtec and Carlson subsidiaries. The remaining approved capital expenditures are for various purchases of machinery and equipment, automobiles and technology related spending to meet the needs across all Company subsidiaries. The Company expects to finance these expenditures using currently available cash balances, internally generated funds and available credit under the Company's credit facility.

Financial Condition

The Company's current assets increased to $602,969 at December 31, 2017 from $576,833 at December 31, 2016, an increase of $26,136. The increase is due to increases in inventories of $30,975 and accounts receivable of $9,279 due to increased order and sales volumes, offset by decreases in cash and cash equivalents of $20,091. Additionally, accounts receivable days outstanding increased from 30.5 in 2016 to 34.3 in 2017.

The Company's current liabilities increased to $179,146 at December 31, 2017 from $168,861 at December 31, 2016, an increase of $10,285. The increase is primarily due to increases in customer deposits of $10,279 and accounts payable of $3,120.

Market Risk and Risk Management Policies

The Company is exposed to changes in interest rates, primarily from its revolving credit agreements. A hypothetical 100 basis point adverse move (increase) in interest rates would not have materially affected interest expense for the years ended December 31, 2017 and 2016, due to minimal borrowings during the periods. The Company does not hedge variable interest.

The Company is subject to foreign exchange risk at its foreign operations. Foreign operations represent 15.9% and 15.8% of total assets at December 31, 2017 and 2016, respectively, and 10.8% and 9.5% of total net sales for the years ended December 31, 2017 and 2016, respectively. Each period, the balance sheets and related results of operations of the Company's foreign subsidiaries are translated from their functional foreign currency into U.S. dollars for reporting purposes. As the U.S. dollar strengthens against those foreign currencies, the foreign denominated net assets and operating results become less valuable in the Company's reporting currency. When the U.S. dollar weakens against those currencies, the foreign denominated net assets and operating results become more valuable in the Company's reporting currency. At each reporting date, the fluctuation in the value of the net assets and operating results due to foreign exchange rate changes is recorded as an adjustment to other comprehensive income (loss) in equity. The Company views its investments in foreign subsidiaries as long-term and does not hedge the net investments in foreign subsidiaries.

MANAGEMENT'S DISCUSSION AND ANALYSIS (CONTINUED)

From time to time, the Company's foreign subsidiaries enter into transactions not denominated in their functional currency. In these situations, the Company evaluates the need to hedge those transactions against foreign currency rate fluctuations. When the Company determines a need to hedge a transaction, the subsidiary enters into a foreign currency exchange contract. The Company does not apply hedge accounting to these contracts and, therefore, recognizes the fair value of these contracts in the consolidated balance sheets and the change in the fair value of the contracts in current earnings.

Due to the limited exposure to foreign exchange rate risk, a 10% fluctuation in the foreign exchange rates at December 31, 2017 or 2016 would not have a material impact on the Company's consolidated financial statements.

Contractual Obligations

Contractual obligations and the period in which payments are due as of December 31, 2017 are as follows:

	Payments Due by Period				
Contractual Obligations	**Total**	**Less Than 1 Year**	**Years 2 to 3**	**Years 4 to 5**	**More Than 5 Years**
Operating lease obligations	$ 6,263	$ 2,146	$ 2,971	$ 913	$ 233
Inventory purchase obligations	3,951	3,951	--	--	--
Debt obligations	4,044	2,469	980	502	93
Total	$ 14,258	$ 8,566	$ 3,951	$ 1,415	$ 326

The above table excludes the Company's liability for unrecognized tax benefits, which totaled $365 at December 31, 2017, since the timing of cash settlements to the respective taxing authorities cannot be reliably predicted.

In 2017 and 2016, the Company made contributions of approximately $415 to its pension plan. The Company has no planned contributions to the pension plan in 2018. The Company's funding policy is to make at least the minimum annual contributions required by applicable regulations.

Contingencies

Management has reviewed all claims and lawsuits and has made adequate provision for any losses that can be reasonably estimated. 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.

Certain customers have financed purchases of the Company's products through arrangements in which the Company is contingently liable for customer debt aggregating $3,805 at December 31, 2017. These obligations have average remaining terms of 1.8 years. The Company has recorded a liability of $836 related to these guarantees at December 31, 2017.

The Company is contingently liable under letters of credit of approximately $13,314, primarily for performance guarantees to customers, banks or insurance carriers.

The Company has a sales contract with the purchaser of a large wood pellet plant, on which revenues of $7,987 and $135,187 were recorded in 2017 and 2016, respectively. As the plant has not yet met the production output and the operational specifications set forth in the original contract, as amended through December 31, 2017, the Company entered into a contract amendment in February 2018, whereby the Company agreed to compensate the customer for production shortfalls caused by the Company and other potential costs (depending upon the market price of wood pellets), from January 1, 2018 through June 15, 2018. The Company incurred production shortfalls in January and February 2018. The Company expects to meet the contract's operational specifications prior to June 15, 2018.

Off-balance Sheet Arrangements

As of December 31, 2017, the Company does not have off-balance sheet arrangements as defined by Item 303(a)(4) of Regulation S-K.

Critical Accounting Policies and Estimates

The Company's consolidated financial statements are prepared in accordance with U.S. generally accepted accounting principles. Application of these principles requires the Company to make estimates and judgments that affect the amounts as reported in the consolidated financial statements. Accounting policies that are critical to aid in understanding and evaluating the results of operations and financial position of the Company include the following:

Inventory Valuation: Inventories are valued at the lower of first-in first-out cost or net realizable value. The most significant component of the Company's inventories is steel. Open market prices, which are subject to volatility, determine the cost of steel for the Company. During periods when open market prices decline, the Company may need to reduce the carrying value of the inventory. In addition, certain items in inventory become obsolete over time, and the Company reduces the carrying value of these items to their net realizable value. These reductions are determined by the Company based on estimates, assumptions and judgments made from the information available at that time. See Note 1, Summary of Significant Accounting Policies, for a description of the process used by the Company to value inventories at the lower of first-in first-out cost or market. The Company does not believe it is reasonably likely that the inventory values will materially change in the near future.

Product Warranty Reserve: The Company accrues for the estimated cost of product warranties at the time revenue is recognized. Warranty obligations by product line or model are evaluated based on historical warranty claims experience. For machines, the Company's standard product warranty terms generally include post-sales support and repairs of products at no additional charge for periods ranging from three months to two years or up to a specified number of hours of operation. For parts from component suppliers, the Company relies on the original manufacturer's warranty that accompanies those parts. Generally, fabricated parts are not covered by specific warranty terms. Although failure of fabricated parts due to material or workmanship is rare, if it occurs, the Company's policy is to replace fabricated parts at no additional charge.

The Company engages in extensive product quality programs and processes, including actively monitoring and evaluating the quality of component suppliers. Estimated warranty obligations are based upon warranty terms, product failure rates, repair costs and current period machine shipments. If actual product failure rates, repair costs, service delivery costs or post-sales support costs differ from estimates, revisions to the estimated warranty liability would be required. The Company does not believe it is reasonably likely that the warranty reserve will materially change in the near future.

Revenue Recognition: Revenue is generally recognized on sales at the point in time when persuasive evidence of an arrangement exists, the price is fixed or determinable, the product has been delivered or services have been rendered and there is reasonable assurance of collection of the sales proceeds. The Company generally obtains purchase authorizations from its customers for a specified amount of product at a specified price with specified delivery terms. A significant portion of the Company's equipment sales represents equipment produced in the Company's plants under short-term contracts for a specific customer project or equipment designed to meet a customer's specific requirements. Most of the equipment sold by the Company is based on standard configurations, some of which are modified to meet customer needs or specifications. The Company provides customers with technical design and performance specifications and performs pre-shipment testing to ensure the equipment performs according to design specifications, regardless of whether the Company provides installation services in addition to selling the equipment.

Certain contracts include terms and conditions through which the Company recognizes revenues upon completion of equipment production, which 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 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.

The Company has certain sales accounted for as multiple-element arrangements, whereby revenue attributable to the sale of a product is recognized when the product is shipped, and the revenue attributable to services provided with respect to the product (such as installation services) is recognized when the service is performed. Consideration is allocated to deliverables using the relative selling price method and vendor specific objective evidence, if it exists. Otherwise, the Company uses third-party evidence of selling price or the Company's best estimate of the selling price for the deliverables. The Company evaluates sales with multiple deliverable elements (such as an agreement to deliver equipment and related installation services) to determine whether revenue related to individual elements should be recognized separately, or as a combined unit. In addition to the previously mentioned general revenue recognition criteria, the Company only recognizes revenue on individual delivered elements when there is objective and reliable evidence that the delivered element has a determinable value to the customer on a standalone basis and there is no right of return.

The Company has certain sales accounted for under the percentage of completion method using the ratio of costs incurred to estimated total costs. Revenue, in an amount equal to cost incurred, is recognized until there is sufficient information to determine the estimated profit on the project with a reasonable level of certainty. The factors considered in this evaluation include the stage of design completion, the stage of equipment manufacturing completion, the state of construction completion, the status of outstanding subcontracts, certainty of quantities of labor and materials, certainty of schedule and the relationship with the customer.

Goodwill and Other Intangible Assets: Intangible assets are classified into two categories: (1) intangible assets with definite lives subject to amortization, and (2) goodwill. Intangible assets with definite lives are tested for impairment if conditions exist that indicate the carrying value may not be recoverable. Risk factors that may be considered include an economic downturn in the general economy, a geographic market or the commercial and residential construction industries, a change in the assessment of future operations as well as the cyclical nature of our industry and the customization of the equipment we sell, each of which may cause adverse fluctuations in operating results. Other risk factors considered would be an increase in the price or a decrease in the availability of oil that could reduce the demand for our products in addition to the significant fluctuations in the purchase price of raw materials that could have a negative impact on the cost of production and gross margins as well as others more fully described in the Risk Factors section of our Form 10-K. An impairment charge is recorded when the carrying value of the definite lived intangible asset is not recoverable by the cash flows generated from the use of the asset. Some of the inputs used in the impairment testing are highly subjective and are affected by changes in business factors and other conditions. Changes in any of the inputs could have an effect on future tests and result in impairment charges.

Goodwill is not amortized but is tested for impairment annually or more frequently if events or circumstances indicate that such intangible assets or goodwill might be impaired. See Note 1, Summary of Significant Accounting Policies, for a description of testing performed by the Company to determine if the recorded value of intangible assets or goodwill has been impaired.

The useful lives of identifiable intangible assets are determined after considering the specific facts and circumstances related to each intangible asset. Factors considered when determining useful lives include the contractual term of any agreement, the history of the asset, the Company's long-term strategy for the use of the asset, any laws or other local regulations which could impact the useful life of the asset, and other economic factors, including competition and specific market conditions. Intangible assets that are deemed to have definite lives are amortized, generally on a straight-line basis, over their useful lives, ranging from 5 to 19 years.

Income Taxes: The Company accounts for income taxes under the guidance of FASB Accounting Standards Codification Topic 740-10, "Income Taxes". Deferred tax assets and liabilities are recognized for the future tax consequences attributable to differences between financial statement carrying amounts of existing assets and liabilities and their respective tax bases and operating loss and tax credit carryforwards. Deferred tax assets and liabilities are measured using enacted tax rates expected to apply to taxable income in the years in which those temporary differences are expected to be recovered or settled. A valuation allowance, that represents a reserve on deferred tax assets for which utilization is not more likely than not, is recorded. Judgment is required in determining the provision for income taxes, deferred tax assets and liabilities and the valuation allowance recorded against net deferred tax assets. Income tax contingency accruals are determined and recorded under the guidance of ASC Topic 740-10. Liabilities for uncertain income tax positions are based on a two-step process. The first step is to evaluate the tax position for recognition by determining if the weight of available evidence indicates that it is more likely than not that the position will be sustained on audit, including resolution of related appeals or litigation processes, if any. The second step requires an estimate and measurement of the tax benefit as the largest amount that is more than 50% likely to be realized upon ultimate settlement. It is inherently difficult and subjective to estimate such amounts, as the Company must determine the probability of various possible outcomes. We reevaluate these uncertain tax positions on a quarterly basis or when new information becomes available. These reevaluations are based on factors including, but not limited to, changes in facts or circumstances, changes in tax law, successfully settled issues under audit, expirations due to statutes, and new audit activity. Such a change in recognition or measurement could result in the recognition of a tax benefit or an increase to accrued taxes.

U.S. Tax Reform: On December 22, 2017, the Tax Cuts and Jobs Act of 2017 (the "Tax Act") was signed into law making significant changes to the Internal Revenue Code. Changes include, but are not limited to, a federal corporate tax rate decrease from 35% to 21% for tax years beginning after December 31, 2017, the transition of U.S international taxation from a worldwide tax system to a territorial system and a one-time transition tax on the mandatory deemed repatriation of foreign earnings. The Company's fourth quarter 2017 provision for income taxes was reduced by $1,056, (comprised of a $1,548 reduction in income tax expense recorded in connection with the remeasurement of deferred tax assets and liabilities and $492 of additional income tax expense recorded in connection with the transition tax on the mandatory deemed repatriation of foreign earnings) due to applying the provisions of the Tax Act.

On December 22, 2017, Staff Accounting Bulletin No. 118 ("SAB 118") was issued to address the application of U.S. GAAP in situations when a registrant does not have the necessary information available, prepared, or analyzed (including computations) in reasonable detail to complete the accounting for certain income tax effects of the Tax Act. In accordance with SAB 118, the Company determined that the $492 additional 2017 income tax expense discussed above is a provisional amount and constitutes a reasonable estimate at December 31, 2017, based upon the best information currently available. The ultimate impact may differ from the provisional amount, possibly materially, due to, among other things, additional analysis, changes in interpretations and assumptions the Company has made, additional regulatory guidance that may be issued and actions the Company may take as a result of the Tax Act. Any subsequent adjustment to the amount will be recorded to current tax expense when the analysis is complete, which is expected in 2018 shortly after the filing of the Company's 2017 U.S. income tax return.

Beginning in 2018, the Company expects that its effective tax rate will be reduced by approximately 11% from its historic average due to the effects of the Tax Act, resulting in an effective tax rate ranging from 23% to 25% in a typical year. The primary drivers of this are the reduced U.S. federal tax rate and the elimination of the benefit for the domestic production activities deduction which is repealed by the Tax Act.

Recent Accounting Pronouncements

In May 2014, the Financial Accounting Standards Board ('FASB") issued Accounting Standards Update ("ASU") No. 2014-09, "Revenue from Contracts with Customers", which supersedes existing revenue guidance under U.S. GAAP. The standard's core principle is that a company will recognize revenue when it transfers promised goods or services to customers in an amount that reflects the consideration to which the company expects to be entitled in exchange for those goods or services. The implementation of this new standard will require companies to use more judgment and to make more estimates than under current guidance and to expand their disclosures to include information regarding contract assets and liabilities as well as a more disaggregated view of revenue. The standard, as amended, is effective for public companies for annual periods beginning after December 15, 2017. The Company adopted the new standard effective January 1, 2018 using the modified retrospective transition method and will expand its disclosures in the first quarter 2018 consolidated financial statements to comply with the disclosure provisions of the new rule. The Company does not expect the adoption of the standard to have a material impact on its financial position, results of operations or cash flows.

In January 2016, the FASB issued ASU No. 2016-01, "Financial Instruments-Overall (Subtopic 825-10)", which requires, among other things, equity investments with readily determinable fair values, except those accounted for under the equity method of accounting or those that result in consolidation of the investee, to be measured at fair value with changes in fair value recognized in net income. The standard is effective for public companies in fiscal years beginning after December 15, 2017, and the Company adopted the standard effective January 1, 2018. The Company does not expect the adoption of this standard to have a material impact on the Company's financial position, results of operations or cash flows.

In February 2016, the FASB issued ASU No. 2016-02, "Leases (Topic 842)", which significantly changes the accounting for operating leases by lessees. The accounting applied by lessors is largely unchanged from that applied under previous guidance. The new guidance requires lessees to recognize lease assets and lease liabilities in the balance sheet, initially measured at the present value of the lease payments, for leases which were classified as operating leases under previous guidance. Lease cost included in the statement of income will be calculated so that the cost of the lease is allocated over the lease term, generally on a straight-line basis. Lessees may make an accounting policy election to exclude leases with a term of 12 months or less from the requirement to record related assets and liabilities. The new standard is effective for public companies for fiscal years beginning after December 15, 2018. The Company plans to adopt the new standard effective January 1, 2019. The Company does not expect the adoption of this standard to have a material impact on its results of operations or cash flows; however, the Company has not determined the impact the adoption of this new standard will have on its financial position.

In March 2016, the FASB issued ASU No. 2016-08, "Revenue from Contracts with Customers (Topic 606)", which does not change the core principles of ASU No. 2014-09 discussed above, but rather clarifies the implementation guidance in order to eliminate the potential for diversity in practice arising from inconsistent application of the principal versus agent guidance. Under the new guidance, when an entity determines it is a principal in a transaction, the entity recognizes revenue in the gross amount of consideration; however in transactions where an entity determines it is an agent, the entity recognizes revenue in the amount of any fee or commission to which it expects to be entitled. The standard is effective for public companies for annual periods beginning after December 15, 2017. The Company adopted the new standard effective January 1, 2018. The Company does not expect the adoption of this standard to have a material impact on the Company's financial position, results of operations or cash flows.

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 will require

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 expects to adopt the new standard as of January 1, 2020. The Company has not yet determined what impact, if any, the adoption of this new standard will have on the Company's financial position, results of operations or cash flows.

In August 2016, the FASB issued ASU No. 2016-15, “Statement of Cash Flows (Topic 230), Classification of Certain Cash Receipts and Cash Payments (a consensus of the Emerging Issues Task Force)” which clarifies how certain cash receipts and cash payments should be presented on the statement of cash flows. The statement also addresses how the predominance principle should be applied when cash payments have aspects of more than one class of cash flows. The standard is effective for public companies in fiscal years beginning after December 15, 2017, and the Company adopted the standard effective January 1, 2018. The Company does not expect the adoption of this standard to have a material impact on the Company’s consolidated statement of cash flows.

In October 2016, the FASB issued ASU No. 2016-16, “Income Taxes (Topic 740), Intra-Entity Transfers of Assets Other Than Inventory” which requires companies to account for the income tax effects of intercompany sales and transfers of assets other than inventory, such as intangible assets, when the transfer occurs. This is a change from current guidance, which requires companies to defer the income tax effects of intercompany transfers of assets until the asset has been sold to an outside party or otherwise recognized by being depreciated, amortized, or impaired. The new guidance will require companies to defer the income tax effects of only intercompany transfers of inventory. The standard is effective for public companies in fiscal years beginning after December 15, 2017. The Company adopted the new standard effective January 1, 2018. The Company does not expect the adoption of this standard to have a material impact on the Company’s financial position, results of operations or cash flows.

In January 2017, the FASB issued ASU No. 2017-01, “Business Combinations (Topic 805), Clarifying the Definition of a Business,” which provides additional guidance to assist entities with evaluating whether transactions should be accounted for as acquisitions (or disposals) of assets or businesses. The standard is effective for public companies for annual or interim periods beginning after December 15, 2017. The Company adopted the new standard effective January 1, 2018. The Company does not expect the application of this standard to have a material impact on its financial position, results of operations or cash flows.

In January 2017, the FASB issued ASU No. 2017-04, “Intangibles-Goodwill and Other (Topic 350), Simplifying the Test for Goodwill Impairment,” which eliminates Step 2 from the goodwill impairment test for public companies. Previously, Step 2 measured a goodwill impairment loss by comparing the implied fair value of a reporting unit’s goodwill with the carrying amount of that goodwill. The new guidance stipulates that an entity should perform its annual or interim goodwill impairment test by comparing the fair value of a reporting unit with its carrying amount. An impairment charge would be recognized for the amount by which the carrying amount exceeds the reporting unit’s fair value, up to the amount of goodwill allocated to the reporting unit. The standard is effective for annual or interim goodwill impairment tests in fiscal years beginning after December 15, 2019 with early adoption permitted. The Company elected to adopt this standard as of December 31, 2017. The application of this standard did not have a material impact on the Company’s financial position, results of operations or cash flows.

In August 2017, the FASB issued ASU No. 2017-12, “Derivatives and Hedging (Topic 815), Targeted Improvements to Hedging Activities”, to improve the financial reporting of hedging relationships to better portray the economic results of an entity’s risk management activities in its financial statements. The new guidance is effective for public companies for fiscal years beginning after December 15, 2018 and interim periods within those fiscal years with early adoption permitted in any interim period after its issuance. The Company plans to adopt the new standard effective January 1, 2019. The Company does not expect the application of this standard to have a material impact on its financial position, results of operations or cash flows.

Forward-Looking Statements

This annual report 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 Annual Report that are not limited to historical information are considered forward-looking statements within the meaning of Section 21E of the Securities Exchange Act of 1934, including, without limitation, statements regarding:

- execution of the Company’s growth and operation strategy;
- plans for technological innovation;
- compliance with covenants in our credit facility;

- liquidity and capital expenditures;
- sufficiency of working capital, cash flows and available capacity under the Company's credit facilities;
- compliance with government regulations;
- compliance with manufacturing and delivery timetables;
- forecasting of results;
- general economic trends and political uncertainty;
- government funding and growth of highway construction and commercial projects;
- taxes or usage fees;
- interest rates;
- integration of acquisitions;
- industry trends;
- pricing, demand and availability of steel, oil and liquid asphalt;
- development of domestic oil and natural gas production;
- condition of the economy;
- strength of the U.S. dollar relative to foreign currencies;
- the success of new product lines;
- presence in the international marketplace;
- suitability of our current facilities;
- future payment of dividends;
- competition in our business segments;
- product liability and other claims;
- protection of proprietary technology;
- demand for products;
- future fillings of backlogs;
- employees;
- the seasonality of our business;
- tax assets and reserves for uncertain tax positions;
- critical accounting policies and the impact of accounting changes;
- our backlog;
- ability to satisfy contingencies;
- contributions to retirement plans and plan expenses;
- reserve levels for self-insured insurance plans and product warranties;
- construction of new manufacturing facilities;
- supply of raw materials;
- inventory;
- plans to reduce indebtedness at the Company's subsidiaries; and
- the Company's effective tax rate and other impacts of the Tax Cuts and Jobs Act of 2017

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. You can identify these statements by forward-looking words such as "expect", "believe", "anticipate", "goal", "plan", "intend", "estimate", "may", "will", "should", "could" and similar expressions.

In addition to the risks and uncertainties identified elsewhere herein and in other documents filed by us with the Securities and Exchange Commission, the risk factors described in this document under the caption "Risk Factors" should be carefully considered when evaluating our business and future prospects, including without limitation risks relating to: changes or delays in highway funding; rising interest rates; changes in oil prices; changes in steel prices; changes in the general economy; unexpected capital expenditures and decreases in liquidity; the timing of large contracts; production capacity; general business conditions in the industry; non-compliance with covenants in the Company's credit facilities; demand for the Company's products; and those other factors listed from time to time in the Company's reports filed with the Securities and Exchange Commission. Certain of the risks, uncertainties and other factors discussed above are more fully described in the section titled "Risk Factors" in the Company's Annual Report to Form 10-K for the year ended December 31, 2017.

ASTEC INDUSTRIES, INC.
MANAGEMENT'S REPORT ON INTERNAL CONTROL OVER FINANCIAL REPORTING

The management of Astec Industries, Inc. and subsidiaries (the "Company") is responsible for establishing and maintaining adequate internal control over financial reporting for the Company. The Company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with U.S. generally accepted accounting principles. The Company's internal control over financial reporting includes those policies and procedures that (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of assets of the Company; (ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the Company are being made only in accordance with authorizations of management and directors of the Company; and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the Company's assets that could have a material effect on the financial statements.

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

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 internal control over financial reporting as of December 31, 2017. In making this assessment, management used the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission, *Internal Control - Integrated Framework (2013)*. The scope of management's assessment of the effectiveness of the Company's internal control over financial reporting as of December 31, 2017 excluded the business unit that the Company acquired on October 1, 2017 (RexCon, Inc.). The total consolidated assets with respect to the excluded business unit were $29.3 million as of December 31, 2017, and the total consolidated revenues with respect to the excluded business unit were $2.7 million for the year ended December 31, 2017. Management will complete its assessment of the internal control over financial reporting of this newly-acquired operation during 2018. Based on its assessment, management concluded that, as of December 31, 2017, the Company's internal control over financial reporting was effective.

KPMG LLP, the Company's independent registered public accounting firm, has issued an attestation report on the Company's internal control over financial reporting as of December 31, 2017.

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Shareholders and Board of Directors
Astec Industries, Inc.:

Opinion on Internal Control Over Financial Reporting
We have audited Astec Industries, Inc. and subsidiaries' (the "Company") internal control over financial reporting as of December 31, 2017, based on criteria established in *Internal Control - Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission. In our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2017, based on criteria established in *Internal Control - Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) ("PCAOB"), the consolidated balance sheets of the Company as of December 31, 2017 and 2016, and the related consolidated statements of income, comprehensive income, equity, and cash flows for each of the years in the three-year period ended December 31, 2017, and related notes, and our report dated March 1, 2018 expressed an unqualified opinion on those consolidated financial statements.

The Company acquired RexCon, Inc. ("RexCon") during 2017, and management excluded from its assessment of the effectiveness of the Company's internal control over financial reporting as of December 31, 2017, RexCon's internal control over financial reporting associated with total assets of $29.3 million and total revenues of $2.7 million included in the consolidated financial statements of the Company as of and for the year ended December 31, 2017. Our audit of internal control over financial reporting of the Company also excluded an evaluation of the internal control over financial reporting of RexCon.

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

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

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

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

KPMG LLP

Knoxville, Tennessee
March 1, 2018

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Shareholders and Board of Directors
Astec Industries, Inc.

Opinion on the Consolidated Financial Statements
We have audited the accompanying consolidated balance sheets of Astec Industries, Inc. and subsidiaries (the "Company") as of December 31, 2017 and 2016, the related consolidated statements of income, comprehensive income, equity and cash flows for each of the years in the three-year period ended December 31, 2017, and the related notes (collectively, the "consolidated financial statements"). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2017 and 2016, and the results of their operations and their cash flows for each of the years in the three-year period ended December 31, 2017, in conformity with U.S. generally accepted accounting principles.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) ("PCAOB"), the Company's internal control over financial reporting as of December 31, 2017, based on criteria established in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission, and our report dated March 1, 2018 expressed an unqualified opinion on the effectiveness of the Company's internal control over financial reporting.

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

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

KPMG LLP

We have served as the Company's auditor since 2015.

Knoxville, Tennessee
March 1, 2018

CONSOLIDATED BALANCE SHEETS

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

	December 31	
Assets	**2017**	**2016**
Current assets:		
Cash and cash equivalents	$ 62,280	$ 82,371
Investments	1,624	1,024
Trade receivables, net	114,786	106,659
Other receivables	5,166	4,014
Inventories	391,379	360,404
Prepaid income taxes	12,556	2,967
Prepaid expenses and other assets	15,178	19,394
Total current assets	602,969	576,833
Property and equipment, net	190,396	180,538
Investments	14,553	13,965
Goodwill	45,732	40,804
Intangible assets	30,952	26,643
Deferred tax assets	2,576	2,676
Other long-term assets	2,401	2,142
Total assets	$ 889,579	$ 843,601
Liabilities and Equity		
Current liabilities:		
Short-term debt	$ --	$ 4,632
Current maturities of long-term debt	2,469	2,538
Accounts payable	60,417	57,297
Customer deposits	49,381	39,102
Accrued product warranty	15,410	13,156
Accrued payroll and related liabilities	23,297	25,693
Accrued loss reserves	2,504	2,852
Other accrued liabilities	25,668	23,591
Total current liabilities	179,146	168,861
Long-term debt	1,575	4,116
Deferred income tax liabilities	1,509	1,669
Other long-term liabilities	20,584	20,114
Total liabilities	202,814	194,760
Equity:		
Preferred stock - authorized 4,000 shares of $1.00 par value; none issued	--	--
Common stock – authorized 40,000 shares of $0.20 par value; issued and outstanding – 23,070 in 2017 and 23,046 in 2016	4,614	4,609
Additional paid-in capital	141,931	139,970
Accumulated other comprehensive loss	(24,243)	(31,562)
Company shares held by SERP, at cost	(1,960)	(1,958)
Retained earnings	565,330	536,771
Shareholders' equity	685,672	647,830
Non-controlling interest	1,093	1,011
Total equity	686,765	648,841
Total liabilities and equity	$ 889,579	$ 843,601

See Notes to Consolidated Financial Statements

CONSOLIDATED STATEMENTS OF INCOME

(in thousands, except per share data)

	Year Ended December 31		
	2017	2016	2015
Net sales	$ 1,184,739	$ 1,147,431	$ 983,157
Cost of sales	941,610	882,162	764,314
Gross profit	243,129	265,269	218,843
Selling, general and administrative expenses	160,775	153,145	145,180
Research and development expenses	26,817	24,969	23,676
Income from operations	55,537	87,155	49,987
Other income:			
Interest expense	840	1,395	1,611
Interest income	1,302	806	542
Other income	1,218	529	3,055
Income before income taxes	57,217	87,095	51,973
Income taxes	19,627	32,107	20,007
Net income	37,590	54,988	31,966
Net loss attributable to non-controlling interest	(205)	(171)	(831)
Net income attributable to controlling interest	$ 37,795	$ 55,159	$ 32,797
Earnings per Common Share:			
Net income attributable to controlling interest:			
Basic	$ 1.64	$ 2.40	$ 1.43
Diluted	1.63	2.38	1.42
Weighted average number of common shares outstanding:			
Basic	23,025	22,992	22,934
Diluted	23,184	23,142	23,120

See Notes to Consolidated Financial Statements

CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME
(in thousands)

	Year Ended December 31		
	2017	2016	2015
Net income	$ 37,590	$ 54,988	$ 31,966
Other comprehensive income (loss):			
Change in unrecognized pension and post-retirement benefit costs	689	(80)	(178)
Tax (expense) benefit on change in unrecognized pension and post-retirement benefit costs	(69)	29	36
Foreign currency translation adjustments	6,699	(2,420)	(13,848)
Tax (expense) benefit on foreign currency translation adjustments	--	(5,527)	3,341
Other comprehensive income (loss)	7,319	(7,998)	(10,649)
Comprehensive loss attributable to non-controlling interest	(232)	(137)	(1,603)
Comprehensive income attributable to controlling interest	$ 45,141	$ 47,127	$ 22,920

See Notes to Consolidated Financial Statements

CONSOLIDATED STATEMENTS OF CASH FLOWS
(in thousands)

	Year Ended December 31		
	2017	2016	2015
Cash Flows from Operating Activities			
Net income	$ 37,590	$ 54,988	$ 31,966
Adjustments to reconcile net income to net cash provided by operating activities:			
Depreciation	21,312	20,818	20,744
Amortization	4,490	3,995	3,334
Provision for doubtful accounts	482	280	18
Provision for warranties	16,725	18,912	13,743
Deferred compensation provision (benefit)	(574)	1,742	241
Deferred income tax benefit	(291)	(3,521)	(2,559)
Gain on disposition of fixed assets	(388)	(224)	(529)
Tax benefit from stock incentive plans	--	--	(345)
Stock-based compensation	3,142	2,936	1,250
Distributions to SERP participants	(206)	(532)	(2,986)
Change in operating assets and liabilities, net of effects of acquisitions:			
Sale (purchase) of trading securities, net	473	(1,873)	(405)
Trade and other receivables	(7,749)	(4,895)	3,163
Inventories	(19,618)	30,839	(6,499)
Prepaid expenses	(5,181)	4,846	(3,016)
Other assets	(779)	2,069	(968)
Accounts payable	630	8,836	(11,409)
Customer deposits	9,379	(762)	(3,697)
Accrued product warranty	(14,642)	(15,125)	(14,177)
Income taxes payable	(597)	181	(4,093)
Accrued retirement benefit costs	45	(50)	24
Accrued loss reserves	122	229	103
Other accrued liabilities	(1,118)	11,142	3,576
Other	(1,366)	(25)	3,387
Net cash provided by operating activities	41,881	134,806	30,866
Cash Flows from Investing Activities			
Business acquisition, net of cash acquired	(26,443)	(39,764)	178
Proceeds from sale of property and equipment	480	614	10,054
Expenditures for property and equipment	(20,046)	(27,367)	(21,202)
Sale (purchase) of investments	(891)	290	378
Net cash used by investing activities	(46,900)	(66,227)	(10,592)

See Notes to Consolidated Financial Statements

CONSOLIDATED STATEMENTS OF CASH FLOWS (CONTINUED)
(in thousands)

	Year Ended December 31		
	2017	2016	2015
Cash Flows from Financing Activities			
Payment of dividends	$ (9,226)	$ (9,217)	$ (9,193)
Borrowings under bank loans	--	5,973	106,034
Repayment of bank loans	(7,242)	(5,903)	(104,567)
Proceeds from issuance of common stock	--	--	72
Tax benefit from stock option exercise	--	--	345
Purchase of shares of subsidiaries	(106)	(696)	(653)
Sale (purchase) of Company shares by SERP, net	289	(153)	2,084
Withholding tax paid upon vesting of restricted stock units	(507)	(1,024)	(600)
Proceeds from cash surrender value of life insurance	--	--	416
Net cash used by financing activities	(16,792)	(11,020)	(6,062)
Effect of exchange rates on cash	1,720	(250)	(2,173)
Increase (decrease) in cash and cash equivalents	(20,091)	57,309	12,039
Cash and cash equivalents, beginning of year	82,371	25,062	13,023
Cash and cash equivalents, end of year	$ 62,280	$ 82,371	$ 25,062
Supplemental Cash Flow Information			
Cash paid during the year for:			
Interest	$ 588	$ 1,407	$ 1,651
Income taxes, net of refunds	$ 26,917	$ 28,455	$ 29,573

See Notes to Consolidated Financial Statements

CONSOLIDATED STATEMENTS OF EQUITY

For the Years Ended December 31, 2017, 2016 and 2015 (in thousands)

	Common Stock		Additional Paid-In Capital	Accumulated Other Comprehensive Loss	Company Shares Held by SERP	Retained Earnings	Non-Controlling Interest	Total Equity
	Shares	Amount						
Balance December 31, 2014	**22,930**	**$ 4,586**	**$ 135,887**	**$ (12,915)**	**$ (2,929)**	**$ 467,337**	**$ 4,186**	**$ 596,152**
Net income						32,797	(831)	31,966
Quarterly dividends ($0.10 per share for 4 quarters)			8			(9,201)		(9,193)
Other comprehensive loss				(10,649)			(772)	(11,421)
Change in ownership percentage of subsidiary							(663)	(663)
Stock-based compensation	4	1	1,249					1,250
RSU vesting, including tax benefit	54	11	406					417
Withholding tax on vested RSUs			(600)					(600)
Sale of Company stock held by SERP, net			933		1,151			2,084
Other							(134)	(134)
Balance December 31, 2015	**22,988**	**4,598**	**137,883**	**(23,564)**	**(1,778)**	**490,933**	**1,786**	**609,858**
Net income						55,159	(171)	54,988
Quarterly dividends ($0.10 per share for 4 quarters)			9			(9,226)		(9,217)
Other comprehensive income (loss)				(7,998)			34	(7,964)
Change in ownership percentage of subsidiary							(1,322)	(1,322)
Stock-based compensation	5	1	2,935					2,936
RSU vesting	53	10	(10)					--
Withholding tax on vested RSUs			(1,024)					(1,024)
Sale of Company stock held by SERP, net			27		(180)			(153)
Cumulative effect of adopting ASU No. 2016-09			150			(95)		55
Other							684	684
Balance December 31, 2016	**23,046**	**4,609**	**139,970**	**(31,562)**	**(1,958)**	**536,771**	**1,011**	**648,841**
Net income						37,795	(205)	37,590
Quarterly dividends ($0.10 per share for 4 quarters)			10			(9,236)		(9,226)
Other comprehensive income				7,319			(27)	7,292
Change in ownership percentage of subsidiary							(43)	(43)
Stock-based compensation	1		2,172					2,172
RSU vesting	23	5	(5)					--
Withholding tax on vested RSUs			(507)					(507)
Sale of Company stock held by SERP, net			291		(2)			289
Other							357	357
Balance December 31, 2017	**23,070**	**$ 4,614**	**$ 141,931**	**$ (24,243)**	**$ (1,960)**	**$ 565,330**	**$ 1,093**	**$ 686,765**

See Notes to Consolidated Financial Statements

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(Dollar and share amounts in thousands, except per share amounts unless otherwise specified)

1. Summary of Significant Accounting Policies

Basis of Presentation - The consolidated financial statements include the accounts of Astec Industries, Inc. and its domestic and foreign subsidiaries (the "Company"). The Company's significant wholly-owned and consolidated subsidiaries at December 31, 2017 are as follows:

Astec Australia Pty Ltd	Astec do Brasil Fabricacao de Equipamentos Ltda. (92% owned)
Astec, Inc.	Astec Insurance Company
Astec Mobile Machinery GmbH	Astec Mobile Screens, Inc.
Breaker Technology, Inc.	Breaker Technology Ltd.
Carlson Paving Products, Inc.	CEI Enterprises, Inc.
GEFCO, Inc.	Heatec, Inc.
Johnson Crushers International, Inc.	Kolberg-Pioneer, Inc.
Osborn Engineered Products SA (Pty) Ltd (99% owned)	Peterson Pacific Corp.
	Power Flame Incorporated
RexCon, Inc.	Roadtec, Inc.
Telestack Limited	Telsmith, Inc.

All intercompany accounts and transactions have been eliminated in consolidation. Certain reclassifications have been made to the 2016 consolidated financial statements to conform to the 2017 presentation.

Use of Estimates - The preparation of financial statements in conformity with U.S. generally accepted accounting principles requires management to make estimates and assumptions that affect the amounts reported and disclosed in the financial statements and accompanying notes. Actual results could differ from those estimates.

Foreign Currency Translation - Subsidiaries located in Australia, Brazil, Canada, Germany, Northern Ireland, and South Africa operate primarily using local functional currencies. Accordingly, assets and liabilities of these subsidiaries are translated using exchange rates in effect at the end of the period, and revenues and costs are translated using average exchange rates for the period. The resulting adjustments are presented as a separate component of accumulated other comprehensive loss. Foreign currency transaction gains and losses, net are included in cost of sales and amounted to a gain of $431 in 2017 and losses of $246 and $1,377 in 2016 and 2015, respectively.

Fair Value of Financial Instruments - For cash and cash equivalents, trade receivables, other receivables, revolving debt and accounts payable, the carrying amount approximates the fair value because of the short-term nature of those instruments. Trading equity investments are valued at their estimated fair value based on their quoted market prices and 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 from a nationally recognized third party pricing service.

Financial assets and liabilities are categorized as of the end of each reporting period 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.

All financial assets and liabilities held by the Company at December 31, 2017 and 2016 are classified as Level 1 or Level 2, as summarized in Note 3, Fair Value Measurements.

Cash and Cash Equivalents - All highly liquid investments with an original maturity of three months or less when purchased are considered to be cash and cash equivalents.

Investments - Investments consist primarily of investment-grade marketable securities. Trading securities are carried at fair value, with unrealized holding gains and losses included in net income. Realized gains and losses are accounted for on the specific identification method. Purchases and sales are recorded on a trade date basis. Management determines the appropriate classification of its investments at the time of acquisition and reevaluates such determination at each balance sheet date.

Concentration of Credit Risk - The Company sells products to a wide variety of customers. Accounts receivable are carried at their outstanding principal amounts, less an allowance for doubtful accounts. The Company extends credit to its customers based on an evaluation of the customers' financial condition generally without requiring collateral, although the Company normally requires advance payments or letters of credit on large equipment orders. Credit risk is driven by conditions within the economy and the industry and is principally dependent on each customer's financial condition. To minimize credit risk, the Company 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, the Company records an allowance for doubtful accounts at a level which management believes is sufficient to cover probable 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. As of December 31, 2017, concentrations of credit risk with respect to receivables are limited due to the wide variety of customers.

Allowance for Doubtful Accounts - The following table represents a rollforward of the allowance for doubtful accounts for the years ended December 31, 2017, 2016 and 2015:

	Year Ended December 31		
	2017	2016	2015
Allowance balance, beginning of year	$ 1,511	$ 1,837	$ 2,248
Provision	482	280	18
Write offs	(308)	(560)	(357)
Other	31	(46)	(72)
Allowance balance, end of year	$ 1,716	$ 1,511	$ 1,837

Inventories - The Company's inventory is comprised of raw materials, work-in-process, finished goods and used equipment.

Raw material inventory is 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 inventory 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 inventory consists of completed equipment manufactured for sale to customers.

Used equipment inventory 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, the Company's normal gross margins, 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 allowance 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 equipment or parts we sell. 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.

Property and Equipment - Property and equipment is stated at cost. Depreciation is calculated for financial reporting purposes using the straight-line method based on the estimated useful lives of the assets as follows: airplanes (20 years), buildings (40 years) and equipment (3 to 10 years). Both accelerated and straight-line methods are used for tax compliance purposes. Routine repair and maintenance costs and planned major maintenance are expensed when incurred.

Goodwill and Other Intangible Assets - The Company classifies intangible assets as either intangible assets with definite lives subject to amortization or goodwill.

The Company tests intangible assets with definite lives for impairment if conditions exist that indicate the carrying value may not be recoverable. Such conditions may include an economic downturn in a geographic market or a change in the assessment of future operations. An impairment charge is recorded when the carrying value of the definite lived intangible asset is not recoverable by the future undiscounted cash flows expected to be generated from the use of the asset.

The Company determines the useful lives of identifiable intangible assets after considering the specific facts and circumstances related to each intangible asset. Factors considered when determining useful lives include the contractual terms of agreements, the history of the asset, the Company's long-term strategy for the use of the asset, any laws or other local regulations which could impact the useful life of the asset, and other economic factors, including competition and specific market conditions. Intangible assets that are deemed to have definite lives are amortized over their useful lives as follows: dealer network and customer relationships: 8-19 years; trade names: 15 years; other: 5-19 years.

Goodwill is not amortized. The Company tests goodwill for impairment annually or more frequently if events or circumstances indicate that goodwill might be impaired. The Company uses qualitative factors to determine whether it is more likely than not (a likelihood of more than 50 percent) that the fair value of a reporting unit is less than its carrying value, including goodwill. The Company estimates the fair values of each of its reporting units using the income approach.

The income approach uses a reporting unit's projection of estimated future operating results and cash flows which are then discounted using a weighted average cost of capital determined based on current market conditions for the individual reporting unit. The projection uses management's best estimates of cash flows over the projection period based on estimates of annual and terminal growth rates in sales and costs, and changes in operating margins, selling, general and administrative expenses, working capital requirements and capital expenditures. Other factors used in evaluating the fair value of a reporting unit could include deterioration in the general economy, fluctuations in foreign exchange, deterioration in the industry or markets in which the reporting unit operates, an increased competitive market, regulatory or political developments in the market, increases in raw materials, labor costs or other factors that have a negative effect on earnings and cash flows, a decline in actual or budgeted earnings or cash flows, and entity specific changes in management, key personnel, strategy or customer base. If the fair value of a

reporting unit is found to be less than its book value, the company will record an impairment loss equal to the excess, if any, of the book value over the fair value of its goodwill.

The fair value of reporting units that do not have goodwill are estimated using either the income or market approaches, depending on which approach is the most appropriate for each reporting unit. The fair value of the reporting units that serve operating units in supporting roles, such as the captive insurance company and the corporate reporting unit are estimated using the cost approach. The sum of the fair values of all reporting units is compared to the fair value of the consolidated Company, calculated using the market approach, which is inferred from the market capitalization of the Company at the date of the valuation, to confirm that the Company's estimation of the fair value of its reporting units is reasonable.

Determining the fair values of the Company's reporting units involves the use of significant estimates and assumptions. Due to the inherent uncertainty involved in making these estimates and assumptions, actual results could differ materially from those estimates.

Impairment of Long-lived Assets - In the event that facts and circumstances indicate the carrying amounts of long-lived assets may be impaired, an evaluation of recoverability is performed. If an evaluation is required, the estimated future undiscounted cash flows associated with the asset are compared to the carrying amount for each asset (or group of assets) to determine if a write-down is required. If this review indicates that the assets will not be recoverable, the carrying values of the impaired assets are reduced to their estimated fair value. Fair value is estimated using discounted cash flows, prices for similar assets or other valuation techniques.

Self-Insurance Reserves - The Company retains the risk for a portion of its workers' compensation claims and general liability claims by way of a captive insurance company, Astec Insurance Company ("Astec Insurance" or the "captive"). Astec Insurance was originally incorporated under the laws of the state of Vermont but was redomiciled to the state of Tennessee in late 2017. The objectives of Astec Insurance are to improve control over and reduce the cost of claims; to improve focus on risk reduction with the development of a program structure which rewards proactive loss control; and to ensure management participation in the defense and settlement process for claims.

For general liability claims, the captive is liable for the first $1,000 per occurrence and $3,000 per year in the aggregate. The Company carries general liability, excess liability and umbrella policies for claims in excess of amounts covered by the captive.

For workers' compensation claims, the captive is liable for the first $350 per occurrence and $3,250 per year in the aggregate. The Company utilizes a large national insurance company as third-party administrator for workers' compensation claims and carries insurance coverage for claims liabilities in excess of amounts covered by the captive.

The financial statements of the captive are consolidated into the consolidated financial statements of the Company. The short-term and long-term reserves for claims and potential claims related to general liability and workers' compensation under the captive are included in accrued loss reserves or other long-term liabilities, respectively, in the consolidated balance sheets depending on the expected timing of future payments. The undiscounted reserves are actuarially determined to cover the ultimate cost of each claim 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. However, the Company does not believe it is reasonably likely that the reserve level will materially change in the foreseeable future.

The Company is self-insured for health and prescription claims under its Group Health Insurance Plan at all but one of the Company's domestic manufacturing subsidiaries. The Company carries reinsurance coverage to limit its exposure for individual health claims above certain limits. Third parties administer health claims and prescription medication claims. The Company maintains a reserve for the self-insured health plan which is included in accrued loss reserves on the Company's consolidated balance sheets. This reserve includes both unpaid claims and an estimate of claims incurred but not reported, based on historical claims and payment experience. Historically, the reserves have been sufficient to provide for claims payments. Changes in actual claims experience or payment patterns could cause the reserve to change, but the Company does not believe it is reasonably likely that the reserve level will materially change in the near future.

The remaining U.S. subsidiary is covered under a fully insured group health plan. Employees of the Company's foreign subsidiaries are insured under separate health plans. No reserves are necessary for these fully-insured health plans.

Revenue Recognition - Revenue is generally recognized on sales at the point in time when persuasive evidence of an arrangement exists, the price is fixed or determinable, the product has been delivered or services have been rendered and there is a reasonable assurance of collection of the sales proceeds. The Company generally obtains purchase authorizations from its customers for a specified amount of products at a specified price with specified delivery terms. A significant portion of the Company's equipment sales represents equipment produced in the Company's plants under short-term contracts for a specific customer project or equipment designed to meet a customer's specific requirements. Most of the equipment sold by the Company is based on standard configurations, some of which are modified to meet customer needs or specifications. The Company provides customers with technical design and performance specifications and performs pre-shipment testing to ensure the equipment performs according to design specifications, regardless of whether the Company provides installation services in addition to selling the equipment.

Certain contracts include terms and conditions pursuant to which the Company recognizes revenues upon completion of equipment production, which 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 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.

The Company has certain sales accounted for as multiple-element arrangements, whereby revenue attributable to the sale of a product is recognized when the product is shipped, and the revenue attributable to services provided with respect to the product (such as installation services) is recognized when the service is performed. Consideration is allocated to deliverables using the relative selling price method using vendor specific objective evidence, if it exists. Otherwise, the Company uses third-party evidence of selling price or the Company's best estimate of the selling price for the deliverables. The Company evaluates sales with multiple deliverable elements (such as an agreement to deliver equipment and related installation services) to determine whether revenue related to individual elements should be recognized separately, or as a combined unit. In addition to the previously mentioned general revenue recognition criteria, the Company only recognizes revenue on individual delivered elements when there is objective and reliable evidence that the delivered element has a determinable value to the customer on a standalone basis and there is no right of return.

The Company has certain sales accounted for under the percentage of completion method using the ratio of costs incurred to estimated total costs. Revenue, in an amount equal to cost incurred, is recognized until there is sufficient information to determine the estimated profit on the project with a reasonable level of certainty. The factors considered in this evaluation include the stage of design completion, the stage of equipment manufacturing completion, the state of construction completion, the status of outstanding subcontracts, certainty of quantities of labor and materials, certainty of schedule and the relationship with the customer.

The Company presents in the consolidated statements of income any 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, on a net (excluded from revenue) basis.

Advertising Expense - The cost of advertising is expensed as incurred. The Company incurred $3,793, $4,045, and $4,231 in advertising costs during 2017, 2016 and 2015, respectively, which is included in selling, general and administrative expenses.

Income Taxes - Income taxes are based on pre-tax financial accounting income. Deferred tax assets and liabilities are recognized for the expected tax consequences of temporary differences between the tax bases of assets and liabilities and their reported amounts. The Company periodically assesses the need to establish valuation allowances against its deferred tax assets to the extent the Company no longer believes it is more likely than not that the tax assets will be fully utilized.

The Company evaluates a tax position to determine whether it is more likely than not that the tax position will be sustained upon examination, based upon the technical merits of the position. A tax position that meets the more-likely-than-not recognition threshold is subject to a measurement assessment to determine the amount of benefit to recognize and the appropriate reserve to establish, if any. If a tax position does not meet the more-likely-than-not recognition threshold, no benefit is recognized. The Company is periodically audited by U.S. federal and state as well as foreign tax authorities. While it is often difficult to predict final outcome or timing of resolution of any particular tax matter, the Company believes its reserve for uncertain tax positions is adequate to reduce the uncertain positions to the greatest amount of benefit that is more likely than not realizable.

Product Warranty Reserve - The Company accrues for the estimated cost of product warranties at the time revenue is recognized. Warranty obligations by product line or model are evaluated based on historical warranty claims experience. For equipment, the Company's standard product warranty terms generally include post-sales support and repairs of products at no additional charge for periods ranging from three months to two years or up to a specified number of hours of operation. For parts from component suppliers, the Company relies on the original manufacturer's warranty that accompanies those parts. Generally, Company fabricated parts are not covered by specific warranty terms. Although failure of fabricated parts due to material or workmanship is rare, if it occurs, the Company's policy is to replace fabricated parts at no additional charge.

The Company engages in extensive product quality programs and processes, including actively monitoring and evaluating the quality of our component suppliers. Estimated warranty obligations are based upon warranty terms, product failure rates, repair costs and current period machine shipments. If actual product failure rates, repair costs, service delivery costs or post-sales support costs differ from our estimates, revisions to the estimated warranty liability may be required.

Pension and Retirement Plans - The determination of obligations and expenses under the Company's pension plan is dependent on the Company's selection of certain assumptions used by independent actuaries in calculating such amounts. Those assumptions are described in Note 12, Pension and Retirement Plans and include among others, the discount rate, expected return on plan assets and the expected mortality rates. In accordance with U.S. generally accepted accounting principles, actual results that differ from assumptions are accumulated and amortized over future periods and, therefore, generally affect the recognized expense in such periods. Significant differences in actual experience or significant changes in the assumptions used may materially affect the pension obligations and future expenses.

The Company recognizes the overfunded or underfunded status of its pension plan as an asset or liability. Actuarial gains and losses, amortization of prior service cost (credit) and amortization of transition obligations are recognized through other comprehensive income (loss) in the year in which the changes occur. The Company measures the funded status of its pension plan as of the date of the Company's fiscal year-end.

Stock-based Compensation - The Company recognizes the cost of employee services received in exchange for equity awards in the consolidated financial statements based on the grant date calculated fair value of the awards. The Company recognizes stock-based compensation expense over the period during which an employee is required to provide service in exchange for the award (the vesting period). The Company's equity awards are further described in Note 16, Shareholders' Equity.

Earnings Per Share - Basic earnings per share is based on the weighted average number of common shares outstanding and diluted earnings per share includes potential dilutive effects of restricted stock units and shares held in the Company's supplemental executive retirement plan.

The following table sets forth a reconciliation of the number of shares used in the computation of basic and diluted earnings per share:

	Year Ended December 31		
	2017	**2016**	**2015**
Denominator:			
Denominator for basic earnings per share	23,025	22,992	22,934
Effect of dilutive securities:			
Restricted stock units	96	85	123
Supplemental executive retirement plan	63	65	63
Denominator for diluted earnings per share	23,184	23,142	23,120

Derivatives and Hedging Activities - The Company recognizes all derivatives in the consolidated balance sheets at their fair value. Derivatives that are not hedges are adjusted to fair value through income. If the derivative is a hedge, depending on the nature of the hedge, changes in the fair value of derivatives are either offset against the change in fair value of assets, liabilities, or firm commitments through income or recognized in other comprehensive income until the hedged item is recognized in income. The ineffective portion of a derivative's change in fair value is immediately recognized in income. From time to time, the Company's foreign subsidiaries enter into foreign currency exchange contracts to mitigate exposure to fluctuation in currency exchange rates. See Note 13, Derivative Financial Instruments, regarding foreign exchange contracts outstanding at December 31, 2017 and 2016.

Shipping and Handling Fees and Cost - The Company records revenues earned for shipping and handling as revenue, while the cost of shipping and handling is classified as cost of sales.

Business Combinations - The Company accounts for business combinations using the acquisition method. Accordingly, intangible assets are recorded apart from goodwill if they arise from contractual or legal rights or if they are separable from goodwill. Related third-party acquisition costs are expensed as incurred and contingent consideration is booked at its fair value as part of the purchase price. See Note 20, Business Combinations, regarding acquisitions completed by the Company in the years ended December 31, 2017 and 2016.

Subsequent Events Review - Management has evaluated events occurring between December 31, 2017 and the date these consolidated financial statements were filed with the Securities and Exchange Commission for proper recording or disclosure therein.

Recent Accounting Pronouncements - In May 2014, the Financial Accounting Standards Board (‘FASB”) issued Accounting Standards Update (“ASU”) No. 2014-09, "Revenue from Contracts with Customers", which supersedes existing revenue guidance under U.S. GAAP. The standard's core principle is that a company will recognize revenue when it transfers promised goods or services to customers in an amount that reflects the consideration to which the company expects to be entitled in exchange for those goods or services. The implementation of this new standard will require companies to use more judgment and to make more estimates than under current guidance and to expand their disclosures to include information regarding contract assets and liabilities as well as a more disaggregated view of revenue. The standard, as amended, is effective for public companies for annual periods beginning after December 15, 2017. The Company adopted the new standard effective January 1, 2018 using the modified retrospective transition method and will expand its disclosures in the first quarter 2018 consolidated financial statements to comply with the disclosure provisions of the new rule. The Company does not expect the adoption of the standard to have a material impact on its financial position, results of operations or cash flows.

In January 2016, the FASB issued ASU No. 2016-01, “Financial Instruments - Overall (Subtopic 825-10)”, which requires, among other things, equity investments with readily determinable fair values, except those accounted for under the equity method of accounting or those that result in consolidation of the investee, to be measured at fair value with changes in fair value recognized in net income. The standard is effective for public companies in fiscal years beginning after December 15, 2017, and the Company adopted the standard effective January 1, 2018. The Company does not expect the adoption of this standard to have a material impact on the Company's financial position, cash flows or results of operations.

In February 2016, the FASB issued ASU No. 2016-02, “Leases (Topic 842)”, which significantly changes the accounting for operating leases by lessees. The accounting applied by lessors is largely unchanged from that applied under previous guidance. The new guidance requires lessees to recognize lease assets and lease liabilities in the balance sheet, initially measured at the present value of the lease payments, for leases which were classified as operating leases under previous guidance. Lease cost included in the statement of income will be calculated so that the cost of the lease is allocated over the lease term, generally on a straight-line basis. Lessees may make an accounting policy election to exclude leases with a term of 12 months or less from the requirement to record related assets and liabilities. The new standard is effective for public companies for fiscal years beginning after December 15, 2018. The Company plans to adopt the new standard effective January 1, 2019. The Company does not expect the adoption of this standard to have a material impact on its results of operations or cash flows; however, the Company has not determined the impact the adoption of this new standard will have on its financial position.

In March 2016, the FASB issued ASU No. 2016-08, “Revenue from Contracts with Customers (Topic 606)”, which does not change the core principles of ASU No. 2014-09 discussed above, but rather clarifies the implementation guidance in order to eliminate the potential for diversity in practice arising from inconsistent application of the principal versus agent guidance. Under the new guidance, when an entity determines it is a principal in a transaction, the entity recognizes revenue in the gross amount of consideration; however, in transactions where an entity determines it is an agent, the entity recognizes revenue in the amount of any fee or commission to which it expects to be entitled. The standard is effective for public companies for annual periods beginning after December 15, 2017. The Company adopted the new standard effective January 1, 2018. The Company does not expect the adoption of this new standard to have a material impact on the Company’s financial position, results of operations or cash flows.

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 will require 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 expects to adopt the new standard as of January 1, 2020. The Company has not yet determined what impact, if any, the adoption of this new standard will have on the Company's financial position, results of operations or cash flows.

In August 2016, the FASB issued ASU No. 2016-15, “Statement of Cash Flows (Topic 230), Classification of Certain Cash Receipts and Cash Payments (a consensus of the Emerging Issues Task Force)” which clarifies how certain cash receipts and cash payments should be presented on the statement of cash flows. The statement also addresses how the predominance principle should be applied when cash payments have aspects of more than one class of cash flows. The standard is effective for public companies in fiscal years beginning after December 15, 2017, and the Company adopted the standard effective January 1, 2018. The Company does not expect the adoption of this new standard to have a material impact on the Company's consolidated statements of cash flows.

In October 2016, the FASB issued ASU No. 2016-16, “Income Taxes (Topic 740), Intra-Entity Transfers of Assets Other Than Inventory” which requires companies to account for the income tax effects of intercompany sales and transfers of assets other than inventory, such as intangible assets, when the transfer occurs. This is a change from current guidance, which requires companies to defer the income tax effects of intercompany transfers of assets until the asset has been sold to an outside party or otherwise recognized by being depreciated, amortized, or impaired. The new guidance will require companies to defer the income tax effects of only intercompany transfers of inventory. The standard is effective for public companies in fiscal years beginning after December 15, 2017. The Company adopted the new standard effective January 1, 2018. The Company does not expect the application of this standard to have a material impact on the Company's financial position, results of operations or cash flows.

In January 2017, the FASB issued ASU No. 2017-01, “Business Combinations (Topic 805), Clarifying the Definition of a Business,” which provides additional guidance to assist entities with evaluating whether transactions should be accounted for as acquisitions (or disposals) of assets or businesses. The standard is effective for public companies for annual or interim periods beginning after December 15, 2017. The Company adopted the new standard effective January 1, 2018. The Company does not expect the application of this standard to have a material impact on its financial position, results of operations or cash flows.

In January 2017, the FASB issued ASU No. 2017-04, “Intangibles-Goodwill and Other (Topic 350), Simplifying the Test for Goodwill Impairment,” which eliminates Step 2 from the goodwill impairment test for public companies. Previously, Step 2 measured a goodwill impairment loss by comparing the implied fair value of a reporting unit’s goodwill with the carrying amount of that goodwill. The new guidance stipulates that an entity should perform its annual or interim goodwill impairment test by comparing the fair value of a reporting unit with its carrying amount. An impairment charge would be recognized for the amount by which the carrying amount exceeds the reporting unit’s fair value, up to the amount of goodwill allocated to the reporting unit. The standard is effective for annual or interim goodwill impairment tests in fiscal years beginning after December 15, 2019 with early adoption permitted. The Company elected to adopt this standard as of December 31, 2017. The application of this standard did not have a material impact on the Company’s financial position, results of operations or cash flows.

In August 2017, the FASB issued ASU No. 2017-12, “Derivatives and Hedging (Topic 815), Targeted Improvements to Hedging Activities”, to improve the financial reporting of hedging relationships to better portray the economic results of an entity’s risk management activities in its financial statements. The new guidance is effective for public companies for fiscal years beginning after December 15, 2018 and interim periods within those fiscal years with early adoption permitted in any interim period after its issuance. The Company plans to adopt the new standard effective January 1, 2019. The Company does not expect the application of this standard to have a material impact on its financial position, results of operations or cash flows.

2. Inventories

Inventories consist of the following:

	December 31	
	2017	**2016**
Raw materials and parts	$ 146,144	$ 137,763
Work-in-process	129,441	115,613
Finished goods	94,571	84,898
Used equipment	21,223	22,130
Total	$ 391,379	$ 360,404

3. 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, and marketable equity securities held in an unqualified Supplemental Executive Retirement Plan (“SERP”). The financial assets held in the SERP also constitute a liability of the Company for financial reporting purposes. The Company’s subsidiaries also occasionally enter into foreign currency exchange contracts to mitigate exposure to fluctuations in currency exchange rates.

For cash and cash equivalents, trade receivables, other receivables, revolving debt and accounts payable, the carrying amount approximates the fair value because of the short-term nature of these 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.

As indicated in the tables below, the Company has determined that its financial assets and liabilities at December 31, 2017 and 2016 are level 1 and level 2 in the fair value hierarchy:

	December 31, 2017		
	Level 1	**Level 2**	**Total**
Financial Assets:			
Trading equity securities:			
SERP money market fund	$ 124	$ --	$ 124
SERP mutual funds	4,839	--	4,839
Preferred stocks	364	--	364
Trading debt securities:			
Corporate bonds	5,661	--	5,661
Municipal bonds	--	1,912	1,912
Floating rate notes	753	--	753
U.S. Treasury bills	1,030	--	1,030
Asset-backed securities	--	526	526
Other	--	968	968
Total financial assets	$ 12,771	$ 3,406	$ 16,177
Financial Liabilities:			
SERP liabilities	$ --	$ 8,552	$ 8,552
Derivative financial instruments	--	112	112
Total financial liabilities	$ --	$ 8,664	$ 8,664

	December 31, 2016		
	Level 1	Level 2	Total
Financial Assets:			
Trading equity securities:			
SERP money market fund	$ 92	$ --	$ 92
SERP mutual funds	3,335	--	3,335
Preferred stocks	475	--	475
Trading debt securities:			
Corporate bonds	5,413	--	5,413
Municipal bonds	--	2,248	2,248
Floating rate notes	118	--	118
U.S. Treasury bills	388	--	388
Asset-backed securities	--	637	637
Other	--	2,283	2,283
Derivative financial instruments	--	144	144
Total financial assets	$ 9,821	$ 5,312	$ 15,133
Financial Liabilities:			
SERP liabilities	$ --	$ 7,882	$ 7,882
Derivative financial instruments	--	89	89
Total financial liabilities	$ --	$ 7,971	$ 7,971

The Company reevaluates the volume of trading activity for each of its investments at the end of each reporting period and adjusts the level within the fair value hierarchy as needed.

4. Investments

The Company's trading securities consist of the following:

	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value (Net Carrying Amount)
December 31, 2017				
Trading equity securities	$ 4,964	$ 394	$ 31	$ 5,327
Trading debt securities	10,971	58	179	10,850
Total	$ 15,935	$ 452	$ 210	$ 16,177
December 31, 2016				
Trading equity securities	$ 3,980	$ 40	$ 118	$ 3,902
Trading debt securities	11,312	23	248	11,087
Total	$ 15,292	$ 63	$ 366	$ 14,989

Trading equity investments are valued at their estimated fair value based on their quoted market prices and 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 from a nationally recognized third-party pricing service. Additionally, a significant portion of the trading equity securities are in equity money market and mutual funds and also comprise a portion of the Company's liability under its SERP. See Note 12, Pension and Retirement Plans, for additional information on these investments and the SERP.

Trading debt securities are comprised mainly 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.

Net unrealized gains or losses incurred on investments still held as of the end of each reporting period amounted to losses of $319, $107 and $429 in 2017, 2016 and 2015, respectively.

5. Goodwill

Goodwill represents the excess of the purchase price over the fair value of identifiable net assets acquired in business combinations. Current U.S. accounting guidance provides that goodwill and indefinite-lived intangible assets be tested for impairment at least annually. The Company performs the required valuation procedures each year as of December 31 after the following year's forecasts are submitted and reviewed. The valuations performed in 2017, 2016 and 2015 indicated no impairment of goodwill.

The changes in the carrying amount of goodwill by reporting segment during the years ended December 31, 2017 and 2016 are as follows:

	Infrastructure Group	Aggregate and Mining Group	Energy Group	Total
Balance, December 31, 2015	$ 8,481	$ 22,354	$ --	$ 30,835
Acquisition	--	--	12,632	12,632
Foreign currency translation	(33)	(2,630)	--	(2,663)
Balance, December 31, 2016	8,448	19,724	12,632	40,804
Acquisition	--	--	3,488	3,488
Foreign currency translation	125	1,315	--	1,440
Balance, December 31, 2017	$ 8,573	$ 21,039	$ 16,120	$ 45,732

6. Intangible Assets

Intangible assets consisted of the following at December 31, 2017 and 2016:

	2017			2016		
	Gross Carrying Value	Accumulated Amortization	Net Carrying Value	Gross Carrying Value	Accumulated Amortization	Net Carrying Value
Dealer network and customer relationships	$ 31,376	$ 10,856	$ 20,520	$ 26,035	$ 7,584	$ 18,451
Trade names	9,650	1,914	7,736	7,021	1,362	5,659
Other	6,821	4,125	2,696	5,764	3,231	2,533
Total	$ 47,847	$ 16,895	$ 30,952	$ 38,820	$ 12,177	$ 26,643

Amortization expense on intangible assets was $4,064, $3,562 and $2,953 for 2017, 2016 and 2015, respectively. Intangible asset amortization expense is expected to be $5,172, $4,069, $3,628, $3,191 and $2,686 in the years ending December 31, 2018, 2019, 2020, 2021 and 2022 respectively, and $12,206 thereafter.

7. Property and Equipment

Property and equipment consist of the following:

	December 31	
	2017	2016
Land	$ 15,568	$ 14,768
Building and land improvements	154,019	140,229
Manufacturing and office equipment	244,324	231,816
Aviation equipment	14,227	14,169
Less accumulated depreciation	(237,742)	(220,444)
Total	$ 190,396	$ 180,538

Depreciation expense was $21,312, $20,818 and $20,744 for the years ended December 31, 2017, 2016 and 2015, respectively.

8. Leases

The Company leases certain land, buildings and equipment for use in its operations under various operating leases. Total rental expense charged to operations under operating leases was approximately $3,211, $2,792 and $2,786 for the years ended December 31, 2017, 2016 and 2015, respectively.

Minimum rental commitments for all noncancelable operating leases at December 31, 2017 are as follows:

2018	$	2,146
2019		1,965
2020		1,006
2021		634
2022		279
Thereafter		233
	$	6,263

9. Debt

On April 12, 2017, 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 $100,000, including a sub-limit for letters of credit of up to $30,000. There were no outstanding revolving or term loan borrowings under the credit facility at December 31, 2017 or 2016. Letters of credit totaling $9,757, including $3,200 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 December 31, 2017, resulting in additional borrowing ability of $90,243 under the credit facility. The credit agreement has a five-year term expiring in April 2022. Borrowings under the agreement are subject to an interest rate equal to the daily one-month LIBOR rate plus a 0.75% margin, resulting in a rate of 2.32% as of December 31, 2017. The unused facility fee is 0.125%. Interest only payments are due monthly. 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 $7,672 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 December 31, 2017, Osborn had no outstanding borrowings but had $813 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 December 31, 2017, Osborn had available credit under the facility of $6,859. The interest rate is 0.25% less than the South Africa prime rate, resulting in a rate of 10.0% as of December 31, 2017.

The Company's Brazilian subsidiary has outstanding working capital loans totaling $3,402 from Brazilian banks with interest rates ranging from 10.4% to 11.0%. The loans’ maturity dates ranging from November 2018 to April 2024 and are secured by Astec Brazil’s manufacturing facility and also by letters of credit totaling $3,200 issued by Astec Industries, Inc. Additionally, Astec Brazil has various five-year equipment financing loans outstanding with Brazilian banks in the aggregate of $642 as of December 31, 2017 that have interest rates ranging from 3.5% to 16.3%. These equipment loans have maturity dates ranging from September 2018 to April 2020. Astec Brazil's loans are included in the accompanying consolidated balance sheets as current maturities of long-term debt of $2,469 and long-term debt of $1,575 as of December 31, 2017.

Long-term debt maturities are expected to be $2,469, $729, $251, $251 and $251 in the years ending December 31, 2018, 2019, 2020, 2021 and 2022, respectively, and $93 thereafter.

10. Product Warranty Reserves

The Company warrants its products against manufacturing defects and performance to specified standards. The warranty period and performance standards vary by product, 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 warranty liability is primarily based on historical claim rates, nature of claims and the associated costs.

Changes in the Company's product warranty liability during 2017, 2016 and 2015 are as follows:

	2017	2016	2015
Reserve balance, beginning of year	$ 13,156	$ 9,100	$ 10,032
Warranty liabilities accrued	16,725	18,912	13,743
Warranty liabilities settled	(14,642)	(15,125)	(14,177)
Other	171	269	(498)
Reserve balance, end of year	$ 15,410	$ 13,156	$ 9,100

11. Accrued Loss Reserves

The Company accrues 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 claim 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 at December 31, 2017 were $8,119 and $7,892 at December 31, 2016, of which $5,615 and $5,040 were included in other long-term liabilities at December 31, 2017 and 2016, respectively.

12. Pension and Retirement Plans

Prior to December 31, 2003, all employees of the Company's Kolberg-Pioneer, Inc. subsidiary were covered by a defined benefit pension plan. After December 31, 2003, all benefit accruals under the plan ceased and no new employees could become participants in the plan. Benefits paid under this plan are based on years of service multiplied by a monthly amount. The Company's funding policy for the plan is to make at least the minimum annual contributions required by applicable regulations.

The Company's investment strategy for the plan is to earn a rate of return sufficient to match or exceed the long-term growth of pension liabilities. The investment policy states that the Plan Committee in its sole discretion shall determine the allocation of plan assets among the following four asset classes: cash equivalents, fixed-income securities, domestic equities and international equities. The Plan Committee attempts to ensure adequate diversification of the invested assets through investment in an exchange traded mutual fund that invests in a diversified portfolio of stocks, bonds and money market securities.

The following provides information regarding benefit obligations, plan assets and the funded status of the plan:

	Pension Benefits	
	2017	2016
Change in benefit obligation		
Benefit obligation, beginning of year	$ 16,104	$ 15,565
Interest cost	630	650
Actuarial loss	867	514
Benefits paid	(685)	(625)
Benefit obligation, end of year	16,916	16,104
Accumulated benefit obligation	16,916	16,104
Change in plan assets		
Fair value of plan assets, beginning of year	13,241	12,688
Actual gain on plan assets	1,746	763
Employer contribution	415	415
Benefits paid	(685)	(625)
Fair value of plan assets, end of year	14,717	13,241
Funded status, end of year	$ (2,199)	$ (2,863)
Amounts recognized in the consolidated balance sheets		
Noncurrent liabilities	$ (2,199)	$ (2,863)
Net amount recognized	$ (2,199)	$ (2,863)
Amounts recognized in accumulated other comprehensive loss consist of		
Net loss	$ 5,463	$ 6,152
Net amount recognized	$ 5,463	$ 6,152
Weighted average assumptions used to determine benefit obligations as of December 31		
Discount rate	3.50%	4.00%
Expected return on plan assets	6.25%	6.25%
Rate of compensation increase	N/A	N/A

The measurement date used for the plan was December 31. In determining the expected return on plan assets, the historical experience of the plan assets, the current and expected allocation of the plan assets and the expected long-term rates of return were considered.

All assets in the plan are invested in an exchange traded mutual fund (level 1 in the fair value hierarchy). The allocation of assets within the mutual fund as of December 31 and the target asset allocation ranges by asset category are as follows:

Asset Category	Actual Allocation		2017 & 2016 Target Allocation Ranges
	2017	2016	
Equity securities	49.4%	63.6%	40 - 65%
Debt securities	43.2%	33.5%	30 - 50%
Cash and Equivalents	7.4%	2.9%	0 - 15%
Total	100.0%	100.0%	

Net periodic benefit cost for 2017, 2016 and 2015 included the following components:

	Pension Benefits		
	2017	2016	2015
Components of net periodic benefit cost			
Interest cost	$ 630	$ 650	$ 596
Expected return on plan assets	(720)	(782)	(840)
Amortization of actuarial loss	530	480	500
Net periodic benefit cost	440	348	256
Other changes in plan assets and benefit obligations recognized in other comprehensive income (loss)			
Net actuarial gain (loss) for the year	(159)	533	702
Amortization of net loss	(530)	(480)	(500)
Total recognized in other comprehensive income (loss)	(689)	53	202
Total recognized in net periodic benefit cost and other comprehensive income (loss)	$ (249)	$ 401	$ 458
Weighted average assumptions used to determine net periodic benefit cost for years ended December 31			
Discount rate	4.00%	4.28%	3.81%
Expected return on plan assets	6.25%	7.00%	7.00%

No contributions are expected to be funded by the Company during 2018.

Amounts in accumulated other comprehensive loss expected to be recognized in net periodic benefit cost in 2018 for the amortization of a net loss is $466.

The following estimated future benefit payments are expected in the years indicated:

	Pension Benefits
2018	$ 800
2019	830
2020	860
2021	890
2022	9,100
2023 - 2027	4,810

The Company sponsors a 401(k) defined contribution plan to provide eligible employees with additional income upon retirement. The Company's contributions to the plan are based on employee contributions. The Company's contributions totaled $7,182, $5,943 and $5,292 in 2017, 2016 and 2015, respectively.

The Company maintains a SERP for certain of its executive officers. The plan is a non-qualified deferred compensation plan administered by the Board of Directors of the Company, pursuant to which the Company makes quarterly cash contributions of a certain percentage of executive officers' compensation. Investments are self-directed by participants and can include Company stock. Upon retirement, participants receive their apportioned share of the plan assets in the form of cash.

Assets of the SERP consist of the following:

	December 31, 2017		December 31, 2016	
	Cost	Market	Cost	Market
Company stock	$ 1,960	$ 3,589	$ 1,958	$ 4,455
Equity securities	4,589	4,963	3,474	3,427
Total	$ 6,549	$ 8,552	$ 5,432	$ 7,882

The Company periodically adjusts the deferred compensation liability such that the balance of the liability equals the total fair market value of all assets held by the trust established under the SERP. Such liabilities are included in other long-term liabilities on the consolidated balance sheets. The equity securities are included in investments in the consolidated balance sheets and classified as trading equity securities. See Note 4, Investments, for additional information. The cost of the Company stock held by the plan is included as a reduction in shareholders' equity in the consolidated balance sheets.

The change in the fair market value of Company stock held in the SERP results in a charge or credit to selling, general and administrative expenses in the consolidated statements of income because the acquisition cost of the Company stock in the SERP is recorded as a reduction of shareholders' equity and is not adjusted to fair market value; however, the related liability is adjusted to the fair market value of the stock as of each period end. The Company recognized income of $575 in 2017 and expense of $1,742 and $241 in 2016 and 2015, respectively, related to the change in the fair value of the Company stock held in the SERP.

13. Derivative Financial Instruments

The Company is exposed to certain risks relating 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 instrument is recorded on the Company's consolidated balance sheets and is adjusted to fair value at each measurement date. The changes in fair value are recognized in the consolidated statements of income in the current period. The Company does not engage in speculative transactions nor does it hold or issue derivative financial instruments for trading purposes. The average U.S. dollar equivalent notional amount of outstanding foreign currency exchange contracts was $11,099 during 2017. At December 31, 2017, the Company reported $112 of derivative liabilities in other current liabilities. The Company reported $144 of derivative assets in other current assets and $89 of derivative liabilities in other current liabilities at December 31, 2016. The Company recognized, as a component of cost of sales, a net loss on the change in fair value of derivative instruments of $663 and $336 for the years ended December 31, 2017 and 2016, respectively. The Company recognized a net gain on the change in fair value of derivative instruments of $606 for the year ended December 31, 2015. There were no derivatives that were designated as hedges at December 31, 2017 or 2016.

14. Income Taxes

For financial reporting purposes, income before income taxes includes the following components:

	Year Ended December 31		
	2017	2016	2015
United States	$ 55,980	$ 87,326	$ 57,846
Foreign	1,237	(231)	(5,873)
Income before income taxes	$ 57,217	$ 87,095	$ 51,973

The provision for income taxes consists of the following:

	Year Ended December 31		
	2017	2016	2015
Current provision:			
Federal	$ 16,178	$ 30,623	$ 19,758
State	2,866	4,098	2,553
Foreign	874	907	255
Total current provision	19,918	35,628	22,566
Deferred provision (benefit):			
Federal	107	(2,653)	(1,183)
State	(455)	(1,213)	(275)
Foreign	57	345	(1,101)
Total deferred benefit	(291)	(3,521)	(2,559)
Total provision (benefit):			
Federal	16,285	27,970	18,575
State	2,411	2,885	2,278
Foreign	931	1,252	(846)
Total income tax provision	$ 19,627	$ 32,107	$ 20,007

The Company's income tax provision is computed based on the domestic and foreign federal statutory rates and the average state statutory rates, net of related federal benefit.

The provision for income taxes differs from the amount computed by applying the statutory federal income tax rate to income before income taxes. A reconciliation of the provision for income taxes at the statutory federal income tax rate to the amount provided is as follows:

	Year Ended December 31		
	2017	2016	2015
Tax at the statutory federal income tax rate	$ 20,026	$ 30,483	$ 18,191
Qualified production activity deduction	(1,661)	(1,641)	(1,174)
State income tax, net of federal income tax	1,520	1,876	1,386
Other permanent differences	551	673	393
Research and development tax credits	(855)	(785)	(291)
Valuation allowance impact	1,585	1,638	2,036
U.S. Tax Reform impact	(1,056)	--	--
Other items	(483)	(137)	(534)
Total income tax provision	$ 19,627	$ 32,107	$ 20,007

Deferred income taxes reflect the net tax effects of temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for income tax purposes.

Significant components of the Company's deferred tax assets and liabilities are as follows:

	December 31	
	2017	2016
Deferred tax assets:		
Inventory reserves	$ 4,287	$ 8,507
Warranty reserves	3,560	4,527
Bad debt reserves	299	456
State tax loss carryforwards	2,710	3,403
Accrued vacation	1,712	2,351
SERP	367	299
Deferred compensation	1,293	2,124
Restricted stock units	1,664	1,845
Pension and post-employment benefits	1,448	2,530
Foreign net operating losses	6,310	5,461
Other	2,478	2,516
Valuation allowances	(8,318)	(8,280)
Total deferred tax assets	17,810	25,739
Deferred tax liabilities:		
Property and equipment	14,562	20,167
Intangibles	769	1,244
Goodwill	654	1,605
Pension	758	1,205
Outside basis differences	--	511
Total deferred tax liabilities	16,743	24,732
Total net deferred assets	$ 1,067	$ 1,007

As of December 31, 2017, the Company has state net operating loss carryforwards of $17,579 and foreign net operating loss carryforwards of approximately $19,876, which will be available to offset future taxable income. If not used, these carryforwards will expire between 2018 and 2030. A significant portion of the valuation allowance for deferred tax assets relates to the future utilization of state and foreign net operating loss and state tax credit carryforwards. Future utilization of these net operating loss and state tax credit carryforwards is evaluated by the Company on a periodic basis and the valuation allowance is adjusted accordingly. In 2017, the valuation allowance on these carryforwards was increased by $7 due to the uncertainty about whether certain entities will realize their state and foreign net operating loss carryforwards. The Company has also determined that the recovery of certain other deferred tax assets is uncertain. The valuation allowance for these deferred tax assets was increased by $31 during 2017.

The following table represents a roll forward of the deferred tax asset valuation allowance for the years ended December 31, 2017, 2016 and 2015:

	Year Ended December 31		
	2017	2016	2015
Allowance balance, beginning of year	$ 8,280	$ 8,065	$ 6,029
Provision	1,585	1,639	2,036
Write-offs	(1,862)	(289)	--
Other	315	(1,135)	--
Allowance balance, end of year	$ 8,318	$ 8,280	$ 8,065

Undistributed earnings of the Company's Canadian subsidiary, Breaker Technology Ltd. ("BTL") and South African subsidiary, Osborn Engineered Products SA, (PTY), Ltd. ("Osborn") are considered to be indefinitely reinvested; accordingly, no provision for U.S. federal and state income taxes has been provided thereon. As of December 31, 2017, the cumulative amounts of undistributed GAAP earnings for BTL and Osborn are $4,026 and $28,249, respectively. A portion of these amounts may be subject to taxation under the one-time transition tax included in the Tax Cuts and Jobs Act of 2017. Based upon the provisions in the Tax Cuts and Jobs Act of 2017, any future qualified dividends out of these amounts will not be subject to U.S. income taxes. However, upon any future inclusion as

Subpart F income or capital gains, the Company would be subject to additional U.S. income taxes (subject to an adjustment for foreign tax credits). Upon any repatriation, withholding taxes due to the foreign jurisdictions may have to be paid. At this time, it is not practicable to determine the amount of the unrecognized deferred tax liability for temporary differences related to investments in foreign subsidiaries.

The Company files income tax returns in the U.S. federal jurisdiction, and in various state and foreign jurisdictions. The Company is no longer subject to U.S. federal income tax examinations by authorities for years prior to 2014. With few exceptions, the Company is no longer subject to state and local or non-U.S. income tax examinations by authorities for years prior to 2012.

The Company has a liability for unrecognized tax benefits of $365 and $238 (excluding accrued interest and penalties) as of December 31, 2017 and 2016, respectively. The Company recognizes interest and penalties accrued related to unrecognized tax benefits in tax expense. The Company recognized tax benefits of $22 and $16 in 2017 and 2016, respectively, for penalties and interest related to amounts that were settled for less than previously accrued. The net total amount of unrecognized tax benefits that, if recognized, would affect the Company's effective tax rate is $370 and $238 at December 31, 2017 and 2016, respectively. The Company does not expect a significant increase or decrease to the total amount of unrecognized tax benefits within the next twelve months.

A reconciliation of the beginning and ending unrecognized tax benefits excluding interest and penalties is as follows:

	Year Ended December 31		
	2017	2016	2015
Balance, beginning of year	$ 238	$ 603	$ 2,585
Additions for tax positions related to the current year	127	73	206
Additions for tax positions related to prior years	--	162	549
Reductions due to lapse of statutes of limitations	--	(16)	(162)
Decreases related to settlements with tax authorities	--	(584)	(2,575)
Balance, end of year	$ 365	$ 238	$ 603

The December 31, 2017 balance of unrecognized tax benefits includes no tax positions for which the ultimate deductibility is highly certain but the timing of such deductibility is uncertain. Accordingly, there is no impact to the deferred tax accounting for certain tax benefits.

On December 22, 2017, the Tax Cuts and Jobs Act of 2017 (the "Tax Act") was signed into law making significant changes to the Internal Revenue Code. Changes include, but are not limited to, a federal corporate tax rate decrease from 35% to 21% for tax years beginning after December 31, 2017, the transition of U.S international taxation from a worldwide tax system to a territorial system and a one-time transition tax on the mandatory deemed repatriation of foreign earnings. The Company's fourth quarter 2017 provision for income taxes was reduced by $1,056, (comprised of a $1,548 reduction in income tax expense recorded in connection with the remeasurement of deferred tax assets and liabilities and $492 of additional income tax expense recorded in connection with the transition tax on the mandatory deemed repatriation of foreign earnings) due to applying the provisions of the Tax Act.

On December 22, 2017, Staff Accounting Bulletin No. 118 ("SAB 118") was issued to address the application of U.S. GAAP in situations when a registrant does not have the necessary information available, prepared, or analyzed (including computations) in reasonable detail to complete the accounting for certain income tax effects of the Tax Act. In accordance with SAB 118, the Company determined that the $492 additional 2017 income tax expense is a provisional amount and constitutes a reasonable estimate at December 31, 2017, based upon the best information currently available. The ultimate impact may differ from the provisional amount, possibly materially, due to, among other things, additional analysis, changes in interpretations and assumptions the Company has made, additional regulatory guidance that may be issued and actions the Company may take as a result of the Tax Act. Any subsequent adjustment to the amount will be recorded to current income tax expense when the analysis is complete, which is expected in 2018 shortly after the filing of the Company's 2017 U.S. income tax return.

While the Tax Act provides for a territorial tax system, beginning in 2018, it includes two new U.S. tax base erosion provisions, the global intangible low-taxed income ("GILTI") provisions and the base-erosion and anti-abuse tax ("BEAT") provisions.

The GILTI provisions require the Company to include, in its U.S. income tax return, foreign subsidiary earnings in excess of an allowable return on the foreign subsidiary's tangible assets. The Company has elected to account for GILTI tax in the period in which it is incurred, and therefore, has not provided any deferred tax impacts of GILTI in its consolidated financial statements for the year ended December 31, 2017.

The BEAT provisions in the Tax Act eliminates the deduction of certain base-erosion payments made to related foreign corporations, and impose a minimum tax, if greater than regular tax. The Company does not expect it will be subject to this tax, and therefore, has not included any tax impacts of BEAT in its consolidated financial statements for the year ended December 31, 2017.

The changes to existing U.S. tax laws as a result of the Tax Act, which we believe have the most significant impact on the Company's federal income taxes are as follows:

Reduction of the U.S. Corporate Income Tax Rate: The Company measures deferred tax assets and liabilities using enacted tax rates that will apply in the years in which the temporary differences are expected to be recovered or paid. Accordingly, the Company recognized a deferred tax benefit and related increase in deferred tax assets of $1,548 in its 2017 consolidated financial statements due to the remeasurement necessitated by the Tax Act's provision reducing the reduction in the U.S. corporate income tax rate from 35% to 21%. This benefit is attributable to the Company being in a net deferred tax liability position when considering only U.S. federal deferred items. The Company has significant deferred tax assets related to foreign jurisdictions and U.S. state income taxes.

Transition Tax on Foreign Earnings: The Company recognized a provisional income tax expense of $492 for the year ended December 31, 2017 related to the one-time transition tax on certain foreign earnings. The determination of the transition tax requires further analysis regarding the amount and composition of the Company's historical foreign earnings and foreign taxes, which is expected to be completed in 2018.

Repeal of Domestic Production Activities Deduction: While not effective until 2018, the Tax Act repeals the Domestic Production Activities Deduction ("DPAD") previously provided under IRC §199. The DPAD benefit has historically been very material to the Company's federal income taxes. The DPAD benefits included in the effective tax rate reconciliations for 2017, 2016 and 2015 were $1,661, $1,641 and $1,174, respectively.

15. Contingent Matters

Certain customers have financed purchases of Company products through arrangements in which the Company is contingently liable for customer debt of $3,805 at December 31, 2017. These arrangements expire at various dates through December 2020 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. The Company has recorded a liability of $836 related to these guarantees as of December 31, 2017.

In addition, the Company is contingently liable under letters of credit issued by a lender totaling $9,757 as of December 31, 2017, including $3,200 of letters of credit guaranteeing certain Astec Brazil bank debt. The outstanding letters of credit expire at various dates through October 2020. As of December 31, 2017, the Company's foreign subsidiaries are contingently liable for a total of $3,557 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 $13,314 as of December 31, 2017.

The Company has a sales contract with the purchaser of a large wood pellet plant, on which revenues of $7,987 and $135,187 were recorded in 2017 and 2016, respectively. As the plant has not yet met the production output and the operational specifications set forth in the original contract, as amended through December 31, 2017, the Company entered into a contract amendment in February 2018, whereby the Company agreed to compensate the customer for production shortfalls caused by the Company and other potential costs (depending upon the market price of wood pellets), from January 1, 2018 through June 15, 2018. The Company incurred production shortfalls in January and February 2018.

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.

16. Shareholders' Equity

The Company rewards key members of management with restricted stock units ("RSUs") each year based upon the financial performance of the Company and its subsidiaries. Under the terms of the Company's shareholder-approved 2011 Incentive Plan, up to 700 shares of newly-issued Company stock is available for awards. Awards granted in 2016 and prior 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, while awards granted after 2016 are scheduled to have a three-year vesting period. 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. The fair value of the RSUs vested during 2017, 2016 and 2015 was $1,991, $3,289 and $2,785, respectively. The grant date tax benefit was increased by $290, $220 and $336, respectively, upon the vesting of RSUs in 2017, 2016 and 2015.

Compensation expense of $2,978, $2,426 and $1,019 was recorded in the years ended December 31, 2017, 2016 and 2015, respectively, to reflect the fair value of RSUs granted (or anticipated to be granted for 2017 performance) amortized over the portion of the vesting period occurring during the period. Related income tax benefits of $1,132, $934 and $362 were recorded in 2017, 2016 and 2015, respectively. Based upon the grant date fair value of RSUs, it is anticipated that $5,210 of additional compensation costs will be recognized in future periods through 2021 for RSUs earned through December 31, 2017. The weighted average period over which this additional compensation cost will be expensed is 2.6 years. RSUs do not participate in Company-paid dividends.

Changes in restricted stock units during the year ended December 31, 2017 are as follows:

	2017	Weighted Average Grant Date Fair Value
Unvested restricted stock units, beginning of year	112	$ 41.48
Units granted	83	65.20
Units forfeited	(3)	53.11
Units vested	(31)	43.51
Unvested restricted stock units, end of year	161	53.09

The grant date fair value of the restricted stock units granted during 2017, 2016 and 2015 was $5,399, $1,946 and $937, respectively.

17. Operations by Industry Segment and Geographic Area

The Company has three reportable segments, each of which is comprised of multiple business units that offer similar products and services and meet the requirements for aggregation. A brief description of each segment is as follows:

Infrastructure Group - This segment consists of five business units, three of which design, engineer, manufacture and market a complete line of portable, stationary and relocatable hot-mix asphalt plants, wood pellet plants, asphalt pavers, material transfer vehicles, soil stabilizing – reclaiming machinery, milling machines, paver screeds and related ancillary equipment. The other two business units in this segment primarily operate as Company-owned dealers in the foreign countries in which they are domiciled. These two business units sell, service and install products produced by the manufacturing subsidiaries of the Company, and a majority of their sales are to customers in the infrastructure industry. The principal purchasers of the products produced by this group are asphalt producers, highway and heavy equipment contractors, wood pellet processors and foreign and domestic governmental agencies. The Infrastructure Group had sales to one pellet plant customer totaling $7,987, or 0.7% of total Company sales in 2017 and $135,187, or 11.8% of total Company sales in 2016. Portions of the equipment sold to this customer were manufactured by each of the Company's segments.

Aggregate and Mining Group - This segment consists of eight business units that design, engineer, manufacture and market a complete line of jaw crushers, cone crushers, horizontal shaft impactors, vertical shaft impactors, material handling, roll rock crushers and stationary rockbreaker systems, vibrating feeders and high frequency vibrating screens, conveyors, inclined, vertical and horizontal screens and sand classifying and washing equipment. 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.

Energy Group - This segment consists of six business units that design, engineer, manufacture and market a complete line of drilling rigs for the oil and gas, geothermal and water well industries, high pressure diesel pump trailers for fracking and cleaning oil and gas wells, concrete plants, commercial and industrial burners, combustion

control systems, a variety of industrial heaters to fit a broad range of applications including heating equipment for refineries, roofing material plants, chemical processing, rubber plants, oil sands and energy related processing, heat transfer processing equipment, thermal fluid storage tanks, waste heat recovery equipment, whole-tree pulpwood and biomass chippers and horizontal grinders. The principal purchasers of products produced by this group are oil, gas and water well drilling industry contractors, processors of oil, gas and biomass for energy production, ready mix concrete producers and contractors in the construction and demolition recycling markets. This group includes the operations of RexCon, Inc., which was acquired in October 2017.

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, Astec Industries, Inc., and a captive insurance company. The Company evaluates performance and allocates resources to its operating segments based on profit or loss from operations before U.S. federal income 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 for 2017

	Infrastructure Group	Aggregate and Mining Group	Energy Group	Corporate	Total
Revenues from external customers	$ 553,691	$ 403,720	$ 227,328	$ --	$ 1,184,739
Intersegment revenues	25,965	16,209	24,877	--	67,051
Interest expense	49	634	9	148	840
Depreciation and amortization	7,581	9,363	7,904	954	25,802
Income taxes	1,318	462	491	17,356	19,627
Profit (loss)	26,641	35,748	16,219	(40,963)	37,645
Assets	666,651	558,684	304,158	390,300	1,919,793
Capital expenditures	7,424	9,194	3,540	604	20,762

Segment information for 2016

	Infrastructure Group	Aggregate and Mining Group	Energy Group	Corporate	Total
Revenues from external customers	$ 608,908	$ 359,760	$ 178,763	$ --	$ 1,147,431
Intersegment revenues	16,957	35,031	24,946	--	76,934
Interest expense	31	948	4	412	1,395
Depreciation and amortization	7,205	10,033	6,655	920	24,813
Income taxes	3,033	664	437	27,973	32,107
Profit (loss)	71,482	34,877	4,145	(55,992)	54,512
Assets	657,225	518,351	271,121	417,351	1,864,048
Capital expenditures	14,451	7,437	5,018	178	27,084

Segment information for 2015

	Infrastructure Group	Aggregate and Mining Group	Energy Group	Corporate	Total
Revenues from external customers	$ 428,737	$ 370,813	$ 183,607	$ --	$ 983,157
Intersegment revenues	22,947	28,701	16,010	--	67,658
Interest expense	258	1,005	10	338	1,611
Depreciation and amortization	6,907	10,719	5,553	899	24,078
Income taxes	1,224	764	(129)	18,148	20,007
Profit (loss)	33,890	30,690	3,609	(36,623)	31,566
Assets	567,936	496,089	256,978	306,511	1,627,514
Capital expenditures	8,043	8,807	4,049	389	21,288

The totals of segment information for all reportable segments reconciles to consolidated totals as follows:

	2017	2016	2015
Net income attributable to controlling interest			
Total profit for reportable segments	$ 78,608	$ 110,504	$ 68,189
Corporate expenses, net	(40,963)	(55,992)	(36,623)
Net loss attributable to non-controlling interest	205	171	831
Recapture (elimination) of intersegment profit	(55)	476	400
Total consolidated net income attributable to controlling interest	$ 37,795	$ 55,159	$ 32,797
Assets			
Total assets for reportable segments	$ 1,529,493	$ 1,446,697	$ 1,321,003
Corporate assets	390,300	417,351	306,511
Elimination of intercompany profit in inventory	(7,075)	(7,020)	(7,496)
Elimination of intercompany receivables	(717,873)	(688,369)	(583,834)
Elimination of investment in subsidiaries	(303,209)	(272,766)	(223,500)
Other eliminations	(2,057)	(52,292)	(35,331)
Total consolidated assets	$ 889,579	$ 843,601	$ 777,353

Sales into major geographic regions were as follows:

	Year Ended December 31		
	2017	2016	2015
United States	$ 932,294	$ 941,273	$ 722,287
Canada	65,509	37,539	54,321
Australia and Oceania	40,201	29,948	29,995
Africa	36,847	31,557	45,671
Other European Countries	18,679	19,198	23,867
South America (excluding Brazil)	18,562	28,204	32,454
Russia	13,609	3,185	8,466
Brazil	10,478	4,300	8,376
Other Asian Countries	10,286	6,926	9,513
Mexico	8,508	13,489	6,990
China	6,113	4,595	1,330
Post-Soviet States (excluding Russia)	5,951	3,293	8,345
Middle East	4,881	3,403	18,995
Japan and Korea	4,760	10,825	3,574
West Indies	3,421	2,994	1,532
Central America (excluding Mexico)	2,929	5,904	4,404
India	1,026	318	2,706
Other	685	480	331
Total foreign	252,445	206,158	260,870
Total consolidated sales	$ 1,184,739	$ 1,147,431	$ 983,157

Long-lived assets by major geographic region are as follows:

	December 31	
	2017	2016
United States	$ 158,683	$ 151,470
Brazil	11,114	11,288
Northern Ireland	6,342	4,279
South Africa	5,684	5,372
Australia	4,532	4,234
Canada	2,893	2,860
Germany	1,148	1,035
Total foreign	31,713	29,068
Total	$ 190,396	$ 180,538

18. Accumulated Other Comprehensive Loss

The after-tax components comprising accumulated other comprehensive loss is summarized below:

	December 31	
	2017	2016
Foreign currency translation adjustment	$ (21,140)	$ (27,839)
Unrecognized pension and post-retirement benefit cost, net of tax of $2,192 and $2,261, respectively	(3,103)	(3,723)
Accumulated other comprehensive loss	$ (24,243)	$ (31,562)

See Note 12, Pension and Retirement Plans, for discussion of the amounts recognized in accumulated other comprehensive loss related to the Company's Kolberg-Pioneer, Inc. defined pension plan.

19. Other Income

Other income consists of the following:

	Year Ended December 31		
	2017	2016	2015
Investment loss	$ (96)	$ (276)	$ (381)
Licensing fees	651	546	641
Income from life insurance policies	--	--	1,204
Other	663	259	1,591
Total	$ 1,218	$ 529	$ 3,055

20. Business Combinations

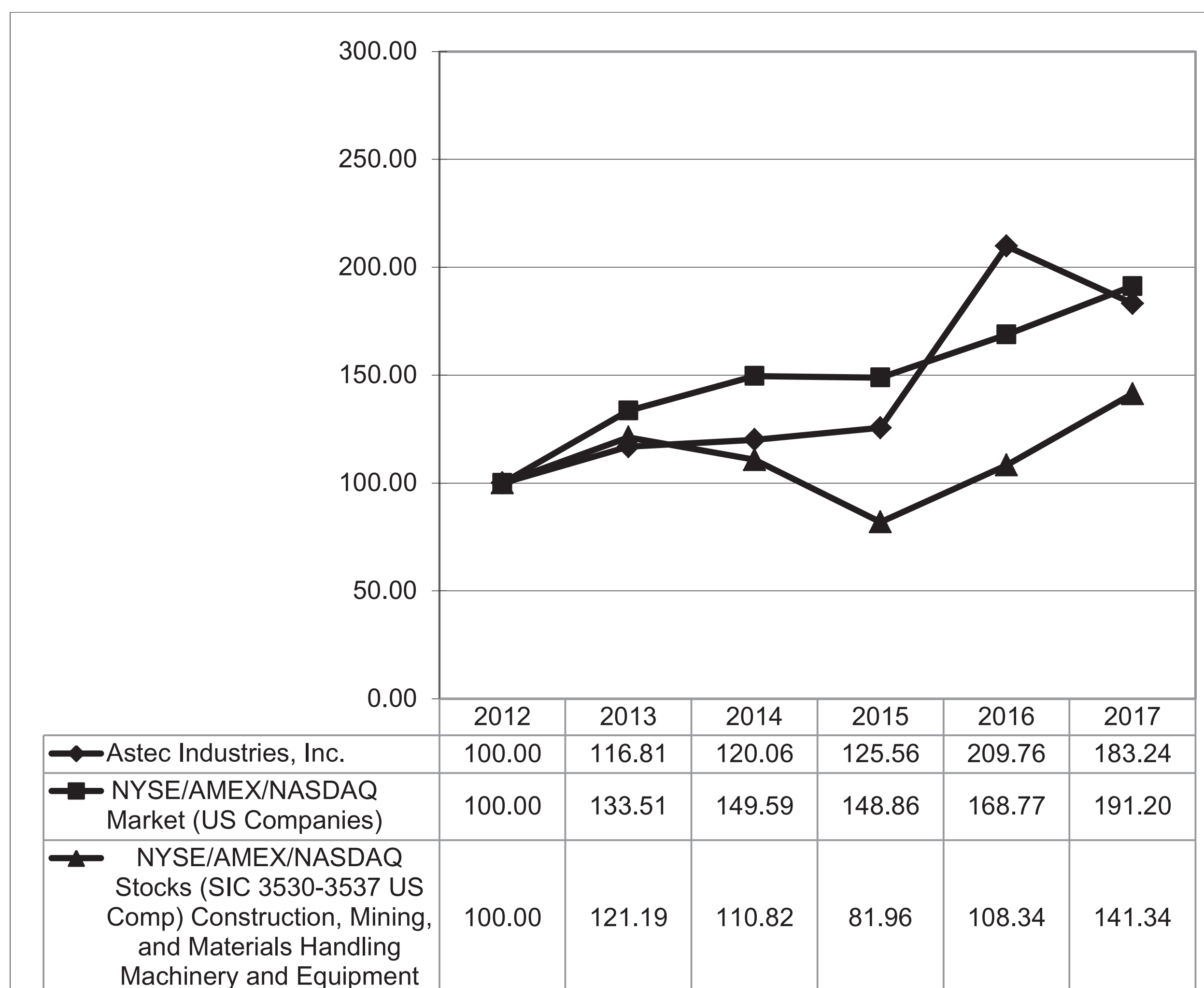
In October, 2017, the Company acquired substantially all of the assets and liabilities of RexCon, Inc. ("RexCon") for a total purchase price of $26,443. The purchase price was paid in cash with $3,000 deposited into escrow for a period of time not to exceed 18 months pending final resolution of certain post-closing adjustments and any indemnification claims. The Company's preliminary allocation of the purchase price includes the recognition of $3,488 of goodwill and $7,778 of other intangible assets consisting of non-compete agreements (5-year useful life), technology (19-year useful life), trade names (15-year useful life), and customer relationships (18-year useful life). The revenues and results of operations of RexCon were not significant in relation to the Company's consolidated financial statements for the period ended December 31, 2017 and would not have been material on a proforma basis to any earlier period. RexCon's operating results are included in the Company's Energy Group beginning in the fourth quarter of 2017.

RexCon, located in Burlington, Wisconsin was founded in 2003 through an asset acquisition with the original company founded over 100 years ago. RexCon is a manufacturer of high-quality stationary and portable, central mix and ready mix concrete batch plants, concrete mixers and concrete paving equipment. RexCon specializes in providing portable, high-production concrete equipment to contractors and producers worldwide in a totally integrated turnkey production system, including customized site layout and design engineering, batch plants, mixers, water heaters and chillers, ice production and delivery systems, material handling conveyors, gensets and power distribution, cement silos and screws, central dust collection, aggregate heating and cooling systems, batch automation controls and batch office trailers.

In August 2016, the Company acquired substantially all of the assets and certain liabilities of Power Flame Incorporated ("PFI") for a total purchase price of $39,765. The purchase price was paid in cash with $4,000 deposited into escrow for a period of time not to exceed two years pending final resolution of certain post-closing adjustments and any indemnification claims. The Company's allocation of the purchase price resulted in the recognition of $12,632 of goodwill and $17,990 of other intangible assets consisting of technology (19 year useful life), trade names (15 year useful life) and customer relationships (18 year useful life). The revenues and results of operations of PFI were not significant in relation to the Company's consolidated financial statements for the period ended December 31, 2016 and would not have been material on a proforma basis to any earlier period. PFI's operating results are included in the Energy Group beginning in the third quarter of 2016.

PFI, located in Parsons, Kansas, began operations in 1948 and manufactures and sells gas, oil and combination gas/oil and low NOx burners with outputs ranging from 400 thousand BTU's per hour to 120 million BTU's per hour as well as combustion control systems designed for commercial, industrial and process heating applications.

Comparison of 5 Year Cumulative Total Return Assumes Initial Investment of $100 Performance Graph for Astec Industries, Inc.



	2012	2013	2014	2015	2016	2017
Astec Industries, Inc.	100.00	116.81	120.06	125.56	209.76	183.24
NYSE/AMEX/NASDAQ Market (US Companies)	100.00	133.51	149.59	148.86	168.77	191.20
NYSE/AMEX/NASDAQ Stocks (SIC 3530-3537 US Comp) Construction, Mining, and Materials Handling Machinery and Equipment	100.00	121.19	110.82	81.96	108.34	141.34

Notes:

A. Data complete through last fiscal year.
B. Corporate Performance Graph with peer group uses peer group only performance (excludes only company).
C. Peer group indices use beginning of period market capitalization weighting.
D. Prepared by Zacks Investment Research, Inc. Used with permission. All rights reserved Copyright 1980-2018.
E. Calculated (or Derived) based from CRSP NYSE/AMEX/NASDAQ Market (US Companies), Center for Research in Security Prices (CRSP®), Graduate School of Business, The University of Chicago. Copyright 2018. Used with permission. All rights reserved.
F. The graph assumes $100 invested at the closing price of the Company's common stock on December 31, 2012 and assumes that all dividends were invested on the date paid.

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The form 10-K, as filed with the Securities and Exchange Commission, may be obtained at no cost by any shareholder upon written request to Astec Industries, Inc., Attention Investor Relations.

The Company's Code of Conduct is posted at www.astecindustries.com.

The Annual Meeting will be held on April 26, 2018, at 10:00 A.M. EST in the Training Center of Astec, Inc. located at 4101 Jerome Avenue, Chattanooga, TN 37407.

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