


LIGHT METAL AGE

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- A photograph of a factory interior. In the foreground, there are several large stacks of black, rectangular aluminum extrusion profiles. A man wearing a bright green long-sleeved shirt and safety glasses is standing to the right, holding a measuring tape against one of the profiles. In the background, there is industrial machinery, including a large red overhead crane and a control panel with the letters 'S3T' on it. The lighting is bright, coming from overhead industrial lights.
- Unlocking Extrusion Secrets
 - Aluminum Profiles for All Powertrains



Dee Zee Installs New Powder Coating Line *Vertical Configuration Accommodates Longer Profiles*

Dee Zee is a manufacturer of components and accessories for the automotive market. In line with its focus on continuous improvement, innovation, and technology, the company expanded its operation with a new vertical powder coating line at its Broadway campus in Iowa. The line was installed in February 2025, with commissioning currently in progress and expected to be completed by April.

One of the main reasons for the expansion project was the changing sizes of the products being manufactured. The company was operating four powder coat lines, which hung most parts in a horizontal configuration, limiting the length of profile that could be processed. "Our products have gotten longer," said Kelli Gallagher, president of Dee Zee. "Our products go from wheel well to wheel well on the vehicle. Vertical powder coating offers an opportunity to maximize space and throughput."

Company Profile

Dee Zee was founded by Denny Elwell and Zane Smith in 1977 after they won a contract to produce a traditional brite-tread running board. The company kicked off as an aftermarket running board and truck accessory company. In 1991, Dee Zee became a Tier 1 supplier for automotive OEMs, growing its business into new applications. Today, the company is known for a variety of automotive products, with side steps, tool boxes, transfer tanks, roof rails, cab racks, bed mats, cross bars, bed protection, and ladder racks being among the largest categories. Following a series of ownership transitions, the Ron Shivers family acquired the business in 2008 and has held it ever since.

"Dee Zee is a second-generation family-owned business in the heart of America," said Gallagher. "We have over 1,100 team members and are focused on making a difference. We mainly supply the automotive industry. We ship all over Canada, Mexico, and North America, delivering our products to warehouse distributors, jobbers, OEM factories, dealers, and ports."

Dee Zee is a vertically aligned operation with nine facilities located in the Greater Des Moines area. The company's main plant houses two powder coat lines (primarily coating tool boxes and transfer tanks), and their VIA (vertically integrated aluminum) extrusion plant with a 9 inch press and aftermarket warehouse are strategically positioned nearby for transportation efficiencies. The Pleasant Hill campus includes three buildings specializing in tool and die, stamping, powder coating, e-coating, and structures production, while the Broadway campus focuses on OEM production and logistics. Dee Zee also has locations in China and Thailand to accommodate different OEM programs, as well as the foundation in place for an additional building on the Broadway campus. The company has a retail outlet store in Des Moines for sale of aftermarket overstocks and factory seconds.

Project Planning

Dee Zee went through a thorough planning process for purchase of its new vertical powder coating line. First, the company performed a needs assessment to clearly identify the business opportunities the project would address, as well as determine the scope of the project (including the type, size, quantity of equipment needed, budget, timeline, and key performance indicators). Following this assessment, the company began researching potential suppliers based on their experience and reputation. Each supplier was evaluated, considering their technical capabilities, customer service, and ability to meet Dee Zee's needs.

"After reviewing multiple quotes and systems, SAT's vertical powder coating system was the best fit for our needs," said Shawn Loney, head of automation at Dee Zee. "SAT has a strong reputation and over 40 years of experience with this type of system."

In addition to selecting the equipment, Dee Zee needed to prepare the building for the line at its Broadway campus. "Due to pre-existing building plans and the height of the equipment, we had to be sure the line would fit

between building roof rafters, so we installed trenches in the building floor to accommodate machine wiring and plumbing," noted Loney. Additional considerations included incorporating a staging area housing 16 containers of parts and equipment, as well as installing cranes, forklifts, and man lifts.

New Powder Coating Line

The vertical powder coating line represents an important development for SAT, as it is designed to process a different profile length. Generally, the company designs lines for "classic" extrusion markets, with profiles ranging from 20 to 30 ft in length. However, Dee Zee had specific length requirements. Therefore, SAT adapted their technologies to optimize the coating of these parts. As a result, the new vertical powder coating line is able to coat extrusions up to 16 ft in length, with dimensions of 6 x 6 inches square or 4 x 12 inches rectangle.

The line includes a pretreatment tunnel, C-Expert booth, curing oven, and unloader, along with automation systems. The pretreatment tunnel provides both cascade rinsing and sprayers. It is able to manage different chemical schedules, as required by the particular profile. "By hanging the profiles vertically and having a ten-stage wash system with a cascade rinse on each stage, more of our process contamination will be cleaned off of the product," said Loney. "This will result in cleaner wash tanks and less carryover on our parts before the painting process."

Following pretreatment, the profiles enter the C-Expert booth with GEMA powder coating guns, which optimizes the coating process and allows for powder to be reclaimed and reused. The GEMA CM 4.0 automation system combined with Visicoat (a system that automati-

cally scans and recognizes every profile loaded on the line) enhances the coating process, enabling the powder to penetrate every area of the profile, including difficult recesses, while maintaining high conveyor speeds. "These systems automate the oven settings and allow the powder coating booth to adjust on the fly based off of the part," said Loney. "There is no need to stop the line for these changes."

In addition, the line features a curing oven with lower fans that are designed to optimize air flow and provide contamination-free curing, an automated unloader, and an inductive hook cleaning unit, which is able to clean the hooks without having to remove them from the conveyor. Altogether, the advanced systems of the vertical powder coating line improve the "first time through" metric, resulting in less reworking of profiles due to contamination and carry over.

Conclusion

The new vertical powder coating line installed at Dee Zee's Broadway campus increases capacity and improves the painting of long products. It also improves operational efficiencies and throughput, allowing for more capacity growth. This investment is in line with the company's innovation and goals to better support its customers. Additional projects include the recent construction of a building at the Pleasant Hill campus for growth into "structures" products for OEMs and plans for an additional building at the Broadway campus to further expand the company's capabilities. "We will continue to develop and produce affordable quality products with timely delivery," said Gallagher. "In addition, we are collaborating closely with our customers to meet their needs." ■



Vertical Powder Coating for Alu Extrusions

Three, two, one.. Pow(d)er!



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