

CASE STUDY:

MAAS Brothers Powder Coating

Saying Yes To Customers

"People often assume automated powder coating efficiencies only work for long runs -- the same kind of parts, coated in the same color, all day long. For some customers that meant the only available option was batch. Then we added a quick color change booth with powder reclaim capability. It feels good to say... yes to customers!"

Kevin Maas, Owner

As of 2016, the North American powder coating market size reached 1.91 billion USD and is expected to grow at a rate of 6.8% before reaching a market size of 3.6 billion USD in 2025. Advances in automated technology and ecologically friendly processes have allowed US-based powder coating companies to adapt to consumer needs like never before. While the offshore market is still larger, choosing to stay in the US can lower logistics costs, shorten the turnaround time, improve quality, and allow both short and large production runs.¹

WHAT IS POWDER COATING?

Powder coating is a finishing process used to produce a clean, thick coating that both adds visual appeal and protects the part from wear and tear and corrosion. In its most basic form, a dry powder is electrostatically charged and sprayed over a piece of grounded metal. That is, the powder is given a negative charge which allows it to stick to the part of interest. After spraying, the part is placed in an oven to cure. Compared to liquid paint, this process is more uniform and doesn't leave drips or streak marks. Many parts only require one coat of powder, which saves over other coating options. The finish tends to be thicker and more protective than that of typical paint. The automated powder coating equipment start-up costs are high, however, which is why specialized outsourced facilities can be more economical than in-house production.



MAAS BROTHERS

Maas Brothers has been dedicated to problem-solving and process improvement since Kevin and Kraig Maas founded the company in 1998 in Livermore, California. Customers are always invited to stop by, meet the founders, and take a tour of the facilities.

Kevin and Kraig's hands-on approach keeps them in direct contact with their customers and the powder coating services they need, and that in turn informs the equipment investments they make to keep their automated powder coating facility the largest and most agile in the San Francisco Bay area.

Maas Brothers has a one-of-a-kind automated powder coating system engineered to cost-effectively handle large and small runs of any color with powder recapture. Maas Brothers' system also incorporates in-line automated two-coat performance powder process options to meet project specs that include priming, non-standard coat thickness or other functional powder coating needs with one turn along the conveyor system.

The production line starts with a 5-stage closed loop wash/pretreatment system. This section uses both reverse osmosis and deionization filters to reuse all the water used in the washing process – a closed system that is both eco-friendly and economical.

There are several powder coating booths and two IR ovens on the line. For two-coat needs, the first of two infrared ovens serves to pre-gel the first coat, followed by a cooling tunnel that then brings the parts to the appropriate temperature to allow them to immediately receive another coat, nearly halving the amount of time that would otherwise be necessary to accommodate two coats.

Maas Brothers has a unique quick color change booth with powder reclaim capabilities. Powder color can be changed in under 10 minutes, as opposed to hours with other automated systems. The powder reclaim technology saves customers material costs by capturing and reusing up to 50% of powder that would otherwise go to waste.

The second infrared oven is in place just prior to the convection curing oven. It serves to pre-gel powder on parts before they enter the curing oven which allows Maas Brothers to space parts with different powder colors closer together without risk of cross-contamination during the curing process. This increases throughput and reduces costs — a savings that is passed along to customers.





CONSISTENT QUALITY

Every customer is looking for consistency — parts delivered coated as promised, job after job. At Maas Brothers, that starts with taking the time to fully understand each job's functional and aesthetic coating needs. They then test sample parts to design a repeatable process to achieve those specifications, including part preparation steps and a plan for which features of their automated powder coating line need to be deployed.

As part of this initial testing, Maas Brothers often customizes hanging fixtures that ensure both the needed coating quality and cost-saving maximum throughput.

Maas Brothers' commitment to delivering consistent results includes multiple quality assurance checkpoints throughout their process to catch any issues early. Parts are inspected when they arrive to the shop and during part prep, and again when the parts are hung on the line. The parts are also checked as they go into and out of the powder coating booths, as they exit the curing oven, and as they're repackaged back to the customer.

ALTERNATIVE TO OFFSHORING

Maas Brothers' innovative automated conveyor system and open collaboration with customers sets them apart from offshoring alternatives. Being located within the US saves on logistics costs, reduces lead time to market, and ensures consistent high-quality results. Maas Brothers is also dedicated to being ecologically friendly, as evidenced by their constant efforts to reduce waste and improve the recycling of materials. Communication with customers is enhanced. Kevin and Kraig work directly with their customers to ensure prompt response and quality products to all who choose to work with them.

Reshoring is trending upward in the U.S., particularly after risks in global supply chains were exposed during the pandemic. In addition to bringing manufacturing back to America, more industrial buyers are placing orders with US suppliers for parts and services that are completed here.

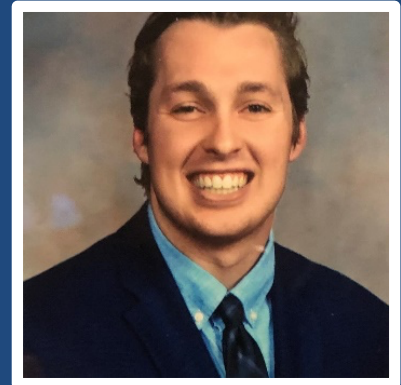
Maas Brothers Powder Coating is an excellent example of the increasing preference for quality goods and services that can be purchased in America.

¹"North America Powder Coatings Market Size, Share, and Trends Analysis Report", Grand View Research, Feb 2019, <https://www.grandviewresearch.com/industry-analysis/north-america-powder-coatings-market>

²Royce Rowe, "Benefits of Powder Coating", Keystone Coating, Aug 2020, <https://www.keystonecoating.com/blog/powder-coating-benefits/>

ABOUT THE AUTHOR

Henry Smith is a student at the University of California, Berkeley pursuing a Bachelor of Science in Mechanical Engineering & Materials Science and Engineering. Throughout his collegiate internships, he has worked in the supply chain connecting consumers to suppliers, and in the aeronautics industry working on experimental prototypes.



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