

## CASE HISTORY

# Certified to grow: Job shop adds new powder coating capabilities to keep business booming

As its manufacturing customer base continued to shrink, Trojan Powder Coating on Long Island, N.Y., decided to take action. The job shop upgraded and diversified its powder capabilities to include the architectural market.

**T**rojan Powder Coating, one of the largest powder coaters on the East Coast, finishes any number of products in dozens of colors from a variety of small and large customers. The coater has one main coating line, several smaller lines, and three offline booths, and does extensive assembly and packaging.

For nearly 20 years, two roll-on/roll-off powder booths with reclaim capabilities served as the focal point on Trojan's main powder coating line. Color changes meant disconnecting one booth, rolling it off, and connecting the second booth. The color-change process could take anywhere from 20 minutes to 1 hour. With four to 12 color changes daily, the main line experienced a lot of downtime. Trojan would typically run two shifts with the line in use more than 12 hours each day.

Labor and material costs concerned Trojan, but finish quality occupied an even bigger focus. Trojan wanted to become an approved applicator by major powder manufacturers for architectural coatings. To be certified, it had to have exact control of mil thickness—something it didn't have. Trojan also experienced an orange-peel effect with an uneven surface texture on some of the products it coated.

Trojan knew the time had come to replace its nearly 20-year-old powder booths and upgrade the powder coating system on its main line.

Trojan analyzed its options and decided the Nordson ColorMax® powder system would be the best choice. Because the investment in



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the new system also meant having to build a pit for the system and adding an extension to its building, Trojan wanted to be certain it was making the right decision. “We took 2 years to decide,” said Carl Troiano, president of Trojan Powder Coating. “We were not totally convinced of the payback until we actually saw the system at a few trade shows.”

### Payback time

With the new system up and running for nearly 3 years, Troiano is completely convinced the investment was worth it. He said faster color changes and material savings led to a payback period of 15 months. Color changes with powder

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reclaim that used to take 20 minutes to an hour now average 10 to 15 minutes, which has helped Trojan dramatically reduce lost production time. Production schedules that once consumed two shifts and

more than 12 hours of line time can now be done in one 8-hour shift. Trojan has also reduced powder use by 40 percent, increased line speed by 25 percent for most products, and increased product line density.

The system has several features that provide faster color changes and reduced powder use compared with the previous coating system. A nonconductive booth and canopy reduces powder retention so that it is easier to clean, an air distribution system uses high air velocities to contain powder in the airstream, and air knives reduce powder-in-process. Hinged cyclone sections provide access for inspection and cleaning.

A powder feed system supplies the spray guns and also automatically recovers, sieves, and recycles powder overspray for improved material use and reduced loss. Troiano said the new system has also created a much cleaner working environment because it successfully contains the powder overspray.

The powder booth accommodates parts 24 feet long, 3<sup>2</sup>/<sub>3</sub> feet wide, and 6 feet tall. Trojan plans to increase the booth opening to accommodate parts 8 feet tall. Trojan uses a five-stage wash process for pretreatment, an 80-foot-long dry-off oven and cooling area, and a 130-foot-long curing oven on this 800-foot-long conveyor line. The system uses 18 automatic and two manual Nordson Sure Coat<sup>®</sup> guns. Automatic feedback controls on the guns are helping Trojan achieve



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*Color changes now average 10 to 15 minutes (from 20 to 60 minutes before), which has reduced lost production time. Production schedules that used to demand two shifts and more than 12 hours of line operation now are done in one 8-hour shift.*



higher, more consistent transfer efficiency

### **A growth business**

“Payback through increased productivity and material savings has been good, but more important is the quality of the finish and ability to control mil thickness,” Troiano said. That capability has helped Trojan bring in business that it previously would not have gotten, including doing architectural coatings for demanding interior and

exterior applications. Trojan is an approved applicator for TIGER Dry-lac USA architectural powder coatings and for another major producer.

To become an approved applicator, both powder manufacturers first had to audit Trojan’s coating line. The powder manufacturers tested pretreatment, powder application systems, and oven curing. Samples of aluminum panels then were powder-coated and put to a 4,000-hour salt spray test. After successfully passing the salt-spray test, Trojan

gained approval from both manufacturers. “Being certified has been a big boost,” Troiano said.

Trojan is also a member of the American Architectural Manufacturers Association (AAMA). Trojan has had its coated products pass rigorous AAMA 2605 testing, meaning it can provide the voluntary specification, performance requirements, and test procedures for superior-performing organic coatings on aluminum extrusions and panels. AAMA, a national trade association establishes voluntary standards for the window, door, and skylight industry. The 2605 specification assists architects, owners, and contractors in specifying superior performing finishes for film integrity, weather resistance, and appearance over many years.

Recently, Trojan’s additional powder capabilities have secured new business, including being certified by the New York transit authority to coat galvanized rigid metal conduits for subway stations that are 10 feet long and up to 4 inches in diameter. Another job involved powder coating, assembly, and wiring of metal stands for the NintendoWii<sup>1</sup>. “A group from Nintendo visited our facility and was impressed by the capabilities on our main line,” Troiano explained. “It

helped us to secure the business and assured them we could fulfill their jobs.”

Trojan’s additional throughput has proved especially helpful with a couple of large jobs. One current job involves coating 380,000, 2-foot-square tin ceiling tiles in a semi-gloss white finish for a large department store chain. Another job involves powder coating parts for 20,000 menu boards for a fast-food chain. Today, Trojan has the capability and flexibility to meet just about any requirement for any size job.

## Sublimation demands uniformity

Trojan anticipates business will continue to grow, particularly because of its capability to apply architectural coatings. One area of architectural coatings with tremendous potential involves using sublimation to produce aluminum architectural pieces with unique finishes. The process uses horizontal powder coating (requiring a uniform 3-mil thickness) and a sublimation procedure that combine to create such finishes as wood, grain, or marble on aluminum. "Film thickness is very important for architectural coatings," Troiano said. "We're currently working to get certified to powder coat extrusions for architectural windows. To properly assemble the extrusions, they can

only have a 2-mil thickness. We have to be a lot more precise."

This precision continues winning new business from other job shops. A company in Florida that's certified to assemble architectural windows has not been able to find a local coater that can provide the right mil thickness, so it's shipping its parts to Trojan. "The move to the new powder coating system is like going from prehistoric times to the future," Troiano said. "We're poised to grow our business even as the manufacturing base around us shrinks." **PC**

### Editor's note

For further reading on the topics discussed in this article, see *Powder Coating* magazine's Web site at

[[www.pcoating.com](http://www.pcoating.com)]. Click on Article Index and search by subject category. Have a question? Click on Problem solving to submit one.

### End note

1. Nintendo® and the Wii logo are trademarks of Nintendo.

Powder application system and equipment: **Nordson, Amherst, Ohio. 440/985-4000.** [www.nordson.com](http://www.nordson.com)

Architectural powder coatings: **TIGER Drylac USA, Ontario, Calif. 909/930-9100.** [www.tigerdrylac.com](http://www.tigerdrylac.com)