

Finishing

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By Kim Kaiser

At a time when its competitors were pushing the idea of having the “latest and the greatest” in UV technology and UV finish, ABC Millwork opted to do its homework and allow for the kinks in the technology to be worked out. Waiting for the right time seems to have paid off.

ABC Millwork is the largest supplier to professional contractors of prefinished mouldings and doors in the Twin City area. It has been serving the Minneapolis-St. Paul construction industry since 1980.

In 1994 the company made the switch to a more environmentally-friendly finishing process, which resulted in a 94 percent reduction of VOC (Volatile Organic Compound) emissions and virtual elimination of hazardous wastes. It switched from a lacquer-based product to a 100 percent water-based product. The smell in the building that the lacquer-based product produced had a lot to do with the switch, says warehouse supervisor Randy Stresemann. “You are creating a hazardous waste, which is expensive to deal with, and it seemed like the industry was going toward water-based products,” he says.

Time for more changes

When it came time for another change, Stresemann kept environmental and health concerns in mind again. However, another important factor was whether the product would be stackable right off the line. “That was the biggest concern: Can we get something that is a water-based product that is stackable at the end? Which led us to the UV water,” he says.

ABC Millwork chose a waterborne UV product after considering other options such as 100 % solids and vacuum coaters. Although these processes require less equipment than the UV water, Stresemann felt they were not as environmentally friendly, and he says the employees and



ABC Millwork's new finishing system's footprint is smaller than before and allows it to cut down its throughput times and eliminate the need for racking pieces between steps.

his branch manager were against anything that would be sensitive to the employee. “Plus, personally, I didn’t care for the finish the vacuum coater gave you or the 100% solid finish,” he says.

The advantages Stresemann found in the water-based UV coatings included being safer to handle, excellent stacking qualities, exceptionally durable surfaces and split second curing after water removal.

Operations manager Joe Schaefer says the primary reason ABC switched to UV was because it allowed for the pieces to be stacked or packed right after coming off the line. The durability of UV is also much greater than some other coatings, he says.

“We feel a UV topcoat is more durable than a conventional topcoat. With the business we’re

in, we run a lot of trim for contractors, it gets shoved around and scratched pretty easily, so it’s more durable now than what it was. Those are probably the two biggest factors to go to UV.”

New equipment

Switching to a UV coating meant a switch in machinery as well. ABC Millwork worked with Deimco Finishing Equipment to customize the machinery to fit its needs. ABC looked at two other companies, both of which were foreign companies, Schaefer says.

“We evaluated three companies and ultimately chose Deimco because, first of all, its price was the best; second, it has sharp engineering people there that work right with you;



ABC Milwork uses individual stain pumps that feed the color changer. With its new system, colors can be switched in as few as 30 seconds.

and third, the machines are American-made and the company is located very close to us," Schaefer says.

ABC also liked that the footprint was much smaller than it would have been with other machinery, while still allowing them to cure out the product because of the transfer system, Schaefer explains.

The new line started running in mid-May of 2005, and it took about five months from the time ABC ordered the machines until they were up and running.

The new setup is made to run up to 16-ft. lengths and was made to handle UV finish. It was also custom fit with sanders. "We sanded the beginning in the raw wood and in the sealer process. They customized that for us," Schaefer says.

Another customization is the cover over the oven used after the topcoat is put on. "Normally Deimco doesn't enclose their machines, but I requested that because I didn't want dirt to get in the finish," Schaefer says. "They did that for us, and they met our throughput times and our drying times with their configuration. We basically gave them the dry times and throughput time we wanted, and they pretty well built the machines that could handle it."

Stresemann is happy with the end result and says its cycle on a piece of moulding is 20 minutes from start to finish. With ABC's old system, it could take an entire day for a project to be completed because drying could take anywhere from 20 to 40 minutes depending on the humidity on a given day, Stresemann says. "Ballpark figure, you're looking at it being available tomorrow."

Time savers

Schaefer attests that the improved throughput times are one of the biggest results of the new process. "The throughput time — again, I can't say that enough," he says. "The throughput time and the capacity gain were the two biggest positives for us."

Before, because of the way it was working, ABC was back-ordering a lot of products.

"We were working 55 to 60 hours a week and couldn't get it out. So it was capacity and throughput that were probably the major factors in doing it in a line," Schaefer explains.

Schaefer says the company cut its throughput time down from around three hours to 16 minutes per piece. Drying time was the main factor that slowed the old process. With the old system the pieces needed to be racked and dried in between each step.

"So you stained, racked it. You sealed it, racked it. You hand sealer sanded it, top coated it, racked it again," he says.

Now, the pieces are stained, wiped, sealed and go through an oven all on the same line. They also are automatically sealer sanded.

"We have an automatic sealer sander, and then it gets topcoated. Then it's out and ready to stack as soon as it comes off the line because of the UV technology," Schaefer says. "So it's really drying time more than anything. Drying time and material handling time is where you save your throughput time."

The company is also now more efficient from a labor standpoint. "We were outsourcing a lot of products that we've brought back in-house now," Schaefer says. "We've cut our outsourcing costs

down dramatically. Those were the three big factors: capacity, outsourcing and throughput."

In addition, the turnaround in the time it takes to switch colors has improved greatly. The quick change manifold ABC has with the new line allows for a turnaround of about 20 seconds from color to color. "We can almost change colors on the fly, basically," Stresemann says. "Everything is the latest and greatest as far as technology."

With the new machinery, all it takes is a push of a button to change colors. The quick change manifold will cycle it, purge what is in the system, suck up water to wash the system out, fill up the guns with the new color and will let the user know when it is ready to start up again, Stresemann explains.

"That's got to be the biggest advantage we've got for changeover; even though on our old system it was probably only three minutes. Of course it was all manual, so you had to turn buttons or flip levers to do that process. This is pretty slick," he says.

ABC is set up much like a job shop and does not keep a stock of any prefinished mouldings; everything is done by the job. The company offers 12 different colors, including clear, that are offered on any species of wood. According to Stresemann, since ABC job lots its work, it can essentially use every color in a day's time.

The quick change manifold offers much more flexibility. "You press a button and boom, you're spraying a different color 30 seconds later. The gap in the change time is very flexible," Schaefer says.

Looking ahead

After running the new line for six months, Stresemann says the company is getting to the end of the learning curve. However, he says, there is always more to learn and new ways to improve.

"I'm always looking for something to tweak the quality, but I would say it took a good five- or six-month learning curve to make sure you came in and had a routine and did the same thing every day," he says. "The learning curve is always there, and you're always tweaking for quality."

When all the changes started to take place ABC wanted to ensure it was investing in the company's future growth. In the end, its new system has given it the ability to grow by allowing it to double its capacity.

"We're pretty well set after the installation of this finishing process," Schaefer says. "Currently we outsource the finishing of many of our doors. One thing we want to do is to finish all our own doors in-house — that's our next goal. But, we're set right now to double our capacity with what we have." ●