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CANADIAN FINISHING & COATINGS MANUFACTURING

\$12.00

September 2008



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PHOTOS BY PETE WILKINSON

Pinnacle, At a Successful Point

With a focus on integrity, cleanliness and two washing stages, Pinnacle sets itself apart

What strikes you most when you walk into the Pinnacle Finishing plant in Chatham, ON, is its overwhelming size, 170,000 sq ft. of which Pinnacle uses only 60,000, the rest leased out. It has 11 loading docks. The other thing that strikes is its cleanliness and brightness.

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Pinnacle Finishing employees hard at work in the 170,000 sq ft facility.

ALSO IN THIS ISSUE

- Endless applications for recycled glass as paint filler and more with Poraver
- World's Biggest Ball of Paint, on the way to Coatings 2008
- Water Wise with John Seldon

Home Cooking

Bringing Powder In-House Helps Canadian Manufacturer Slash Production Time and Beat Out International Competition

When Soucy International Inc., wanted to dramatically decrease its production time, the manufacturer quickly turned attention to its finishing process.



Sylvain Richard, head painter at Soucy works on the line in a manual spray booth, the Nordson Lean Cell.

The Metal Division of Soucy International specializes in the development of parts and accessories for snowmobiles, all-terrain vehicles (ATVs) and industrial equipment. Soucy keeps a competitive edge over foreign competition through flexibility and rapid response. The problem was it outsourced finishing to an outside powder coater, which delayed delivery of finished products and increased transportation costs.

Soucy began in 1967 as a distributor of snowmobile parts in Quebec and Ontario. The Soucy Group has since grown to comprise seven companies and 1,300 employees in North America and Europe. Its companies design, engineer and manufacture a wide range of components for original equip-

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IN THE NEWS

Health Canada Cracking Down on Non-Compliant Consumer Labels

By Mike Moffatt

The summer is typically a slow time for our chemical product compliance firm, but 2008 has been anything but quiet. We have been receiving an unusually high number of panicked phone calls and e-mails from potential new clients in the cosmetics, coatings and specialty cleaning industries. The reason: Health Canada audits of consumer products.

The Issue: Non-Compliant Consumer Cosmetic and Chemical Labels

The stories we are hearing are all far too similar. A Health Canada inspector conducts an audit of a retail store and finds that the label on a particular consumer product does not meet the rules set out in either the Consumer Chemicals and Containers Regulations, 2001 (CCCR-2001) or the Cosmetic Regulations. The product is 'pulled' from the shelf by the inspector until the label issue can be rectified. The retailer informs the manufacturer of the product about the problem; the manufacturer then has to scramble to find a solution.

Health Canada auditors have a number of tools at their disposal. Clause 22.1.e of the Hazardous Product Act allows an inspector to "seize any product, material or substance, or any labelling, advertising material or other thing" reasonably believed to be non-compliant with the CCCR-2001; the Food and Drugs Act has a similar clause relating to the Cosmetics Regulations. Health Canada can also request a recall if a product does not comply with either piece of legislation.

How Many Manufacturers Are Affected?

It is difficult to determine – as far as we are aware Health Canada does not release statistics on how many products are seized over a period of time. Based on the number of inquiries from manufacturers we have

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ment manufacturers in the power sport, industrial, agriculture and defense industries. It is headquartered outside of Montreal in Drummondville, Quebec.

Soucy's greatest strength is its ability to develop exclusive products for each customer. Using a team of highly skilled production technicians and flexible multi-application equipment, Soucy can respond quickly to all of its customers' needs. Powder coating was the only process done outside of its metal division manufacturing facility. The finishing process typically took five days from the time Soucy shipped products to the outside coater until finished products were back at its facility and ready to ship. Soucy wanted to reduce the process from days to hours.

"The biggest competitor for most North American manufacturers is Asia. And Soucy is no exception," says Marc-André Patry, project manager, Soucy International Inc., Metal Division. "We realized we couldn't beat foreign competition on production cost, but we could beat them on turnaround time. They have a mean delivery time of eight to 12 weeks. We knew we could compete by keeping the emphasis on production time."

FROM DAYS TO HOURS

To reduce its finishing turnaround time from days to hours, Soucy wanted to bring finishing operations in-house. Doing so would also reduce transportation costs and increase control over finish quality. Soucy wanted a powder coating system that would provide maximum flexibility to accelerate the flow of parts in the plant. Soucy looked at several powder coating system suppliers, initially consider-



Manual spray booth Nordson Lean Cell, paint from Protech.

ing a manual paint line. After discussions with its chosen suppliers, Soucy decided its production rate was high enough to justify installing an automatic line with an overhead conveyor.

The powder coating system Soucy chose was from Nordson. The system includes three booths, one Nordson Excel 2001® booth with powder reclaim capabilities and six oscillating Nordson Versa-Spray® II automatic guns to paint gloss black, which accounts for 80 per cent of production. The additional two booths are manual Nordson Lean Cell™ fast color change powder coating booths with Nordson Sure Coat® manual spray guns. The Lean Cell booths and manual guns provide touchup for the automatic booth and coating for the remaining 20 per cent of products coated in other colors. Soucy coats parts that range from small bushings 1 inch in diameter and 1 inch tall to large track beams 8 feet by 4 feet.

The powder coating process

begins with parts being hung on a 700-foot overhead conveyor typically running at 5 fpm for smaller parts or 2 fpm for larger parts. Parts travel to a five-stage pretreatment with the first stage a heated cleaner followed by two rinse steps. Instead of a phosphate solution pretreatment, Soucy's fourth stage uses Henkel's Bonderite® NT-1. This phosphate-free pretreatment is used at ambient temperature and creates a nanoceramic coating on steel and aluminum surfaces for corrosion protection and paint adhesion. The pretreatment material produces no sludge.

Following the five-stage pretreatment, the parts enter a dry-off oven for between nine and 22 minutes, depending on which line speed is running. The dry-off oven runs between 325 and 350 degrees Fahrenheit. The parts then enter the



Marc-André Patry, project manager, Soucy International Inc., Metal Division.

paint line. The automatic booth paints gloss black followed by touch up in the manual Lean Cell booths. There is one operator in each of the manual Lean Cell booths, with one booth applying powder to the left side of the part and the other on the right side. For the 20 per cent of parts that don't get coated in gloss black, the automatic booth is closed and parts are painted manually in the Lean Cell booths. Soucy uses powder from Protech with 20 different colors used.

The final cure is done using a polymerization oven with a Sunkiss Thermoreactor, which uses infrared to heat and polymerize the powder. The IR technology reduces curing time by as much as 50 per cent compared to standard convection ovens. At a line speed of 5 fpm, parts



Robin Grandmont, Loading overhead conveyors at Soucy.



Nordson's automatic paint system Excel 2001.

spend 18 minutes in the curing oven. At 2 fpm, parts spend close to 45 minutes in the curing oven. Cooling time is also reduced because the IR technology heats only the surface of the part. Parts under half an inch thick typically cool in 20 minutes while thicker parts take up to 50 minutes to cool. Ayotte Techno-Gaz Inc. supplied the pretreatment washer, dryoff oven, curing oven and conveyor system.

TIMING IS EVERYTHING

For more than 15 years, Soucy outsourced the powder coating of its metal parts. With an in-house powder coating operation with the latest powder coating systems, Soucy now has complete control of its coating operation. It no longer has to spend time or the expense to ship parts to its outside job shop. For the first time, Soucy is coating parts on a First In, First Out basis. It has dramatically reduced total processing time for painting from an average of five days to less than 24 hours.

"We have much greater flexibility and can now regularize the flow of production by controlling the painting time," says Patry. "By controlling all of our processes, we can give customers an exact delivery date instead of an approximation like we used to do."

The system was installed in the summer of 2007, just in time for the busy fall production period. The coating operation ran successfully eight hours per day, five days per week during Soucy's peak season.

The features of the automatic guns and the reclaim Excel booth provide high transfer efficiency so Soucy can maintain a high conveyor line density. The coating booth, including the filters, collector module, canopy and fan section are designed to facilitate uniform, constant air flow. The integrated system approach delivers more efficient powder recovery, enhanced collector efficiency and better coverage of parts. The Lean Cell booths and manual guns allow for quick color changes. Soucy doesn't change colors often - two to three times per day on average - but when it does, lost production is minimized.

Another benefit is the complete control over the coating process. If there are ever any issues, operators can quickly solve them. Part of that control comes from the Nordson® iControl® integrated control system. The iControl system accepts input from the part identification sensors for gun triggering, and in/out positioning, and can accommodate up to 255 presets. This allows operators to adjust various gun control parameters such as flow rate, atomizing, KV and cur-

rent for various part styles.

"We have greatly reduced our production time, cut transportation fees and reduced our expenses so we can offer a high quality product at a lower price with a fast turnaround," says Patry. "Our customers know they can rely on Soucy when they need rapid delivery." ■

Article written by Robert Allsop, Global Marketing Manager, Powder Industrial Coating Systems, Nordson Corporation. Photos by Réjean Morin of Soucy.



A part heading through Soucy's paint system on an overhead conveyor, automatic Nordson Excel 2001.

WHEN YOU MEASURE YOUR COSTS, DO YOUR CURRENT SUPPLIERS MEASURE UP?

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