



Eco-Friendly Stripping

An eco-friendly chemical stripping solution has allowed Filtech to improve rack stripping and powder coating rework.

Filtech, Inc., a manufacturer/finisher of automotive oil and air filters based in Findlay, OH, uses automated electrostatic powder coating equipment from Nordson Corp. to apply a quality powder coating to its products. Unfortunately, the pow-

der coating also builds up on the racks used to carry parts through the finishing operation.

The company originally cleaned its racks in burn-off ovens, but as production requirements grew and energy costs increased, this process became too labor-, energy- and time-intensive. Filtech investigated allowing the same racks to pass through the powder coating process up to six times and then replacing them with new racks, but this option presented a cost concern. To remain competitive, the company needed to find another way to remove powder coating from its paint line racks and occasional powder coating rework in-house.



The eco-friendly stripping solution allows Filtech to economically handle occasional rework on its oil and air filters.

An Eco-Friendly Solution

After evaluating a number of different options, Gary Burns, project engineer at Filtech, selected Miles Chemical Solutions based in Rochester Hills, MI, to fabricate

ABOVE: Racks at Filtech are immersed in an eco-friendly chemical solution at 180 to 200°F and are then rinsed, dried and ready to be placed back on the powder coating line. The entire process takes just 60 to 90 minutes.

PAINT STRIPPING ECO-FRIENDLY TECHNOLOGY

custom stripping equipment and provide eco-friendly chemical stripping solutions. Miles Chemical Solutions' founder, Samuel L. Miles, first patented methods in April 1999 and October 2001 to strip paint and remove coatings from aluminum and galvanized substrates with a soap-based stripper that is 99% free of volatile organic compounds (VOCs). More recently, the company has developed environmentally friendly, low-VOC paint strippers that also save energy by operating at lower temperatures (<205°F/96°C), as well as proprietary technologies and methods to salvage and recycle paint rework, thus avoiding parts disposal.

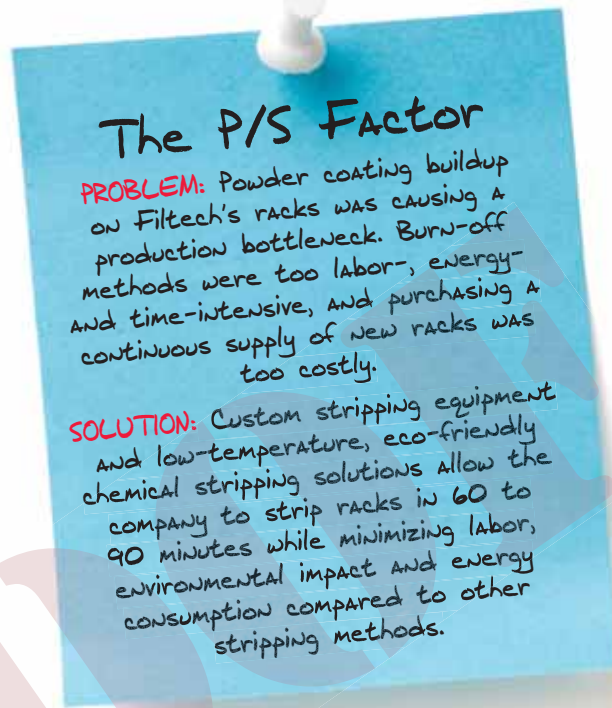
Burns was impressed with the company's capabilities. After receiving the initial stripping equipment layouts from Miles Chemical Solutions, Burns provided a few of his own engineering improvements that were incorporated into the Filtech stripping equipment design. The equipment was installed in spring 2008.

The stripping process at Filtech is operated daily on two production shifts. The powder coating racks are allowed to pass through the paint line only twice prior to stripping and cleaning. This restriction maintains a cured powder coating film build of no greater than 5 to 6 mils for optimum chemical stripping index times of 60 to 90 minutes. The racks are immersed in the chemical solution at 180 to 200°F (82 to 93°C) and are then rinsed, dried and ready to be placed back on the powder coating line. The plant uses three sets of parts racks; while one set is in production, the second set of racks is in the stripping solution and the third set is clean and ready to replace coated production racks.

Powder coating rework is subjected to the same process. The technology restores substrate surfaces to like-new condition with the original surface quality, allowing the company to achieve "zero-tolerance" paint quality without having to reprocess sanded and paint-repaired parts.

Improved Stripping


According to Burns, the in-house powder coating rack stripping process presents a number of advantages compared to other stripping methods. Stripping in-house allows the racks to be stripped and returned to service the same day, versus three to five days for outsourcing, and it provides greater control over the quality of the powder coating racks. It minimizes rack replacement and is a more operator-friendly process compared to corrosive or higher-heat methods of paint removal. Additionally the undercutting and lifting action of the stripping chemistry creates powder coating "skins," which are easier to remove from the stripping solution process tank compared to dissolving chemistries. As a result, the technology has an increased stripping solution bath life for a more cost-effective operation.



The P/S Factor

PROBLEM: Powder coating buildup on Filtech's racks was causing a production bottleneck. Burn-off methods were too labor-, energy- and time-intensive, and purchasing a continuous supply of new racks was too costly.

SOLUTION: Custom stripping equipment and low-temperature, eco-friendly chemical stripping solutions allow the company to strip racks in 60 to 90 minutes while minimizing labor, environmental impact and energy consumption compared to other stripping methods.

For Filtech, the technology has provided the stripping solution the plant needed to optimize production while minimizing its labor and energy costs and reducing its environmental impact. 

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Filtech's stripping equipment was customized to meet the needs of the plant.