



New powder plant leads to significant increase in production

## Fences perfectly coated

Up until recently, electrostatic powder coating of metal fences was seen as problematic. For one fence manufacturer, a new powder coating plant with a quick color change system not only spelled the end of inaccurate coating results, but has also significantly reduced color change times and compressed air consumption.

Keywords: Fences, MagicCylinder, increased productivity

Fences were originally developed out of a desire for security. A fence protects one's plot of land and its contents against unwanted visitors. This basic idea was developed and refined over many years, ultimately giving rise to elements that not only provide security but are also visually appealing. Hot galvanization ensures that the value of the fence is maintained for decades. Powder coating additionally provides high aesthetic appeal which does not require laborious maintenance every year.

The company Rosenthal in Marienheide-Kalsbach has for decades supplied fencing for industrial and commercial sites and for private individuals.

The lattice fences are hot-dip galvanized and upon request can be powder-coated in any RAL color of the customer's choice. Since 2001, Rosenthal has coated fence elements with powder paint. With 80 %, Green 6005 accounts for the bulk of colors chosen, followed by 10 % RAL 7016 and 5 % RAL 7030/6009. The remaining 5 % cover all other possible powder paints.



### Color Change System

- Control Cabinet Optiflex A2 with 26 Gun Controls
- 24 Automatic Guns OptiGun GA02
- 2 Manual Guns OptiSelectD
- 2 Reciprocators
- 1 System Control CM10
- 1 quick color Change Booth MagicCylinder
- 1 Powder Center with Freshpowder
- Supply from Big aus Big

Rosenthal Surface Technology: "On the basis of rather negative powder coating experiences, we were skeptical when setting off for St. Gall. However, we were soon convinced by the perfect coating results and impeccable color changes during the experiments. We were very excited and before long decided to invest in a quick color change system." As early as mid-May 2008, the new plant was installed, enabling the fence manufacturer to start full production in June 2008. Batches of five fence panels are now coated at the same time with 24 automatic guns. These are arranged in two opposed rows, each consisting of twelve guns. This enables good coverage on all sides while reducing powder consumption to a minimum. The fresh powder is pumped from a BigBag system to the powder center by means of a powder pump. From there, the powder is transported to the powder guns by Venturi injectors. The quick color change system permits a major color change, i.e. from red to white, to be completed within a maximum of 20 minutes. Another advantage of the new system is the digitalization of the controls. "In the past, each coater wanted to make minor adjustments using the little wheels on the gun controls", says Dirk Rosenthal. "The new controls are much simpler, less adjustments are made and the coating results can be accurately reproduced at any time. This has led to another

Color change used to take two hours  
At Rosenthal, powder coating began with two steel booths in 2001. At the time, color changes on that plant would typically take up to two hours, a situation that was no longer acceptable from an economic viewpoint. In order to increase efficiency and profitability, experiments were made at the beginning of 2006 with application powder pumps. The performance data of these devices sounded very promising in theory. Unfortunately, however, the actual results did not live up to the expectations at all. After only three weeks in operation, powder coating became gradually worse and more inaccurate due to wear and tear. It was not at all uncommon for one fence bar to have too much and the next one too little paint on it. In addition, the pumps had to be permanently

readjusted which was a very time-consuming and onerous task for a specialist. Another problem was the disproportionately high air consumption of the pumps. Rosenthal invested in two additional compressors in order to be able to supply the amount of air needed. But even this solution proved to be inefficient.

Convincing practical experiments  
To achieve maximum profitability and to be able to cope with increasing order volumes, Rosenthal set a goal: the future powder coating plant would have to be able to coat at least five adjacent fence panels at the same time at a speed of 2m/min. At the beginning of October 2007, the first coating experiments were conducted in the laboratory of ITW Gema in St. Gall. Dirk Rosenthal, Managing Director of

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significant improvement of our high quality standards.”

Production increased by 25 percent. Quick color changes, a massive production increase thanks to higher capacity utilization, and quality enhancement through reproducible coating results: the new plant ticks all the boxes of a successful investment. “For us, the investment has more than paid off”, Rosenthal sums up the innovation. “We have realized a production increase of more than 25 percent, because we can now coat a higher number of fence panels simultaneously. This secures a strong competitive position for us in the future.”



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