

## Conversion of a powder coating plant

### Upgrade instead of new construction

Achieving high coating quality with less powder and low energy consumption are the goals for a manufacturer of aluminum shutters and roller doors. Even a complete new plant was under consideration. However, an upgrade with dense phase powder conveying system, automatic color changing and Ultrasonic Sieving was chosen for significant savings.

\_\_\_\_\_ Shutter and roller door manufacturer Alukon powder coated its products in The North Bavarian Konradsreuth. Their products are mainly extrusion

profiles and other system parts made of aluminum. So far, aluminum parts are coated with injectors in four cabins.

The increasing cost pressure and the quest for better surface quality has pushed the manufacturer to make further investments in their own powder coating system. Furthermore a high-quality and cost effective surface was demanded by Patrick Witzgall, director of the coating.

Due to the high powder consumption of the main color this has meant that the first investment decision was related to one of the main booths for powder coating. In this line it was primarily white. Alukon uses about 120 tons of white polyester powder coatings.

When we were using the injectors we were using more powder and the injectors need more service support. Furthermore, the film surface was uneven and had thick

edge problem and other surface defects such as orange peel which prompted the company to search for improvements in the powder coating.

The shutter manufacturer analyzed for about a year the different contract systems. Also, a complete re-engineering had been discussed, but then the possibility of an upgrade of the existing system was chosen.

#### Conversion over the weekend

Alukon decided to upgrade their existing system with the DDF technology from Ramseier. The deciding factors in opting for this technology are the advantages of the closed-cycle recirculation of the powder, the ultrasonic sieving of both the fresh and recovered powder, the small batch-dosing (about 5 kg) of powder in the powder hopper and rapid automatic color change. Another positive aspect: the Modular principle of the Ramseier design. This allowed the upgrade conversion to be done in only 2.5 days over the weekend.



▲coating director Patrick Witzgall, after the first months of the refurbished facility very satisfied by up to 20 percent of the powder decreased consumption.



▲ The DDF-tubes with an inner diameter of 5.5 mm adapter to be connected via the existing guns. The lifting devices can still be used ..

◀ The PMC-cabinet on with folded out ultrasonic oscillator cyclone, left the fresh powder supply

The whole decision process only took several visits and presentations on the DDF system, Alukon was convinced and the DDF System was installed in March 2008.

The reduction on powder usage and savings in compressed air were significant. High operational reliability and a consistent production process was also on the highest level of quality in the specifications.

### Improved surface finish

Intensive training accompanied the installation process. Coating Head Witzgall placed particular emphasis on user training. After a smooth installation and a few months of production experience in 3 - shifts.

Witzgall, is very satisfied with the system conversion, the expectations of energy savings and quality have been fully met. Alukon estimated the savings in the powder material is about 15-20%. This manifests itself in the clear reduction in waste powder. The very regular and uniform thickness also allows for savings.

The finish of the surface coating has a further significant improvement, as a result of the use of ultrasonic sieving and a softer and better charged powder cloud from the dense flow delivery. Since the desired reduction of compressed air consumption was also reached, hence the plant upgrade paid for itself in a short period of time. \_ |

Contact:  
Patrick Witzgall, Alukon GmbH & Co. KG,  
Konradsreuth, Tel. 09292 950-459,  
patrick.witzgall@alukon.com,  
www.alukon.com;  
Jörg Zimmerhackel,  
Ramseier Technologies GmbH & Co. KG,  
Lorch-Waldhausen, Tel. 07172 183543,  
zimmerhackel@r-technologies.com,  
r-technologies.com