

Thin layer plus NT technology

POWDER COATINGS AS A CRUCIAL PRODUCTION FACTORS

Sophisticated logistics systems are needed for high product availability and quick delivery. SSI Schäfer is the world market leader in this area and puts in the manufacturing process a combination of thin and low temperature powder coating, to obtain a permanently high quality of coating.



"In the field of logistics the shelves and facilities are exposed to heavy loads. SSI Schäfer, world market leader in the field of logistics systems, relies on a thin layer of low temperature powder coating.





High-bay warehouses are more in demand than ever, because warehouse space is expensive, and it can be built more or less only in the height. Customers such as Volkswagen, Porsche, BMW, Daimler, Zalando oder Amazon stands for a state of the art equipment by SSI Schäfer. The company is a prime example of a highly efficient production process. Coil from which components are made, to installation on site production - each step is closely connected with the next production step. "The plant components of hundreds orders come together only at the construction site, either in Europe, Siberia or Australia. A precise just-in-time delivery of components is essential", explains Jörg Kassel, plant manager of SSI Schäfer in Neunkirchen. To make this close integration working properly, all internal and external participants must ensure at all times the required amount of product in the same quality. So under the direction of Jörg Kassel an automatic welding machine has been developed, that automatically adds an enormous variety of carriers in highest precision and speed. This high output is continuously processed by the subsequent powder coating layers. To keep the quality of the coating and the thickness of the layer permanently at the highest level, the POLYFLEX® UDS ultra thin powder coating PES-55-NT-UDS-S of Karl Bubenhofer AG (KABE Farben) is used. This powder coating combines the advantages of ultra-thin-layer technology (UDS) and low temperature (NT).

Usage under high loads

"In the field of logistics the shelves and bodies are exposed heavy loads", explains Jörg Kassel. Therefore, for ecological reasons SSI Schäfer decided in 2000 to switch from wet to powder coating. As the native supplier led no powder in the range, Karl Bubenhofer AG as a powder coating supplier caught the wind. Shortly after the changeover, KABE Farben worked on a special finely ground powder coating for the ap-

plication with standard equipment, resulted in the ultra thin layer powder coating. As with many other new technologies, assumed a pioneering role SSI Schäfer and was one of the first users on this new powder coating. Norbert Siefke, leader for the powder coating in the FGW system at SSI Schäfer, explains the motives: "Here in he factory in Neunkirchen we annually process 120'000 tonnes of steel." The reduction of the layer thickness in the powder coating doesn't huge financial savings for these quantities. At the same time, less compressed air is required for the application, and there are just 10 to 15 kg powder coating in use in a facility with 24 guns. This reduces the powder paint loss at intervals and reduces costs.

In 2008, SSI Schäfer made spot welded folding corners to create on a product line. The pre-treatment medium remained in it and resigned when baking at 180 to 200 ° C again. It had as a result a very high reject rates and costs. The technicians at KABE Farben analyzed the problem and found the solution through a significant reduction in the oven temperatures. The problem has been eliminated with the specially designed, fast reactive NT powder coating in UDS quality. "The support on the part of KABE Farben was very good and extremely valuable. The developers put it about, to get the problem to the bottom and to find a solution with the help of the powder coating formulation", Jörg Kassel recalls. A reliable partner is crucial to ensure networked production processes for SSI Schäfer. "I can sometimes forget that we have the right powder coating in top quality in the home. And if once a powder coating is missing, KABE Farben is not afraid of colours to deliver it the next day by truck directly from the Switzerland. This is a relationship that goes far beyond a normal business relationship", so Jörg Kassel.



With ultra thin layer NT powder coating one can obtain a high covering power and smooth surfaces with 16 µm layer thickness.

UDS powder coating as a key factor of a process optimization

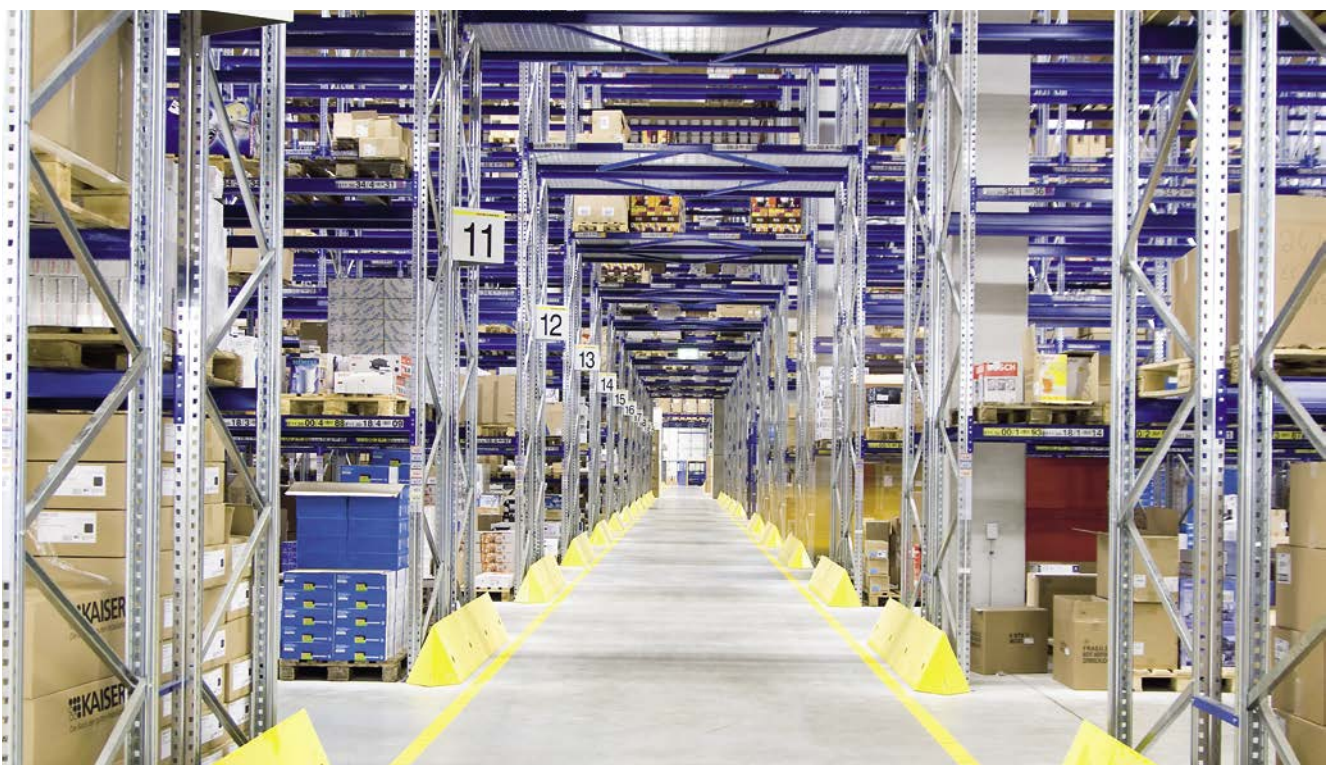
The quality of the powder paint order with a thin powder layer of is very high and must not be compared with liquid coatings. "Thanks to optimized formulations and a special production technology we can offer an ultra thin layer powder coating, depending on shade, already at 20 µm thickness shows a properly running and opaque paint film", says Marko Büttgen, KABE powder coating Germany Sales Manager. SSI Schäfer scored with a series of optimisation measures, including powder coating, a sustainable increase in production. Where earlier once every hour, 170 to 190 travers happened, today are processed 340 to 380 units per day. Also the use of the new powder coating contributed to this performance, which brands for ten minutes at 160°C. Jörg Kassel explains another saving effect: "Due to the reduced edge structure parts with high accuracy can be assembled much better. This has substantially reduced the preparation and postprocessing of the parts."

Stable production processes

SSI Schäfer processed the powder coating of PES-55-NT-UDS-S in more than 50 different colors. It is a thin-layer, it is baked at low temperatures and is also available with metallic paint. Such a powder

coating can be processed normally. "We were no special cleaning or adjustments are needed. During the application of ultra thin powder coating it behaves a as a conventional powder coating."

"It is important to make familiar with the circumstances and to dare to move on the thickness border" says Norbert Siefke. "The epoxy-polyester powder coating processed by us shows already 16-17 µm and good covering power. However one should approach these values by its own way. Once it's done, they remain stable over the entire production process." SSI Schäfer processed in Neunkirchen seven days a week in three shifts up to 400 tons of steel per day. They use for years UDS - and NT-powder coatings by KABE Farben on each application system, regardless of the device manufacturer, and the layer thickness can be reached at any time easily and reproducibly. Is with the ultra thin powder coatings layer it is possible to coat at least 100 percent more space with an equal amount of powder paint. The NT-powder coatings reduce also baking times, increasing the throughput. Report produced on 04/2014



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Fritz Schäfer GmbH products are everywhere in use: from industry, craft, services, municipalities, research centres and management up to an end-consumer. SSI SCHÄFER is a market-leading company in the area of planning and implementation of integrated logistics systems and a significant provider of modern concepts in waste management is integrated in the of market leader. In both areas, we stand for innovative solutions from a single source - all over the world.

