Surface technology specialists know that galvanizing and powder coating are a difficult combination. The porous or out gassing surfaces require specific powder formulas to prevent the building of pores and bubbles. New is also the low-temperature powder available for this critical application, with which a Swiss plant can optimize the working process and save time and energy sustainably.

About two years ago Christoph Schmidt, manager of the Schweizerische Drahtziegelfabrik AG (SDL) in Lotzwil, Switzerland expressed in an interview the wish to be able to use low bake temperature powder on galvanized substrates. After using successfully the DUPLEX-Powder from KARL BUBENBOHER AG, the low-temperature powder for galvanized surfaces from the same manufacturer became also recently available. So, Christoph Schmidt’s wish came true in a short time. He explains the reasons behind the changes at SDL as follows: „The incorporation of a new coating line allowed a massive increase in material flow. As often in powder coating lines, the chamber oven proved to be a bottleneck. On one side this required long curing times and on the other, every time you opened the oven, the temperature dropped to 130 degrees. That created material stowage’s in front of the oven that made an economical work process impossible.”

The chamber oven can rapidly be heated up to 150 – 160 degrees but from then on, the heating curve flattens significantly. Since standard powders are to bake at 180 -190 degrees, the result is high energy consumption and long waiting times until the next batch can be entered. The first solution was to install a new, more efficient oven. " But first that would have been very expensive, and second also a nonsense from an ecological perspective," says Schmidt. So, how would it be to use the new low bake temperature powder instead of the standard powder? Then the oven would have a significantly larger throughout capacity and the material stowage’s could be avoided. The idea was compelling but there was no low-temperature powder available on the market which could be applied of zinc substrates! Was this good idea doomed to fail in the bud?

During the long business relationship between SDL and the powder manufacturer KARL BUBENHOFER AG, many successful projects could be implemented, including the previously mentioned Duplex process. It was only logical for Christoph Schmidt to also contact the specialists by KARL BUBENHOFER AG with his wish for a low bake temperature powder „We are innovators by SDL and like to try new things out. We have done that with success before with KARL BUBENHOFER AG as they have the same spirit“, explains Christoph Schmidt this step.

The low-temperature powder has tradition by KARL BUBENHOFER AG and we could fall back on their know-how. „We have been around for a long time in the field of low bake temperature powder and have a large experience. A special requirement for the galvanising company SDL is that the powder paint must be out gassing. That made the development challenging and exciting“, said Roger Zeller, powder coating sales and marketing Manager by KARL BUBENHOFER AG.

The development process took place in close cooperation; That was the only way to reach quickly an optimal result. Since SDL serves an exceptional broad customer portfolio, a wide range of metallic and structured powders was also developed in addition to the standard colours.
The development process is one story. But how did the powder coater react on the new Powder? Did they have to change their way of working completely? „The powder coater saw the advantages very quickly. The stowages in front of the oven were suddenly gone, because thank to the new powder we are working by a 20 degrees lower baking temperature a 30% higher output! “ so Schmidt. But it required some getting used to make the temperature settings and the colour choices correspond with the object to be coated. For where previously just any box could be taken out of the storage, the right powder had now to be selected and the oven temperature pre-set. Other experiences were made during the introduction phase. It is important, for example, that the priming powder baking is completed. Otherwise it appears through the powder layer. Even when handling the powder coater company SDL had to do some rethinking. Because this low-temperature powder cannot be left in the sun at the entrance of the warehouse, it must immediately be stored in a place protected from heat, otherwise it turns to gel.

As users, do we have to worry about complications in the transition to low bake temperature powder? "Not at all, but it takes the will to innovate," said Christoph Schmidt, adding: "The low-temperature powder KARL BUBENHOFER AG represents a very big advantage, especially with the chamber ovens. The performance can be increased and the energy consumption reduced. "Thanks to the use of low bake temperature powder at SDL, which reduces the baking time by 10 minutes, the work process could be effectively optimized at SDL. This manifested itself in reduced overtime and satisfied employees who no longer need to turn thumbs until they are allowed to bring in the next batch in the oven.

KARL BUBENHOFER AG is proud to have brought the low bake temperature powder up to level of mass production in a galvanizing plant and is with this development step, the only manufacturer able to offer an out gassing powder coating at low temperatures. "Zinc is indeed a very sensitive substrate. If it works here, it works on all other substrates as well. The throughput increased by 30% at 20 degrees lower baking temperature proves that the low-temperature powder POLYFLEX® PES-125-GU NT is an economical alternative to standard powders "says Roger Zeller of KARL BUBENHOFER AG.

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