

Chemical resistant powder coating

MORE RESISTANT WITH HYBRID POWDER COATING

In the production of high-quality door fronts of kitchens, washing machines and refrigerators, a high chemical resistance to aggressive fluids is required.

Therefore to the production of his powder-coated metal kitchen, a Swiss kitchen manufacturer relies on a chemical-resistant hybrid powder coating.





The powder-coated metal kitchens of the AFP Küchen AG from Arbon are known in Switzerland for their very long lifespan, because the door fronts of kitchen, washing machines and refrigerators withstand numerous tenant and owner change. Also a contact with different food and drinks leaves an equipment relatively unspoiled. Apart from a persistent high degree of gloss and a perfect finish the applied powder coating convinces us with the high level of chemical resistance. "An onion juice belongs to the extremely aggressive fluids. The powder coating applied by us prevented from enduring traces or even caused damages", says the head of coating department at the AFP Küchen AG. It wasn't easy to find an ideal powder coating meeting the requirements. Various products of diverse manufacturers had to demonstrate in a standard test the chemical resistance according to DIN EN 12720. Coated samples came into a contact with a variety of liquids such as wine, ammonia water, pen inks, onion juice, olive oil, or cleaning solutions. The decision finally came in favour of powder coating POLY-FLEX® PES-20 by Karl Bubenhofer AG. It has been already successfully applied as a standard powder coating by many users. The powder coating was further developed for the AFP Küchen AG in order to offer an even more stable chemical powder coating from the series product. Emil Alt, application technician at the KABE Farben: "The composition of the powder coating has been customised in accordance with the strict requirements and test specifications and finely adjusted. As the AFP applies the powder in a narrow range from 55 to 65 µm which almost corresponds to an application in the field of a thin layer, also a high covering power and an excellent adhesion had to be guaranteed in addition to the chemical resistance. The powder coating has itself both properties, the modification should not affect these qualities."

High thermal and pressure resistance

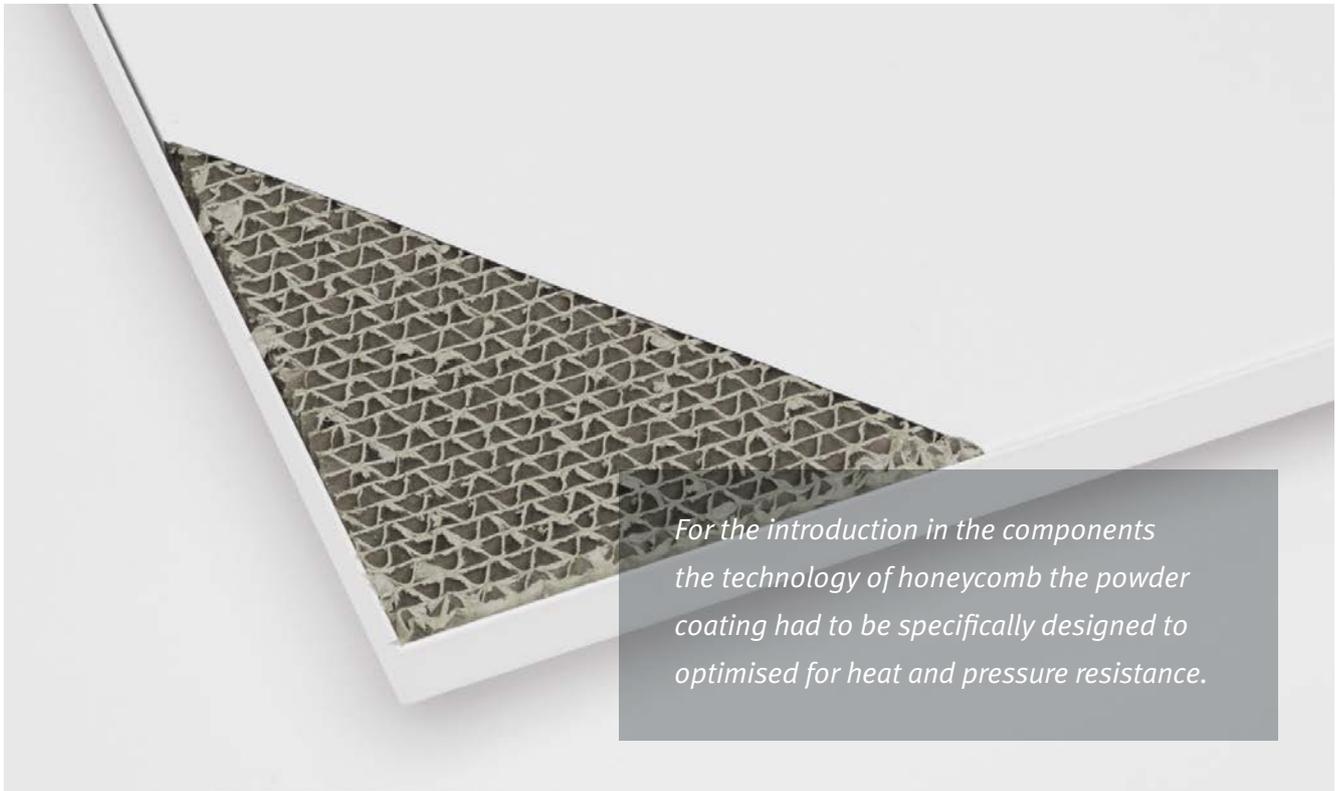
The excellent Finish is an essential feature and sells argument of the quality products by the AFP. Analogically accurate is the coating in Arbon. "Already during the application we ensure the most accurate compliance and control of all parameters. After coating, every surface is meticulously controlled, and even tiny, invisible to laics imperfection is for us an occasion for a new coat", explains a person responsible for coating.

However the combination of Finish and a chemical resistance was not the end, because in the subsequent processing the coated parts were exposed to a very high load. The coated metal parts consisting of two half shells were provided with a honeycomb structure and pressed by means of an adhesive connection at 60-70° C. Because the powder was severely burdened during a pressing process and by high temperatures, the composition of the powder had to be additionally adjusted. Then crucial was to ensure the heat and pressure resistance, as well as to prevent displaying the honeycomb structure on the paint layer.

Despite the modified powder coating composition, no other adjustments were necessary, as the head of the OT said: "We practically haven't changed any settings on the application system. Despite the special composition of the powder coating it behaves exactly the same as the standard version."

Screening for a consistent quality of the powder coating

The head of coating department reveals a small detail - the AFP Küchen AG uses during the processing an individual service from KABE Farben. In order to ensure the powder paint quality on the highest level, each batch is processed during production by



For the introduction in the components the technology of honeycomb the powder coating had to be specifically designed to optimised for heat and pressure resistance.

means of a specially developed printing technology. Therefore instead of a consistent quality, a layer thickness and high fineness is guaranteed for visually demanding parts.

This effort pays off a several times for AFP since the powder coating does not have to be screened again. This saves the purchase of special screeners on the one hand and on the other hand plenty of time. Otherwise the cost of production at AFP would be unbearable at intervals of 40 to 50 color changes per day. In favour of a high quality and reproducibility of the batches is the fact that the AFP Küchen AG introduces without hesitation and preliminary examination every carton of powder.

The AFP kitchens is very satisfied with the powder coating and the service from KABE Farben: "The powder coating impresses with its quality, a constant degree of gloss, a proper processing, a high chemical resistance and a very high stability of yellowing. Additionally, with special screening the KABE Farben offers us a reliable and lasting service."

The product of POLYFLEX® PES-20 in the design by the AFP Küchen AG is a powder coating for many different applications, the use of which pays off several times. For the further development of powder coating for an indoor use it is available in many degrees of glass or structures as well as with an anti-graffiti properties.

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"The powder coating applied by us prevents arising of an enduring traces or damages."

Head of coating department at the AFP Küchen AG



AFP KÜCHEN AG
ARBON

AFP Küchen AG stands for kitchen concepts that inspire. With the Piatti, Forster and Warendorf brands unite three brand philosophies under one roof. Where each kitchen brand stands for that certain something in design, quality and material.

