

Design of glass surfaces with powder coatings

Transfer offering

Due to the very smooth surface texture, the coating of glass surfaces is only possible by using special pre-treatments, especially if these products are also to be used outdoors. For optimum adhesion, INNOVENT has therefore developed a process that can withstand the requirements of a wide range of climatic influences.

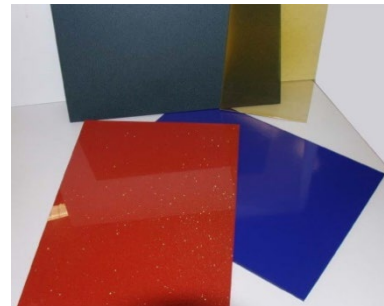
With the help of this coating technology, glass fibre fabric was integrated into the powder coating in a further development, for stabilising the glass pane in the event of breakage combined with a shatter protection effect (similar to laminated safety glass) and for producing design effects.

In order to be able to refine glass in conventional powder coating plants, a technology was also developed that enables vertical coating of glass surfaces using pretreatment processes.

Approach

The application of a targeted surface activation enables the creation of particularly adhesive powder coatings on glass surfaces. A combination of Pyrosil® and primer is applied to a cleaned surface and then coated with a polyester powder coating / facade quality. In the subsequent tempering process, the components are bonded to each other in an adhesive manner.

The Pyrosil® process is based on a flame pyrolytic process in which organosilicon compounds are converted in a flame. In combination with a primer, which is matched to the coating system, functional groups are formed on the glass surface, which cause an extreme adhesion effect of the powder coating on the glass surface.



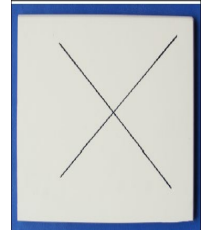
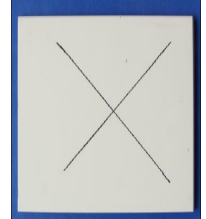
Powder-coated glass panes using the developed surface activation



1000 h salt spray test

Sample above: without pretreatment, RAL 9016

Samples center Pyrosil+Primer, and down: RAL 9016



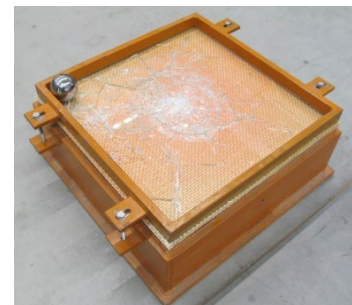
Structure of the glass/powder coating connection using the developed surface pretreatment



Vertical coating of glass surfaces with powder coating



Powder-coated glass pane with integrated glass fibre fabric



Ball drop test on a glass pane with powder coating and glass fibre fabric for proof of breakage safety

Fields of application

- decorative glass coating
- Shop and facade construction
- Railing cladding
- Ceiling and wall decorations
- Furniture design
- Glass containers, perfume bottles, etc.

Development status and property rights

The development of an adhesive powder coating on glass surfaces has already been the subject of various projects at INNOVENT. The adhesion of the coating has also been tested positively several times in various climate tests.

Contact

Dr. Sven Gerullis
Dr. Sebastian Spange

SG@innovent-jena.de
SS2@innovent-jena.de

Phone +49 3641 2825-51
www.innovent-jena.de/en



Member of
ZUSE-GEMEINSCHAFT