PROCESSING INSTRUCTIONS VR 214

Processing IGP fine-structure coatings

IGP POWDER COATINGS

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A Member of the DOLD GROUP

Product description

IGP fine-structure coatings create mainly matte, but also silk gloss finely structured surfaces with a high-quality character. A homogeneous microtexture is responsible for the elegant look.
For applications in interiors, architecture, and industry, a select product portfolio is available for both decorative and functional application areas.
On request, microtextures are also available with pearl or mica effect.

General information

Unlike smooth powder coatings, fine-structure coatings contain structure-giving ingredients that create an animated, more textured surface. These structure-giving ingredients are incompatible with all smooth powder coatings. Even small quantities in smooth powder coatings can cause problems in the form of craters. This is why it is important when changing powders to ensure that all powder-feeding and reclaiming system components in the coating plant are clean.
The fine structures available are listed in the following overview of the product range.
This processing guideline VR 214 was issued for this product portfolio (fine structures).

Introduction

It is necessary to take into account a number of application and technical requirements when processing IGP fine-structure coatings:
VR 214 informs processors about the process parameters
that have a significant influence on the coating result. In general, IGP fine-structure coatings are very reliable in application. They ensure an even structure formation within a wide range of coat thicknesses.
IGP fine-structure coatings are indicated by the number 1 or 4 at the third position in the IGP product key (e.g.: 331, 334, 561, 591,...). The gloss level is indicated at the fourth position as M for matte gloss and T for deep matte gloss (e.g.: 381M, 561T, 331S).

Processing

For processing IGP fine-structure coatings, we recommend using corona guns with a negative polarity electrostatic charge. However, depending on the powder coating system, processing with tribo charging can also be possible. To determine this, please note the instructions in the corresponding technical data sheets under “Coating equipment”.
When processing IGP coating powder with pearl mica effect, you must always use corona guns with a negative electrostatic charge. Please also note IGP processing guideline VR 201.1 (Processing IGP effect powder coatings).
For automatic and manual spray guns, you can use both flat spray nozzles or baffle plate nozzles.
Processing can be performed manually or using automatic plants in an automatic or semi-automatic coating process. To achieve a coat thickness distribution which is as even as possible, we recommend automatic processing. The speed of the stroke devices must be adapted to the feeding speed (harmonized sinusoid of the guns) when coating using the long stroke method. The stroke height must be adapted to the gun distance (harmonized gun turning points) when coating using the short stroke method.
Generally, all IGP fine-structure powder coatings can be conveyed with all of the feeding devices available on the market, such as Venturi injectors, piston or vacuum pumps.

Structure formation

As a rule, IGP fine-structure powders create even surface structures within a broad range of coating thicknesses.
For an even finish, we recommend coating thicknesses of 60 – 90 µm on average, and medium high-voltage settings between 60 and 80 kV. Settings greater than 80 kV can negatively affect the coating result, especially with short spray distances. It is not absolutely necessary to restrict the spray current (µA), but this can produce a more even structure.
To minimize the influence of the high voltage and the coating thickness on the structure, we recommend using ion-leakage rings (low-ion charging). Coating with ion-leakage rings also allows coating thicknesses of up to 150 µm without any noticeable changes to the surface. We recommend using ion-leakage rings above all when components are manually coated, or for objects with difficult geometries.
During coating, a minimum spray distance of 200-250 mm must be ensured. Coating at lower distances can cause visible streaking on the surface. Above all IGP coating powders with pearl mica effect require a greater spray distance in order to prevent streak or cloud formation. Please also note processing guideline VR 201.1
(Processing IGP effect powder coatings) and VR 213 (LivingSurfaces).
When processing fine-structure powders, avoid significant differences in the coating thickness on the components. This often occurs with manual pre-coating or follow-up coating on the outer edges
(picture frame effect). To reduce coating thickness differences in pre-coating and subsequent automatic final coating, we recommend performing tests to determine the areas that need pre-coating before starting the process. This prevents double coating of parts of the object.

Reclaiming

In general, all IGP fine-structure powders can be reclaimed. However, make sure of minimal overspray because the processability of the powder can slightly decrease over time due to the high stress generated in the recycling process. Add reclaimed powder to the fresh powder in constant volumes (automatically where possible). This ensures a constant ratio of fresh and reclaimed powder in the powder container.
Processing guideline VR 201 (Processing of IGP effect powder coatings) must also be observed in the case of pearl mica effects.

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Suspension of the parts

The suspension of the parts must be determined prior to coating (horizontal or vertical). The intermediate spacing between the coating objects within the hangers as well as the spaces between the hangers must be kept as small and regular as possible. If there are large distances between the hangers, it is advisable to have the guns switched on and off automatically via a parts detection system.

Curing

See the respective technical data sheets to find the curing conditions.

Resistances and technical data

This information can be found in the respective data sheets.

Note

This processing information is provided to the best of our knowledge. However, it only represents non-binding information and does not release the user from the need to perform their own tests. Application, use and processing of the products take place beyond our control and are therefore exclusively the responsibility of the user.