



## IGP fine structures

### Application of IGP fine-structure powder coatings

# Processing Guidelines PG 214

#### Product description:

IGP fine structures usually produce finely structured surfaces that are matte, sometimes silk-glossy and have high-quality surfaces.

The fine appearance is created by a homogeneous microtexture.

A select product portfolio is available for both a decorative as well as a functional range for applications indoors and in architecture as well as in the industrial sector.

On request, microtextures are also available with pearl or iron mica effects.

#### The basics

Unlike smooth-finish powder coatings, fine structures contain structure agents that produce a non-static, low-order surface. The structure agents are incompatible with all smooth-finish coating powders. Even small amounts can cause problems – in the form of craters – in smooth-finish coating powders. Therefore, proper cleanliness of all powder-feeding or -recycling system components must be ensured when changing the powder in the coating system.

The fine structures that are available can be seen in the following overview of products.

Processing instruction PI 214 was created taking this product portfolio (fine structures) into account.

#### Introduction

To apply IGP fine-structure powder coatings, specific application and system-relevant prerequisites must be observed:

PI 214 contains user information on the process parameters which have a significant impact on the coating result. As a rule, IGP fine-structure powders are very easy to apply, and provide uniform structure formation within a broad range of layer thicknesses.

IGP fine-structure powder coatings are indicated by a 1 or a 4 in the third position of the IGP product index (example: 331, 334, 581, 591, etc.). The gloss is shown in the fourth position as "M" for matte and "T" for a deep matt gloss (example: 381M, 581T, 331S).



IGP Pulvertechnik AG  
Ringstrasse 30  
CH-9500 Wil  
Telefon +41 (0)71 929 81 11  
Telefax +41 (0)71 929 81 81  
[www.igp-powder.com](http://www.igp-powder.com)  
[info@igp-powder.com](mailto:info@igp-powder.com)  
[www.doldgroup.com](http://www.doldgroup.com)

# PG 214: IGP fine structures

## Processing

To apply IGP fine-structure powder coatings, we recommend using corona guns with electrostatic charging in negative polarity. However, application with tribo charging is also possible, depending on the powder coating system; please note the information in the corresponding technical data sheets in the section "Coating Equipment".

The application of IGP coating powders with a pearl mica effect can be done only using a corona gun with an electrostatic charge with negative polarity. Please also refer to processing instruction PI201 (Application of IGP effect powder coatings).

Both flat spray nozzles and baffle plate nozzles can be used for automatic and manual guns.

The application can be carried out as manual coating, but also using automatic systems in an automatic or semi-automatic coating process. In order to achieve a very uniform layer thickness distribution, we recommend application in automatic mode.

For coating in long stroke mode, the speed of the lifting devices should be adjusted to the transport speed (guns with a coordinated sine wave pattern). For coating in short stroke mode, the lifting height of the space between the guns is adjusted (coordinated gun turning points).

In general, all IGP fine-structure coatings can be transported with all commercial conveyor equipment, such as Venturi injectors and piston or vacuum pumps.

## Structure formation

As a rule, IGP fine-structure powders provide uniform surface structures within a broad range of layer thicknesses.

To obtain a uniform structure, layer thicknesses of 60-90 µm are recommended as a mean measurement, as well as mean high-voltage settings between 60 and 80 kV. Settings greater than 80 kV can have negative influences on the coating result, especially at low spray distances. Limiting the spray flow (µA) is not mandatory, but may contribute to the formation of a more uniform structure. To minimise the impact of the high voltage and the layer thickness on the structure, the use of ion leakage rings (low ionic charge) is recommended. When coating with ion leakage rings, layer thicknesses of up to 150 µm can be achieved without causing significant changes to the surface. The use of ion leakage rings is recommended especially when components are coated manually or objects with difficult geometries need to be coated. During coating, the minimum spray distance should be 200-250 mm. Shorter distances can cause the formation of visible stripes on the surface. Especially for IGP coating powders with a pearl mica effect, a greater distance must be maintained to prevent the formation of stripes and clouds.

Please also refer to processing instructions PI201 (Application of IGP effect powder coatings) and 213 (Living-Surfaces).

When applying fine-structure powders, avoid large variations in the thicknesses of the layers. This often occurs in manual pre- or post-coating and on outer edges (picture frame effect). To reduce differences in layer thickness in pre-coating and the subsequent automatic final coating, it is recommended that you carry out trials around the places that require pre-coating before starting coating. As a result, the double coating of parts of the object can be avoided.

## Recycling

Basically, all IGP fine-structure powders are recyclable. However, it should be noted that a very small proportion of overspray should be generated, as the processability of the powder may decrease slightly over time due to the large amount of handling in the recycling process. Recycled powder should be added to fresh powder automatically (if possible) and in uniform quantities. Thus, a constant ratio of fresh and recycled powder exists in the powder container.

Processing instruction PI 201 (Application of IGP effect powder coatings) must also be observed for pearl mica effects.

## Hanging the components

How the workpieces are to be hung must be determined prior to coating (horizontally or vertically). The spacing between the coating objects within the hanging rack, as well as the spaces between the hanging racks should be minimal and uniform. For larger distances between the hanging racks, it is recommended that the guns are automatically switched on and/or off by means of a component sensor.

## Curing

The curing conditions can be found in the corresponding data sheets.

Stability and technical information  
Please see the technical data sheets.

## Notice

These application-related recommendations are based on current knowledge, but are to be regarded as non-binding information and do not release the user from their obligation to conduct their own tests. The application, use and processing of our products occur beyond our control, and are therefore exclusively the responsibility of the user.



POWDER COATINGS.