

VR211 – For the use of IGP-KORROPRIMER

Introduction

IGP-KORROPRIMER are specially developed for extended corrosion protection. IGP powder coatings as well as water-based and solvent-based top coats are suitable for overcoating. An adhesive strength test must be carried out for these liquid coating systems.

The most important facts at a glance

1. observe the applicable documents such as the technical data sheet and the safety data sheet.

2 Work cleanly - only touch surfaces to be coated with gloves.

3 Only flawless powder-coated surfaces offer lasting corrosion protection.

4. standard parameter settings apply for the Application of the powder.

5. the prescribed Film thickness is between 60 - 100 µm, depending on the corrosivity category. These are described in DIN EN ISO 12944 and DIN EN ISO 55633. Alternatively, use the IGP recommendations from the IGP corrosion protection matrix.

6. observe the maximum specified oven temperatures and oven times in the technical data sheet.

As an alternative to complete curing, IGP-KORROPRIMER can only be annealed. "Gelling" means briefly reaching the possible object temperatures specified in the curing window. If a liquid coating is to be used as a subsequent top coat, the primer used must be completely cured.

Detailed process description

Introduction

IGP-KORROPRIMER are zinc-free primer powders specially developed for the heavy-duty corrosion protection of Steel and aluminium products. System build-ups with Steel primer and a suitable topcoat system fulfil the highest corrosion protection category C5-H, depending on the quality and type of preparation or pretreatment. IGP recommendations for the coating structure can be found in the corrosion protection matrix.

When processing IGP-KORROPRIMER, the technical data sheet and the associated safety data sheet must always be observed. The series of standards "Corrosion protection of steel constructions by coating systems" DIN EN ISO 12944 should be used as a basis for working with IGP-KORROPRIMER. It is also recommended to follow the recommendations of DIN 55633 "Corrosion protection of steel constructions by powder coating systems".

Substrates, preparation and pretreatment

All substrates to be coated must be free of oxidation products, scale, oil, grease or release agent residues. The substrates should not have any sharp edges (radius less than 2 mm). Laser-cut edges, welding spots and welding seams must be blasted or chemically etched before coating.

Steel pretreatment

Cleaning and degreasing

All standard bath or spray degreasers are suitable for cleaning and degreasing. Preparatory cleaning is essential for good corrosion protection.

Blasting

All common blasting processes can be used for pretreatment. After blasting, the workpieces should have a standard degree of cleanliness according to DIN EN ISO 12944-4, "metallic bright", at least SA 2.5. Sharp edges etc. should be avoided. After blasting, the average surface roughness Rz should be between 40µm and 60µm. The Film thickness of the primer must be greater than the surface roughness in µm so that the peaks are covered.

Sweep blasting (dust blasting) for galvanised surfaces

All standard sweep processes can be used. When sweep blasting zinc substrates, the abrasive must not contain any metallic components. Ideally, electrocorundum should be used.

Chemical conversion

Both iron and zinc phosphatising can be used as conversion layers on Steel. Modern alternative processes can also be used. A suitable chrome-free pre-treatment can also be used for galvanised substrates. A suitability test must be carried out in advance for these processes. IGP tests your coating structures.

Pretreatment of Aluminium

Chemical conversion of Aluminium

All common chromate treatments and suitable chrome-free alternatives can be used as chemical conversion. The suitability of alternative processes as an adhesion base for IGP-KORROPRIMER should be tested in advance (adhesion strength test, boiling test and cross-cut according to GSB, QUALICOAT).

Pre-anodising

Experience has shown that pre-anodization with optional rinsing solution as a pre-treatment method achieves the best results against filiform corrosion. We recommend regular adhesive strength tests of the coating structure (boiling test and cross-cut according to GSB, QUALICOAT).

Corrosion protection-compatible processing of components Edges

Sharp edges such as those caused by cutting, drilling, punching and sawing sheet metal must be broken. This prevents excessive retraction of the powder primer from the edge (edge crawling) during the curing process. Edges optimally prepared for coating should have a radius of no less than 2 mm.

Coating

IGP-KORROPRIMER can be processed with all commercially available powder coating plants (corona and tribo charging). Film thicknesses between 60 and 100µm are recommended (depending on the corrosion protection category). A high voltage setting between 60 and 100 kV is recommended for processing with corona guns in order to achieve good application efficiency. High-voltage settings between 40 and 50 kV can also be selected for overcoating and difficult geometries. Screens with a mesh size from 140 µm are recommended for ultrasonic screening. Recovered powder can be fed back into the application process in portions without any problems. If IGP-KORROPRIMER is overcoated with itself, e.g. to achieve very high Film thicknesses, the first layer should only be gelled. IGP-KORROPRIMER must be fully cured for overcoating with liquid paint systems. In addition, each coating system must be tested for intercoat adhesion before being used as a top coat.

Top coat with liquid coatings

We generally recommend sanding the IGP-KORROPRIMER layer for optimum adhesion strength.

Curing

If a top coat with powder is applied immediately after priming, we only recommend gelling the IGP-KORROPRIMER. Gelling" means briefly reaching the possible object temperatures specified in the curing window. The maximum permissible circulating air temperature must be observed (see technical data sheet). Excessive retention time in the oven can lead to a loss of intercoat adhesion. We therefore recommend gelling, especially for thick materials (greater than 3 mm). The primer also hardens with the stoving process of the topcoat system. Ensure that the curing temperatures of IGP-KORROPRIMER and the topcoat system are in line with each other, and to fully utilise the benefits of the outgassing friendly properties of IGP-KORROPRIMER V, it is recommended that the V variant is fully cured on substrates that are sensitive to outgassing.

Without an immediately subsequent top coat, the temperature/time specifications from the technical data sheet must be adhered to. To prevent intermediate adhesion losses, the maximum dwell time and the maximum circulating air temperature in the oven should not be exceeded

With directly heated gas ovens (depending on gas quality and oven occupancy), intermediate adhesion losses may occur when the maximum retention time at object temperature is reached. Check the adhesion strength regularly.

Notes on quality assurance

Clean working

Handling IGP-KORROPRIMER requires a clean working environment. This applies in particular to handling highly active substrates such as pickled Aluminium or blasted Steel (wear clean gloves!). Primed workpieces must not be touched with bare hands if they are to be recoated.

Subsequent processing

Subsequent mechanical processing (e.g. forming, milling and drilling) of coated steel parts must be avoided for corrosion protection reasons.

Storage of powder

Observe the durability of IGP-KORROPRIMER, especially the reactive low-temperature paints. Storage of IGP-KORROPRIMER must be dry and protected from direct sunlight at temperatures below 25 °C. Storage of larger or unneeded quantities of powder in the coating area and especially in the direct vicinity of the curing oven must be avoided.

Storage of coated (primed) parts

A maximum of 24 hours should elapse between the priming process and the subsequent top coat. It is generally recommended to apply the top coat directly after the priming process. Substrates that have only been primed must be topcoated within 6 h. If possible, primed components should not be stored. If this is the case, the following aspects must be taken into account:

Storage must be dry and clean

If possible, the storage temperature should be within a temperature range of 20 °C to 30 °C

Storage must take place under exclusion of UV radiation / solar radiation

Be aware of and avoid possible condensation due to high temperature differences

Suitable cleaning is recommended for primed items that have been stored for more than 24 hours

Legal notice

Our application-technical consultation, whether verbal, in writing or through tests, is given to the best of our knowledge, but is only non-binding and does not exempt you from carrying out your own tests. The application, use and processing of the products are beyond our control and are therefore exclusively your responsibility. For further information, please refer to our corrosion matrix .



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