

INFRALIT PE 8640-50

Low temperature curing polyester powder

INFRALIT PE 8640-50 is a TGIC-free powder coating based on solid high quality polyester resin. At elevated temperature the powder will melt, cure and form the final paint film.



INFRALIT PE 8640-50 is suitable for steel and aluminium constructions in objects where good weather resistance is required.

INFRALIT PE 8640-50 forms a mechanically and chemically resistant paint film which has good corrosion resistance and good colour stability and gloss retention also in outdoor conditions.

The powder coating is cured at a lower temperature than usual, as a result of which some of the reaction by-products do not evaporate from the surface of the paint film as they do at a higher temperature. This may appear in thicker parts of the material as pale ingredient or, in some cases, over the entire object. The phenomenon may cause a decrease in gloss, but the light mist can be wiped off with a soft cloth. At a metal temperature of at least 160°C for at least 10 minutes, the phenomenon will not occur.

Low temperature curing powder coatings cure very fast. When optimizing the process, the curing must be assessed by various tests on the paint film and, if necessary, by measuring and evaluating the heating curves of the ovens.

TECHNICAL DATA

Fields of application	Machinery, Steel constructions
Recommended substrate	Steel, Zinc, Aluminium
Binder	Polyester
Solids	100 %
Practical spreading rate	6 - 10 m ² /kg depending on the film thickness.
Film thickness	The recommended film thickness is 60 - 100 µm. The optimal film thickness must be defined case-specifically by test applications. In some cases the film thickness might exceed the previously mentioned maximum value.
Colours	By agreement.
Gloss (60°)	65-99
Density	Approx. 1.25 - 1.80 kg/dm ³ depending on colour.

Storage

The storage life is minimum 18 months in dry and cool conditions when the temperature during storage and transportation is max. +25°C.

Take special care during high temperature seasons. Avoid storing close to heat sources and heaters in trucks and storages. Don't store in direct sunlight. The recommended expiry date of the powder coating that has been stored according to the instructions is shown on the package label.

Packaging

15 kg or 20 kg according to the density of the powder.

DIRECTION FOR USE

Surface preparation

STEEL SURFACES: Remove grease and dirt. After that blast-cleaning at least to preparation grade Sa 2½ (ISO 8501-1) and/or a suitable chemical pretreatment.

ALUMINIUM SURFACES: Remove grease and dirt. After that chromating or alternatively a suitable chemical pretreatment.

HOT-DIP-GALVANIZED AND ZINC-ELECTROPLATED SURFACES: Remove grease, dirt and white rust by e.g. alkali wash. Depending on exposure conditions, chromating or alternatively a suitable chemical pretreatment is also required.

Application method

Corona charging spray

Curing time

20 min/145°C (substrate temperature)

15 min/150°C (substrate temperature)

10 min/160°C (substrate temperature)

Curing time indicates the time needed for the curing of the coating.

Curing parameters and oven type may effect the colour and gloss of the coating.

The temperature of the powder coating has to reach the temperature inside the paint shop before the package is opened. The application properties may be deteriorated, if the temperature of the powder is lower than this.

HEALTH AND SAFETY

Safety and precaution measures

See safety data sheet.

The powder itself is non-flammable, but with air it can form an explosive mixture that in presence of adequate ignition energy ignites. The lower explosion limit of typical powder coatings is between 20 g/m³ and 80 g/m³ (CEPE, Safe Powder Coating Guideline 8th Edition, 2020). Ventilation of the spray booth should be adjusted so that the concentration of powder in the air is less than 50% of the lower explosive limit value. On calculation of the powder concentration in the spray booth, the powder deposited on the workpiece is not taken into account. In order to avoid the discharge of powder from the booth into adjacent working spaces, the speed of air flow in the apertures of the booth must not fall below 0.5 m/s. Spray painters should wear dust masks and protective gloves. Any spatter of powder on the skin should be washed off with water and soap.

FILM PROPERTIES

Typical values	Substrate 0.8 mm thick cold-rolled steel, curing 20 min/145 °C, film thickness 70 µm. Testing 1 h after curing:
Cross-cut test ISO 2409	GT0
Cupping ISO 1520, mm	6.0
Impact resistance, ISO 6272-2, direct, kgcm	40.0
Impact resistance, ISO 6272-2, reverse, kgcm	40.0
Bend test (cylindrical mandrel) ISO 1519, mm	5.0

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