

OXYPLAST POLYESTER PE54

A TGIC-free industrial polyester powder coating

DESCRIPTION

OXYPLAST PE54 is a TGIC-free polyester powder coating for industrial applications. The range includes both smooth coatings and coatings with a special surface structure, whether or not in combination with a metallic aspect (fine structure "Sandtex" – ST, coarse structure "Texture" – WR, antique finish "Vein" – A, hammer finish – H).

PROPERTIES OF THE POWDER

- **Density (g/cm³)** (ISO 8130-2:1992) depending on the colour (white: 1.65)
- **Particle size** Optimized for electrostatic applications and in function of the coating aspect.
- **Gel time 180 °C** (ISO 8130-6:1982) 160 - 220 s
- **Storage** Dry, at max. 25 °C: at least 3 years
- **Application** With Corona gun or tribo gun (PE54/TR powders)
Layer thickness:
 - ° 60 - 120 µm (smooth standard colours)
 - ° 80-100 µm (smooth coatings with metallic aspect)
 - ° 70-90 µm (fine structure "Sandtex" ST)
 - ° 100-120 µm (coarse structure "Texture" WR, antique finish "Vein" A, hammer finish H)
- **Curing schedule** 10 min. at 180 °C (metal temperature)
5 min. at 200 °C (metal temperature)
18 min. at 170 °C (metal temperature)
Preferably not above 200 °C (metal temperature)

MECHANICAL PROPERTIES OF THE COATING

- **Substrate** Cold-rolled steel (0.8 mm), degreased
 - **Curing schedule** 10 min. 180 °C (metal temperature)
 - **Layer thickness** (ISO 2178:1982) 60 - 80 µm (smooth coating)
 - **Gloss** 60° (ISO 2813:1994) 50-100 % (smooth coatings)
2-50 % (special surface structure)
 - **Adhesion** (ISO 2409:2007) Gt 0
 - **Buchholz hardness** (ISO 2815:1973) ≥ 80
 - **Pencil hardness** (ASTM D3363-00) H - 2H
 - **Clemen hardness** (ISO 1518:1992) > 3 kg
 - **Erichsen** (ISO 1520:1993) ≥ 5 mm
 - **Impact (direct)** (ISO 6272:1993) ≥ 20 kg.cm
 - **Impact (reverse)** (ISO 6272:1993) ≥ 20 kg.cm
 - **Conical mandrel** (ISO 1519:1973) max. 40 mm
- REMARK: Due to the the higher minimum coating thickness and the use of structure additives, the coatings with a special surface structure typically exhibit a slightly lower flexibility.

ANTI-CORROSIVE PROPERTIES

For obtaining optimal adhesion and corrosion protection, a proper surface pre-treatment has to be applied, depending on the substrate:

- Steel (indoor application) : iron phosphatation
- Steel (outdoor application) : zinc phosphatation, or better: tri-cationic phosphatation *
- Hot-dip galvanized steel : chromatisation, or better: tri-cationic phosphatation *
- Metallisation : –
- Aluminium : chromatisation (DIN 50939) or Qualicoat-approved chrome-free pre-treatment

* Or equivalent phosphate- and/or chrome-free pre-treatments. The guidelines from the supplier of the chemical pre-treatment must be strictly followed.

REMARKS

- It is strongly recommended to apply a **transparent polyester topcoat** on the **OXYPLAST PE54** coatings with **metallic effect**, in order to protect the metallic basecoat against abrasion and corrosion:
 - PE54/(TR)**B**, both smooth coatings and coatings with special surface structure:
 - in humid environment
 - for all applications that require a high abrasion resistance
 - PE54/(TR)**X**, both smooth coatings and coatings with special surface structure:
 - for all applications that require a high abrasion resistance
 - when exposed to highly corrosive atmospheric conditions (marine or industrial environment)

Due to their irregular surface, the antique finish (**/A**) and hammer finish (**/H**) coatings don't have sufficient coating thickness for an optimal protection of the substrate.. Also under less harsh conditions, a transparent polyester topcoat will give additional protection.

- **OXYPLAST PE54** is only partially compatible with standard polyester powder coatings (e.g. OXYPLAST PE50). Especially for the textured coatings a good cleaning of the spray booth is required!

FUNCTIONAL INFORMATION

- **Mastics/Sealants**

Before the application of a sealant, the coating needs to be degreased.

Some degreasing agents may affect the gloss and/or the aspect of the coating. An efficient degreasing, without affecting the aspect of the coating, is obtained with Promanté "Foam Cleaner" (or an equivalent product).

A good adhesion between the OXYPLAST PE54 coatings is obtained with the Promanté "X-Treme Sealer" (or an equivalent product) for the seals, and with Promanté "Constru Fix" (or an equivalent product) for the gluing.

For textured coatings, a specific "primer" is advised, in order to improve the adhesion of the mastic/sealant. Promanté "X-Primer" (or an equivalent product) can be used.

For more detailed information, refer to OXYPLAST BELGIUM.

- **Storage of finished parts**

OXYPLAST BELGIUM advises to pack finished parts in such a way that aspiration is possible, in order to prevent local condensation.

Furthermore, OXYPLAST BELGIUM advises to store packed pieces in a dry room, in which contact with direct sunlight is avoided.

In the event of storage of finished pieces in poorly ventilated packing, in extreme cases, under the influence of condensation and direct sunlight, local discoloration of the coating may occur for dark colours.

This discoloration can be undone by locally heating the surface of the pieces for a short time to approximately 150 °C. A paint stripper, gas burner for shrink foil or a powerful hairdryer can be used for this purpose. This treatment will not affect the aspect of the coating.

This information is given in good faith. A warranty, expressed or implied, cannot be supplied as results may vary depending on application conditions.