

POLYESTER THERMOSETTING POWDER COATING TGIC “QUALICOAT APPROVED”

Product fundamental characteristics

Polyester TGIC powder coatings, **Qualicoat approved series**, are based on polyester resins characterised by very high resistance to atmospheric agents and UV radiations and on pigments selected for their high thermal resistance and stability to light. The series has been developed in conformity with Qualicoat Class 1 specifications.

Cure cycle

From 160°C x 20' to 200°C x 20' according to the required reactivity.

Gloss

According to the required finishing, the gloss of **Polyester TGIC-Free Qualicoat approved** powder coatings can be chosen inside the range 15 - 95 units (value determined at 60°).

Coverage

The theoretical coverage of ST powder coatings is calculated according to this formula:
Coverage (m²) = 1000/(S x G)
Where S is the coating thickness in microns and G the specific weight of the powder.

Application

According to the customer's specific needs, **Polyester TGIC Qualicoat approved** powder coatings can be formulated particularly for the following application systems:

- Corona;
- Tribo;
- Disk.

Substrate preparation

Before the painting, the item should be adequately pre-treated in accordance with surface type, final use and required performances. The following table can be used as starting point for the pre-treatment choice

| Substrate | Indoor use | Outdoor use | Architecture |
|-------------------|---|---|-----------------------|
| Aluminium | Soil removal, Chromate, Chrome-Free | Chromate, Chrome-Free | Chromate, Chrome-Free |
| Steel | Soil removal, Iron Phosphate, Zinc Phosphate, Sand-blasting | Iron Phosphate, Zinc Phosphate, Sand-blasting | - |
| Zinc coated steel | Acid attack, Iron Phosphate, Zinc Phosphate, Chromate | Acid attack, Iron Phosphate, Zinc Phosphate, Chromate | - |

Particle size distribution

Polyester TGIC Qualicoat approved powder coatings are characterized by an average particle size between 30 and 40 microns. According to the customer's specific needs, specific particle size distributions can be supplied.

| | |
|-----------------------------|---|
| Typical applications | <p>Polyester TGIC Qualicoat approved powder coatings can be used for painting several products for outdoor use. Typical applications include:</p> <ul style="list-style-type: none"> • Aluminium frames and fixtures • Articles for garden • Car accessories • Bicycles and motorbikes details • Domestic items • Agricultural machinery |
| Storage stability | <p>Polyester TGIC Qualicoat approved powder coatings are stable for at least 6 months if stored in a dry place, at temperatures below 30°C.</p> |

| General properties of the series ⁽¹⁾ | Regulation | Acceptability requirements | |
|---|-----------------|---------------------------------------|--|
| Gloss | ISO 2813 | 0 - 30 31 - 70 71 - 100 | +/- 5 units Category 1 +/- 7 units Category 2 +/-10 units Category 3 |
| Thickness | EN ISO 2360 | 60 microns | |
| Adhesion ⁽²⁾ | EN ISO 2409 | GT0 | No film detachment with cutters spaced 2 mm |
| Indentation Buchholz ⁽²⁾ | EN ISO 2815 | 80 | Minimum 80 with the specified required coating thickness. |
| Cupping test ⁽²⁾ | EN ISO 1520 | 5 mm | The coating must not show any sign of cracking after the test |
| Bending test ⁽²⁾ | EN ISO 1519 | 5 mm | The coating must not show any sign of cracking after the test |
| Impact resistance ⁽²⁾ | ASTM D 2794 | 2,5 Nm | Viewed with the naked eye, the coating must not show any sign of cracking or detachment |
| Resistance to humid atmospheres ⁽²⁾ | DIN 50017: | 1000 hours | No infiltration exceeding 1 mm on both sides of the scratch, and no change in colour or blisters visible to the naked eye. |
| Acetic acid salt spray resistance ⁽²⁾ | ISO 9227 | 1000 hours | An infiltration of max. 16 mm ² is allowed over a scratch length of 10 cm but the length of any single infiltration must not exceed 4 mm. |
| Accelerated weathering ⁽²⁾ | EN ISO 11341 | 1000 hours | The loss of gloss after the test must not be greater than 50% of the original value. Colour change: according to Delta E values stipulated in the table annexed to the Qualicoat specifications. |
| Industrial atmosphere (Kesternich) ⁽²⁾ | EN ISO 3231 | 0,2 l of SO ₂ 24 cycles | No blistering visible to the naked eye; the maximum infiltration at the cross-incision is 1 mm. |
| Resistance to mortar ⁽²⁾ | ASTM D 3260 | 24 hours | The mortar must be easy to remove without leaving any residues or colour changes |
| Resistance to boiling water ⁽²⁾ | Qualicoat Terms | 2 hours | There must not be any defects or detachment . Some colour change is acceptable. |
| Natural weathering (Exposure in Florida) ⁽²⁾ | ISO 2810 | 12 months | The loss of gloss after the test must not be greater than 50% of the original value. Colour change: according to Delta E values stipulated in the table annexed to the Qualicoat specifications. |
| Sawing, drilling, milling ⁽²⁾ | Qualicoat Terms | | The coating must not crack or chip when sharp tools are used. |

⁽¹⁾ All tests have been carried out on smooth glossy finishes.

⁽²⁾ Tests carried out on aluminium panels chromed in conformity with Qualicoat specifications, with film thickness of about 60 microns.

Note

The information given in this Technical Data Sheet, based upon laboratory tests, is currently correct to the best of our knowledge. Since product application and conditions vary and are often beyond our control, we can guarantee only the product quality itself. In the light of continuous product improvement, ST Powder Coatings reserves the right to modify without notice the content of this technical sheet.