

Technical Datasheet

Interpon Redox One Coat



Polyester powder coatings single layer with corrosion protection up to C4M

Product description

Interpon Redox One Coat is a polyester based powder coatings, formulated without the use of TGIC to ensuring a good corrosion protection with only 1 single layer. It isolates the steel from its environment with a water and airproof barrier to block direct contact with oxygen and other corrosive agents and prevent corrosion.

Interpon Redox One Coat provide single layer corrosion protection up to C4 Medium over steel substrates. **Interpon Redox One Coat** provide better corrosion protection then conventional polyester powder coating. Its easy to apply and provide good edge coverage. Can be formulated in smooth, fine texture in several levels of gloss.

Powder properties

| | Typical value |
|----------------------------|---|
| Chemical Type | Polyester – TGIC Free |
| Density | 1.2 - 1.9 g/cm ³ , depending on colour and effect |
| Recommended film thickness | 70 - 90µm |
| Shelf life | 24 months below 30 °C 12 months below 35 °C |
| Storage Conditions | Under dry, cool ($\leq 30^{\circ}\text{C}$) conditions (open boxes must be resealed) |
| Curing schedule | 15-35 min at 180°C 12-25 min at 190°C 10-20 min at 200°C (object temperature) |

Pre-treatment

Surface preparation depends upon the metal, the type of surface, its conditions and the required performance.

Substrate: Mild/steel, Cast steel

Mechanical pretreatment: Grit Blasting Sa 2.5 in accordance with ISO NF EN 8501-1. Roughness: Rz 42-84 µm / Ra 6-12 µm

Chemical pretreatment: Degreasing & phosphating (or equivalent) followed by passivation, DW rinsing and drying.*

Electro Zinc steel, Hot dip galvanized steel

Mechanical pretreatment: Sweeping with a maximum zinc layer thickness reduction of 5 to 10 µm depending on the initial zinc thickness

Chemical pretreatment: Degreasing by phosphating and passivation or primary wash Cromadex 903, which can be substituted by a chemical passivating with the Cromadex MC245.

Zinc sprayed (gas flame/electrical deposition)

Mechanical pretreatment: Grit Blasting Sa 3 in accordance with ISO NF EN 8501-1. Roughness: Rz 42-84 µm / Ra 6-12 µm

Chemical pretreatment: Banned

* Also applicable for Electro Zinc steel substrate

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Application

This product should be applied at minimum 60µm.

All powders can show small color differences from batch to batch, this is normal and unavoidable.

Bonded products have better application properties than blended products (more stable) but attention should still be paid to line settings in order to avoid "marble effect" and changes in aspect after recycling.

Products with different codes should not be mixed even if same colour and gloss.

Different substrates (aluminium, steel, galvanized steel...), use of primer, and big changes in film thickness may give a different aspect.

Applicators and fabricators are advised to use a single batch for parts that will be assembled together. Differences are more likely with special effect powders.

It is recommended that for consistent application and appearance product be fluidized during application.

Powders can be applied by manual or automatic electrostatic spray equipment.

| | |
|---------------------------|---|
| Application Method | Electrostatic |
| Recycling | Unused powder can be reclaimed using suitable equipment and recycled through the coating system, but a minimum of 70% virgin powder should be used. |

Post application

For specific advice on the suitability of post coating processes such as bending or the use of sealants, adhesives, thermal break, cleaning etc. Please consult AkzoNobel.

Test conditions

Actual product performance will depend upon the circumstances under which the product is used.

Testing has been determined under laboratory conditions using the following application properties and is for guidance only.

| | |
|------------------------|--------------------------------------|
| Pre-treatment | Iron Phosphate |
| Substrate | Cold rolled steel (CRS) |
| Curing schedule | 15 min at 200°C (object temperature) |
| Film Thickness | 70 - 90µm |

Mechanical tests

| | Typical value | Method/standard |
|--------------------------|---|------------------------------|
| Adhesion | Class 0 | ISO 2409 (2 mm Crosshatch) |
| Erichsen cupping | Pass 5 mm | ISO 1520 |
| Flexibility | Pass 5 mm | ISO 1519 |
| Hardness | >80 | ISO 2815 (Buchholz hardness) |
| Impact resistance | Pass 2,5 Joules reverse & direct (20 in lb) | ISO 6272-2 (d/r) |

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Chemical and durability tests

Whilst maintaining the general protective and anti-corrosive properties of powder coatings, aluminum and copper/bronze metallic finishes, when submitted to the listed tests, may rapidly show a loss of metallic aspect. The results shown are based on tests which (unless otherwise indicated) have been carried out under laboratory conditions and are given for advice only, actual performance depends upon the circumstances under which the product is used.

| | Typical value | Method/standard |
|-----------------------------------|---|-----------------|
| Chemical Resistance | Generally good resistance to acid, alkalis and oil at room temperatures. | |
| Salt spray test | Pass, no corrosion creep more than 2 mm from scribe, No blistering, brown oxidation along the scribe, 480 h, Cold rolled steel panel (Gardobond A4976/6800/OC panels) | ISO 9227 |
| Sulphur Dioxide Resistance | Pass 24 cycles– no blistering, loss of gloss or discoloration | ISO 22479 |

Environmental and durability tests

| | Typical value | Method/standard |
|-------------------------------|------------------------------|-----------------------------|
| Accelerated weathering | ≥50% Gloss retention, 1000 h | ISO 16474-2 (Xenon-arc) |
| | ≥50% Gloss retention, 300 h | ISO 16474-3 QUV B 313 (GSB) |

Repair

| | |
|----------------------------|--|
| Surface preparation | Sanding + Air cleaning Any damage of the coating system must be repaired as soon as possible. |
| Application | For repairs a PU (2K or 1K) liquid paint is recommended. |

Additional Information

Neutral Salt Spray ISO 9227:2017
Substrate: Cold rolled steel panel (Gardobond A4976/6800/OC panels) 105mm x 190mm x 0,8 mm
Pretreatment: Iron Phosphating
Film thickness: 70 - 90 µm
Adhesion on surface before test: Class 0

Time: 480 hours
Average corrosion from the scribe (mm): <2 mm
No blistering, Brown oxidation along the scribe
Using a 0,5 mm diagonal scribe

Evaluation method
- rinse with tap water
- clean the corroded area with a sponge
- attempt to lift the coating from the scribe line with a sharp tool
- measure the average corrosion from the scribe in accordance with ISO 9227

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Safety Precautions

This product is intended for use only by professional applicators in industrial environments and should not be used without reference to the relevant health and safety data sheet which Akzo Nobel has provided to its customers.

Disclaimer

IMPORTANT NOTE: The information in this data sheet is not intended to be exhaustive and is based on the present state of our knowledge and on current laws: any person using the product for any purpose other than that specifically recommended in the technical data sheet without first obtaining written confirmation from us as to the suitability of the product for the intended purpose does so at his own risk. It is always the responsibility of the user to take all necessary steps to fulfil the demands set out in the local rules and legislation. Always read the Material Data Sheet and the Technical Data Sheet for this product if available. All advice we give or any statement made about the product by us (whether in this data sheet or otherwise) is correct to the best of our knowledge but we have no control over the quality or the condition of the substrate or the many factors affecting the use and application of the product.

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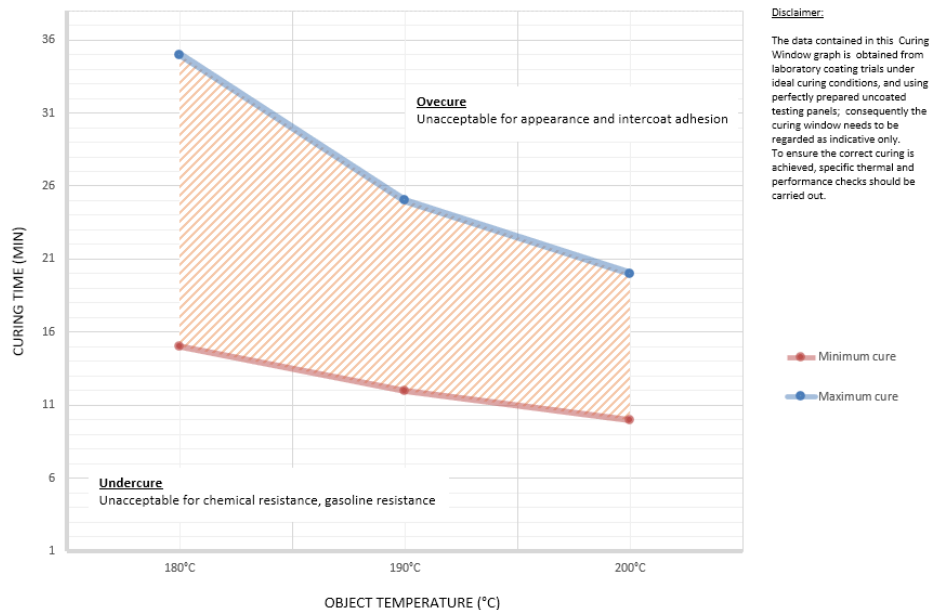
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Appendix

Curing window - Interpon Redox One Coat



Corrosivity Classes and Durability categories based on ISO 12944:2018

| ISO 12944:2018 Corrosivity classes | | | | |
|---|------------------|------------------------|--------------------------------|-------------------------------|
| Category | Low < 7 years | Medium 7 – 15 years | High 15-25 years | Very High 25+ years |
| C2 Low | - | - | - | 480 h |
| C3 Medium | 120h | 240h | 480h | 720h |
| C4 High | 240h | 480h | 720h | 1 440h 1 680 h (10 cycles) |
| C5 Very high | 480h | 720h | 1 440 h 1 680 h (10 cycles) | 2 688h (16 cycles) |
| Neutral Salt Spray (ISO 9227) Cyclic Corrosion (ISO 20340) | | | | |

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