

Product Datasheet



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BU Powder Coatings

Interpon PZ 660

Product Description

Interpon PZ 660 is a powder coating primer containing zinc which is designed to give enhanced corrosion protection of mild steel. **Interpon PZ 660** has been designed to be overcoated with powder topcoats such as **Interpon TC**, **Interpon D1094**, **Interpon D1036**, **Interpon D2525** or **Interpon D2000**. In this datasheet, the **Interpon PZ 660** primer overcoated with a finish is termed the "**Interpon PZ 660 system**".

Powder Properties

Chemical type	Thermosetting epoxy, rich in zinc
Appearance	Grey metallic, slightly granular film
Particle Size	Suitable for electrostatic spray
Specific gravity	1.8 – 2.2 g/cm ³
Storage	Dry, cool conditions below 30°C
Stoving schedule (object temperature)	15 – 40 minutes at 110°C (green cure) 12 – 30 minutes at 130°C (green cure) 12 – 23 minutes at 160°C (minimum) 8 – 17 minutes at 170°C 2 – 8 minutes at 200°C 1 min. 30 sec. – 5 min 30 sec. at 220°C (maximum)

Test Conditions

The results shown below are based on mechanical and chemical tests which (unless otherwise indicated) have been carried out under laboratory conditions using a complete coating system and are given for guidance only. Actual product performance will depend upon the circumstances under which the product is used.

Substrate	Steel, 0.5 mm thick
Pretreatment	Cold trichloroethylene degreasing
Film Thickness	70± 10 µm
Curing	10 minutes at 170°C (PZ 660 alone) 5 minutes 30 sec. at 220° (Maximum curing conditions)
Powder Topcoat	Interpon D36 (RAL9010)
Film Thickness	70± 10 µm
Curing	8 minutes at 200°C

Corrosion Tests

Substrate	Steel, 2mm thick
Pretreatment	As detailed in results tables in Appendix
Film Thickness	As detailed in results tables in Appendix
Curing	As detailed in results tables in Appendix

Mechanical Tests

Adhesion	ISO2409 (2mm crosshatch)	Class 0 (PZ660 alone) Class 0 (system)
Erichsen Cupping	ISO1520	Pass 8mm (PZ660 alone) Pass 6mm (system)
Impact	ISO6272	Pass 0.5 kg.m (PZ660 alone) Pass 0.5 kg.m (system)
Flexibility	ISO1519 (Cylindrical Mandrel) ISO6860 (Conical Mandrel)	Pass 4mm (PZ660 alone) Pass 5mm (system) No cracking (PZ660 alone) No cracking system

Corrosion Tests

The **Interpon PZ 660** system provides excellent protection against corrosion on the surface to which it is applied. However the efficiency of this protection depends on the surface, its preparation before coating and the topcoat applied. If there is penetrating damage to the coating system, there may be localised signs of corrosion where damage has occurred but this will not affect the adhesion of the film to the adjacent surface. **Interpon PZ 660** considerably limits the extent of spread of corrosion in the event of coating damage.

Neutral Salt Spray	ISO9227	Results are detailed in Table 1 of Appendix
Cycle 3 C	Renault D17 1686	Results are detailed in Table 1 of Appendix
SCAB Corrosion	Volvo STD 1027, 1372	Results are detailed in Table 2 of Appendix
Natural Exposure		Results are detailed in Table 3 of Appendix

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Pretreatment

For maximum protection it is essential that **Interpon PZ 660** is applied to clean, dry oxide-free ferrous metal surface, followed by **Interpon** topcoat. Surface preparation depends upon the type of surface, its condition and the required performance.

For good protection against corrosion the following is recommended:

Grit blasting to at least SA 2.5 in accordance with ISO 8501.1, 1998 (F), roughness equivalent to B9a, B10b, or B10a (Rz 35-65µm ; Ra 6 – 10 µm) using Rutogest n°3 LCA-CEA, in accordance with NFE 05051 (1981) and/or

Degreasing & Phosphating followed by passivation, rinsing with demineralised water and drying. Follow the procedural advice of the pretreatment supplier.

Application

Interpon PZ 660 can be applied by manual or automatic, tribo-electric or standard electrostatic spray equipment. Tribo application should be tested before commencing production. The application conditions given below are for information only:

Fluidising air pressure:	1.5kg/cm ² initially then 1kg/cm ²
Transport air pressure:	0.5 to 0.8kg/cm
Recommended voltage:	65 to 70kV
Recommended thickness:	70 microns (+50/-10)

Unused powder can be reclaimed using suitable equipment and recycled through the coating system, but a minimum of 80% new powder should always be used. Nozzles must be cleaned regularly by blowing down every 30 minutes during continuous use. Nozzles with deflectors are preferable for easier application and cleaning. **Interpon PZ 660** should be cured, or at least gelled, using the recommended stoving schedules, before application of the topcoat. The object temperature must not be below 130°C or above 220°C. The primer should be cured in a convection oven, optionally with infra-red heaters, with air temperature not exceeding 220°C.

Note: Failure to comply with the recommended curing conditions may affect the adhesion of the topcoat and cause degradation of the coating properties of the system. Parts coated with **Interpon PZ 660** should not be handled if possible. If handling is unavoidable, clean lint-free gloves must be worn.

Topcoat Application

Interpon PZ 660 should be overcoated on the same site within 12 hours of applying the primer. If the delay exceeds 12 hours the parts should be heated for 10 minutes at 120-150°C (object temperature). The delay must not exceed 12 hours. Refer to the Product Data Sheet for the powder topcoat for application parameters.

To ensure the integrity of the **Interpon PZ 660** system, as well as optimum performance, the whole system must be cured in accordance with the recommended curing conditions for the topcoat. Curing should be carried out in a convection oven, optionally with infra-red heaters. There must be a uniform heat distribution inside the oven.

Note: Failure to comply with the recommended final curing conditions may cause variations in colour and gloss and cause degradation of the coating properties of the system.

A detailed protocol for applying **Interpon PZ 660** system is available on request.

Damage Repair

Any damage to the **Interpon PZ 660** system must be repaired as soon as possible.

Surface preparation

Damaged areas must be clean and free of grease or rust. Dry-sand the area with 600-grade paper down to the substrate. The area must be completely free of dust and cleaned with a non-aggressive solvent before proceeding.

Application

For repairs the following two-coat liquid paint system from International Protective Coatings is recommended:

1st Coat : two-pack zinc-rich epoxy primer, **Interzinc 72**

2nd Coat : two-pack polyurethane topcoat, **Interthane 990**

Product Data Sheets for these products can be obtained from International Protective Coatings at Felling (Tel: +44 (0) 191 469 6111) or the local office.



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Safety Precautions Please consult the Material Safety Datasheet (MSDS)

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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 fulfill 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. Therefore, unless we specifically agree in writing otherwise, we do not accept any liability whatsoever for the performance of the product or for any loss or damage arising out of the use of the product. All products supplied and technical advice given are subject to our standard terms and conditions of sale. You should request a copy of this document and review it carefully. The information contained in this data sheet is subject to modification from time to time in the light of experience and our policy of continuous development. It is the user's responsibility to verify that this data sheet is current prior to using the product. Brand names mentioned in this data sheet are trademarks of or are licensed to AkzoNobel

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Table 1: Neutral Salt Spray (in accordance with ISO9227) and **Cycle 3C** (Renault D17 1686 Test) - one cycle consists of the following stages:

1.24 hours salt spray (5% NaCl) at 35°C, 2.4 x 24 hours in climatic chamber as follows - 8 hours damp heat (40±1°C, 98±2% RH); 16 hours ambient air (20±1°C, 73±2% RH)
3.48 hours drying in climatic chamber at 20±1°C, 63±2% RH.

		Pretreatment:	Solvent degreasing, grit blast (SA 2.5; R_a 6-12µm)	Alkaline degreasing, iron phosphate, demineralised water rinse & dry	Alkaline degreasing, iron phosphate, Cr passivation, demineralised water rinse & dry			
		Film Thickness:	PZ 660 = 60-70µm Interpon D36 = 80-100µm	PZ 660 = 70-90µm Interpon D36 = 100-120µm	PZ 660 = 70-95µm Interpon D36 = 95-120µm			
		Curing Times (@ 200°C):	PZ 660 = 8 minutes Interpon D36 10 minutes	PZ 660 = 8 minutes Interpon D36 = 10 minutes	PZ 660 = 8 minutes Interpon D36 = 10 minutes			
		<i>Results →</i>	Neutral Salt Spray	Cycle 3C	Neutral Salt Spray	Cycle 3C	Neutral Salt Spray	Cycle 3C
Neutral Salt Spray for 1000 hours & Cycle 3C for 6 cycles	Scribe:	Rust Blisters - Size - Spread Adhesion loss	XX/XXX 2-0 2-3 blisters -	X/XX 2-4 4-5mm 3mm	X/XX (6-35mm) Significant delamination - ~20mm	X 4, peeling 3mm 2mm	XX (<1mm) 0 0 ≤1mm	X 0 a few 1mm
	Surface:	Rust, R _i Blisters Adhesion	0 0 0	0 0 -	0 0 0	0 0 -	0 0 0	0 0 -
Neutral Salt Spray for 1500 hours & Cycle 3C for 9 cycles	Scribe:	Rust Blisters - Size - Spread Adhesion loss	XXX 2-3 2-3 blisters -	- - - -	- - - -	X Peeling 5mm 9mm	- - - -	X 3 2mm 1.5mm
	Surface:	Rust, R _i Blisters Adhesion	0 0 0	- - -	- - -	0 0 -	- - -	0 0 -
Neutral Salt Spray for 2000 hours & Cycle 3C for 10 cycles	Scribe:	Rust Blisters - Size - Spread Adhesion loss	XXX 3-4 2-3 blisters 3mm	X/XX 3-5 5mm 4-5mm	XX (~60mm) Total delamination - ≥60mm	- - - -	XX (1mm) 0 0 ~8mm	- - - -
	Surface:	Rust, R _i Blisters Adhesion	0 0 0	0 0 -	0 0 0	- - -	0 0 0	- - -
Neutral Salt Spray for 2500 hours & Cycle 3C for 15 cycles	Scribe:	Rust Blisters - Size - Spread Adhesion loss	XXX 3 2-3 blisters -	XX 3-5 6mm 4-5mm	- - - -	X Peeling ≥12mm 15mm	- - - -	X/XX 4 3mm 3mm
	Surface:	Rust, R _i Blisters Adhesion	0 0 0	0 0 -	- - -	0 0 -	- - -	0 0 -
Neutral Salt Spray for 3000 hours & Cycle 3C: Not applicable	Scribe:	Rust Blisters - Size - Spread Adhesion loss	XXX 3-4 several blisters 4mm	- - - -	XXX (total) Total delamination - - -	- - - -	XXX (1mm) 4 1 large blister ~15-20mm	- - - -
	Surface:	Rust, R _i Blisters Adhesion	0 0 0	- - -	0 0 0	- - -	0 0 0	- - -

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Key to Corrosion Test Results (Neutral Salt Spray & Cycle 3C):

	At Scribe	On General Surface
Rust	None 0 Slight X Moderate XX Severe XXX	Rating in accordance with ISO4628 R ₁ 0→5 (Best→Worst)
Blisters	Size in accordance with ISO4628: 0 none (invisible at 10x magnification) 1 just visible (10x magnification) 2 just visible (normal vision) 3 clearly visible (≤0.5mm) 4 0.5 to 5mm 5 >5mm Spread of blistering measured in mm from either side of scribe or as number of blisters	
Adhesion	Loss of adhesion from edge of scribe, in mm (by peeling using a scalpel)	In accordance with ISO2409 Class 0→5 (Best→Worst)



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Table 2: SCAB Corrosion Test (Volvo) - Natural exposure at Segé, near Malmö, Sweden, 4km from Baltic coast, in accordance with STD 1027, 1372. Twice weekly spraying with a 5% salt solution.

	Pretreatment:	Solvent degreasing, grit blast (SA 2.5; R _a 6-7µm)
	Film Thickness:	PZ 660 = 50-70µm, Interpon D36 = 80-100µm
	Curing Times:	PZ 660 = 12 minutes @ 170°C Interpon D36 = 10 minutes @ 200°C
12 months	Propagation of corrosion from either side of scribe	2 + 2 mm
	General surface corrosion	None
30 months	Propagation of corrosion from either side of scribe	12 + 13 mm
	General surface corrosion	None
36 months	Propagation of corrosion from either side of scribe	14 + 16 mm
	General surface corrosion	None
42 months	Propagation of corrosion from either side of scribe	16 + 16 mm
	General surface corrosion	None

Table 3: Natural Exposure - At the test site of the Swedish Corrosion Institute a few metres from the sea on Bohus-Malmö Island, south-west Sweden

	Pretreatment:	Solvent degreasing, grit blast (SA 2.5; R _a 6-7µm)
	Film Thickness:	PZ 660 = 50-70µm Interpon D36 = 80-100µm
	Curing Times:	PZ 660 = 12 minutes @ 170°C Interpon D36 = 10 minutes @ 200°C
12 months	Propagation of corrosion from either side of scribe	2 + 2 mm
	General surface corrosion	None
30 months	Propagation of corrosion from either side of scribe	12 + 13 mm
	General surface corrosion	None
36 months	Propagation of corrosion from either side of scribe	14 + 16 mm
	General surface corrosion	None
42 months	Propagation of corrosion from either side of scribe	16 + 16 mm
	General surface corrosion	None



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