Product Data Sheet

AkzoNobel Powder Coatings

Interpon Redox PZ
ALZ90F

Product Description

Interpon Redox PZ is a powder coating primer containing zinc which is designed to give enhanced corrosion protection of mild steel.

This duplex system combines cathodic protection and barrier effect. It consists of a two-layer system with a zinc rich primer Interpon Redox PZ overcoated with a Interpon powder topcoat or Cromadex PU liquid topcoat.

Dedicated to steel protection with a surface pre-treatment obtained by grit/shot blasting. **Interpon Redox PZ** is based on a specific epoxy zinc rich formulation that brings conductivity to enable the cathodic protection. Interpon Redox PZ includes a specific anticorrosive function which improves the protection in case of scratch.

Qualisteelcoat approval:
Base Material: ***Steel***
PE-0097 2 coat system - up to C4-H, mechanical pretreatment

Powder Properties

Chemical type	Thermosetting epoxy
Appearance	Smooth
Gloss level (60°)	45-65 units
Color	Grey (about RAL 7012)
Recommended Film Thickness (µm)	70 - 120 µm
Density (g/cm³)	2,1 g/cm³
Application	Electrostatic
Storage	Under dry, cool (≤ 30°C) conditions
Shelf life	At least 12 months from production date
Curing schedule	See section curing bellow

Test Conditions

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

Substrate	Steel
Pretreatment	Shot Blasting
System Thickness	70-120 microns
Curing Schedule (with topcoat)	10 minutes at 200°C (Object Temperature) Topcoat: Interpon D1036 / D2525 60-80 microns

Mechanical Tests

Bending test (Cylindrical Mandrel)	ASTM D522-93A	Pass 4 mm (Primer) Pass 10 mm (System)
Adhesion	ASTM D3359-97 (2mm crosshatch)	Class 5B (Primer) Class 5B (System)

	Erichsen Cupping	ASTM 643-84	Pass 5 mm (Primer) Pass 4 mm (System)
	Impact	ASTM D2794	Pass 0.5 kg.m (Primer) Pass 0.4 kg.m (System)

Corrosion Tests
Mild Steel

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.

Neutral Salt Spray	ASTM B117	Results are detailed in Table 1 of Appendix

Pretreatment

Surface preparation depends upon the metal, the type of surface, its conditions and the required performance. See our recommendation for pretreatment to be used with Interpon Redox PZ.

Substrate	Mechanical pretreatment	Chemical pretreatment
Mild steel	Grit Blasting Sa 2.5 in accordance with ISO NF EN 8501-1. Roughness: Rz 35-60 µm / Ra 6-12 µm	Banned
Cast steel		
Electro Zinc steel	Banned	
Hot dip galvanized steel	Banned	Banned
Zinc sprayed (gas flame/electrical deposition)	Banned	Banned

Application

Interpon Redox PZ is suitable for corona electrostatic spraying. Tribo application is not recommended.

Application settings	Fluidizing air pressure: 1.5kg/cm^2 initially then 1kg/cm^2 Transport air pressure: 0.5 to 0.8 kg/cm Recommended voltage: 65 to 70kV
Curing limits	Primer should be cured, or at least gelled, using the recommended curing schedules, before application of the topcoat. The object temperature must not be below 110°C or above 180°C. The primer should be cured in a convection oven, optionally with infra-red heaters, with air temperature not exceeding 180°C.
Recommended film thickness	70-120 µm A good protection is linked with the recommended film thickness.
Recycling	Trials, with suitable recycling equipment, must be carried out before commencing production. Attention should be paid to the ratio of new powder, a minimum of 70% must be used. Gun nozzles must be cleaned every 30 minutes.

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

Curing

Interpon Redox PZ shows a wide curing range must allowing application on substrates of different nature and thicknesses.

	Green curing		Full curing	
Object temperature	Min	Max	Min	Max
110°C	15’	40’		
130°C	12’	30’		
160°C			12’	23’
170°C			8’	17’
180°C			6’	13’
200°C			2’	8’
220°C			1.5’ / 2’	5.5’ / 6’

The Interpon Redox PZ 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 through the coating system to the substrate, there may be localized signs of corrosion where damage has occurred, but this will not affect the adhesion of the film to the adjacent surface. Interpon Redox PZ considerably limits the extent of spread of corrosion in the event of coating damage.

Topcoat Application

Primer should be over-coated 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 24 hours.

Refer to the Product Data Sheet for the powder topcoat for application parameters.

To ensure the integrity of the 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 color and gloss and cause degradation of the coating properties of the system. A detailed protocol for applying Interpon Redox PZ system is available on request.

Damage repair

Any damage of the Interpon Redox PZ coating 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
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. 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 advices 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.

Appendix 1: Performance tables Neutral Salt Spray & 3C Cycle Renault method ME D17 1686

Coating System			**Interpon Redox PZ / ALZ90F + Interpon D1036**		
Conditions	Substrate		Steel 2mm		
	Pretreatment		**Grit blasting** SA 2.5 – Ra 6-12µm		
	Primer thickness		60 - 80 µm		
	Topcoat thickness		80 - 110 µm		
	Adhesion on surface before test		Class 5B (as per ASTM D3359-97)		
Neutral Salt Spray ASTM B117	**Time**	**Quotation**	**Corrosion**	**Blistering**	**Adhesion**
	2 000 hours	Scribe	Rating No – 5 Corrosion: 3 - 5mm from Scribe	Size Grade: 6 Degree: Few to Medium	Loss 4 mm
		Surface	Rust Grade - 10	None	Class 0
	3 000 hours	Scribe	Rating No – 5 Corrosion: 3 - 5mm from Scribe	Size Grade: 8 & 4 Degree: some blisters	Loss 4 mm
		Surface	Rust Grade - 10	None	Class 0

Coating System			**Interpon Redox PZ / ALZ90F + Interpon D1036**		
Conditions	Substrate		Steel 2mm		
	Pretreatment		**Grit blasting** SA 2.5 – Ra 6-12µm		
	Primer thickness		60 - 80 µm		
	Topcoat thickness		80 - 110 µm		
	Adhesion on surface before test		Class 0		
3C Cycle Renault method ME D17 1686	**Time**	**Quotation**	**Corrosion**	**Blistering**	**Adhesion**
	6 cycles	Scribe	Rating No – 8 Corrosion: 0.5 – 1mm from Scribe	Size: 8 & 6 Degree: Medium	Loss 3 mm
		Surface	Rust Grade - 10	None	Class 0
	10 cycles	Scribe	Rating No – 8 Corrosion: 0.5 – 1mm from Scribe	Size: 8 – 4 Degree: Dense	Loss 3 mm
		Surface	Rust Grade - 10	None	Class 0
	15 cycles	Scribe	Rating No – 7 to 6 Corrosion: 1 – 3mm from Scribe	Size: 8 – 2 Degree: Highly Dense	Loss 4 mm
		Surface	Rust Grade - 10	None	Class 0