

Product Data Sheet

AkzoNobel Powder Coatings Interpon PZ Triplex Anticorrosion System

Product Description

The Interpon PZ Triplex Anticorrosion System is designed to be used in highly corrosive environments described in ISO 12944-2 as C4 interior environments and as C4 and C5 exterior environments. This 3 layer system consists of an Interpon PZ790 Zinc-rich primer, an intermediate layer of Interpon BPP330 barrier protective primer, and a polyester topcoat (exterior use) or hybrid topcoat (interior use). The primary use is for steel protection with a surface pre-treatment obtained by grit blasting or by crystalline Zn-Ni phosphating with passivation.

Coating Aspect

This is a high build coating system, finish is dependent on substrate quality and topcoat selection

Test Conditions

The results shown below are based on testing 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		0.5mm Steel
Pretreatment		Cold trichloroethylene degreasing Grit blasting with corundum SA 2.5 - Ra 7-8 µm
Interpon PZ790 - thickness	ISO 2360	60 – 90 microns
Interpon PZ790 - curing		10 minutes at 130°C (object temperature)
Interpon BPP330 - thickness	ISO 2360	60 – 100 microns
Interpon BPP330 - curing		25 minutes at 130°C (object temperature)
Interpon D1036 - thickness (Ral 6005 gloss)	ISO 2360	70 – 120 microns
Interpon D1036 - curing		10 minutes at 200°C (object temperature)

Mechanical Tests

Flexibility	ISO 1519 (Cylindrical Mandrel)	Pass 10 mm (System)
Adhesion	ISO 2409 (2mm Crosshatch)	Gt0 (System)
Erichsen Cupping	ISO 1520	Pass 5 mm (System)
Impact	ISO 6272	Pass 0.5 kg.m (System)

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Corrosion tests on mild steel

The results shown below are based on testing 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.

Coating System		Interpon PZ790 Interpon BPP330 Interpon D1036			
Conditions	Substrate	Steel 2mm			
	Pretreatment	Solvent degrease Grit blasting with corundum Clean: SA2½ Profile: 50-75 µm (Ra 6-12 µm)			
	Coating Thickness	Interpon PZ790	80-90µm		
		Interpon BPP330	60-70µm		
		Interpon D1036	70-90µm		
Total System		210-250µm			
Adhesion before test		GTO			
Neutral Salt Spray ISO 9227	Time	Location	Corrosion*	Blistering*	Adhesion*
	1000 hours	Scribe	X	None	
		Surface	Ri 0	None	Class 0
	1500 hours	Scribe	X	None	
		Surface	Ri 0	None	Class 0
	2000 hours	Scribe	XX	3(S2)	
		Surface	Ri 0	None	Class 0
	2500 hours	Scribe	XXX	4(S2)	
		Surface	Ri 0	None	Class 0
	3000 hours	Scribe	XXX	5(S2)	0.2mm
Surface		Ri 0	None	Class 0	

Coating System		Interpon PZ790 Interpon BPP330 Interpon D1036			
Conditions	Substrate	Steel 2mm			
	Pretreatment	Solvent degrease Grit blasting with corundum Clean: SA2½ Profile: 50-75 µm (Ra 6-12 µm)			
	Coating Thickness	Interpon PZ790	70-90µm		
		Interpon BPP330	90-110µm		
		Interpon D1036	110-130µm		
Total System		270-330µm			
Adhesion before test		GTO			
Resistance to humid atmospheres containing sulphur dioxide ISO 3231	Time	Location	Corrosion*	Blistering*	Cracking*
	720 hours 30 cycles	Surface	Ri 0	O(S0)	O(S0)

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Coating System		Interpon PZ790 Interpon BPP330 Interpon D1036			
Conditions	Substrate	Steel 3mm			
	Pretreatment	Solvent degrease Grit blasting with corundum Clean: SA2½ Profile: 50-75 µm (Ra 6-12 µm)			
	Coating Thickness	Interpon PZ790	65-85µm		
		Interpon BPP330	75-95µm		
		Interpon D1036	80-100µm		
Total System		220-280µm			
Adhesion before test		GTO			
Resistance to humidity ISO 6270-2	Time	Location	Corrosion*	Blistering*	Cracking*
	720 hours	Surface	Ri 0	O(S0)	O(S0)

*Assessment of accelerated aging tests

	Adhesion	Rust	Blistering	Cracking
At Scribe	Loss of adhesion from the edge of scribe in mm (by peeling using a scalpel)	0 None X Slight XX Moderate XXX Severe	Degree (quantity) of blistering in accordance with ISO 4628 0: None - no detectable defects 1: Very Few - some just significant defects 2: Few - small but significant amounts of defects 3: Moderate - medium amount of defects 4: Considerable – serious amounts of defects 5: Dense – Dense patterns of defects Blister Size 0: None – 10x magnification 1: Just visible – 10x magnification 2: Just visible – normal vision 3. Clearly visible - <0.5mm 4: 0.5 – 5mm 5: >5mm Rating: Degree 2, Size 2 = 2(S2)	Degree (quantity) of Cracking in accordance with ISO 4628 0: None - no detectable defects 1: Very Few - some just significant defects 2: Few - small but significant amounts of defects 3: Moderate - medium amount of defects 4: Considerable – serious amounts of defects 5: Dense – Dense patterns of defects Crack Size 0: None – 10x magnification 1: Just visible – 10x magnification 2: Just visible – normal vision 3. Clearly visible - <0.5mm 4: 0.5 – 5mm 5: >5mm Rating: Degree 2, Size 2 = 2(S2)
On Surface	In accordance with ISO 2409: Class 0: No Peeling to Class 5: Total removal	In Accordance with ISO 4628 Ri0: 0% Ri1: 0.05% Ri2: 0.5% Ri3: 1% Ri4: 8% Ri5: 40-50%		

Industrial Application

A recommendation for Industrial application is outlined below. Further detailed protocols for applying Interpon PZ Triplex Anticorrosion System (Interpon 790 + Interpon BPP330 + Interpon topcoat) is available on request as are specific technical datasheets for each coating product.

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 PZ790 should not be handled if possible. If handling is unavoidable, clean lint-free gloves must be worn.

Industrial Application

-Initial condition of parts to be coated

Part Design:

- Welds on the parts must be continuous and leak tight
- Air gaps must be closed by welding

The preparation grade of the parts must be in accordance with ISO 8501-3 “Preparation grades of welds, edges and other areas with surface imperfections” at grade P3. In particular at P3 grade:

- Weld ripple/profile: Surface shall be fully dressed i.e. smooth
- Edges made by punching, shearing, sawing and drilling: Edges shall be rounded with a radius of not less the 2mm.

For preparation by grit blasting:

For all types of parts, the degree of rust before preparation must not exceed state “B” according to ISO 8501-1 or Swedish standard SIS 05.09.00.

For preparation by phosphating:

The mild steel parts must be free from all traces of oxidation

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Industrial Application

-Substrate Preparation

For maximum protection it is essential that the Interpon PZ790 primer layer is applied to a clean, dry, oxide free ferrous metal surface, this is then followed by the Interpon BPP330 and Interpon topcoat. Surface preparation depends upon the type of surface, its condition and the required performance. For good steel protection against corrosion the following is recommended:

Grit blasting

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

and/or

Degreasing & Phosphating

- Degreasing
- Crystalline Zi-Ni Phosphating followed by passivation,
- Rinsing with demineralized water and drying.
- Follow the procedural advice of the pretreatment supplier.

Industrial Application

-Interpon PZ790

Interpon PZ790 Layer Thickness		60 – 120 μ	
Minimum Temperature of parts		110°C	
Maximum Temperature of parts		220°C	
Maximum oven Temperature		220°C	
Curing Conditions	Part Temperature	Min Time	Max Time
	110°C	15 min (green cure)	40 min (green cure)
	130°C	12 min (green cure)	30 min (green cure)
	160°C	12 min	23 min
	170°C	8 min	17 min
	200°C	2 min	8 min
	220°C	1 min 30 sec	5 min 30 sec

If the thickness of the Interpon PZ790 primer is too thin then it may be recoated with a second Interpon PZ790 layer in order to achieve the target film thickness. After application a second intermediate backing process must be completed.

Industrial Application

-Interpon BPP330

Maximum period after applying Interpon PZ790 before application of Interpon BPP330*		12 hours	
Interpon BPP330 Layer Thickness		60 – 120 μ	
Interpon PZ790+BPP330		120 – 240 μ	
Minimum Temperature of parts		110°C	
Maximum Temperature of parts		180°C	
Maximum oven Temperature		No peak over 190°C	
Curing Conditions	Part Temperature	Min Time	Max Time
	130°C	15 min (green cure)	60 min (green cure)
	160°C	10 min	40 min
	170°C	6 min	35 min
	200°C	2 min	30 min

*Between 12 and 24 hours the parts can be stored for 10 minutes at 120-150°C (object temperature).

If the thickness of the Interpon BPP330 intermediate coat is too thin, then, in order to avoid over-bake, the total system thickness can be achieved by increasing the film build of the topcoat. eg if the Interpon BPP330 layer is 40 μ (20 μ too thin) the topcoat thickness can be increased by 20 μ .

Industrial Application
-Interpon topcoat

Maximum period after applying Interpon BPP330 before application of Interpon topcoat	24 hours
Recommended Layer Thickness: (including Interpon PZ790 & Interpon BPP330 layer)	70 – 120 μ 190 – 360 μ

Curing:

To achieve good inter-coat adhesion between the 3 coatings in the system the final cure must take place according to the curing conditions of the particular Interpon topcoat being used.

Damage Repair

Any damage to the Interpon PZ Triplex Anticorrosion 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 epoxy primer, Intergard 475

3rd Coat : two-pack polyurethane topcoat, Interthane 990

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

Safety Precautions

Please consult the Material Safety Datasheet (MSDS)

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 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.

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