

IBASHIELD – ZINC FREE – EE20

Technical Data Sheet

Description

IBASHIELD - Zinc Free – EE20 are primer powder coatings made with oven-cured epoxy resins that have barrier effect properties. Barrier powder coatings prevent external factors from penetrating the metal through an appropriate film coating. In other words, it acts as a shield, isolating the metal from external factors. The metal is protected as long as the barrier powder coating remains intact; however, if this barrier is breached, the onset of corrosion becomes inevitable.

General Features

- Excellent corrosion resistance
- High service life on coated material
- Zinc Free
- Excellent chemical resistance
- Environmentally friendly

Product Properties

UV Resistance	It should not be used outdoors without topcoat due to its epoxy content.
Colour	Gray
Surface	Gloss GL
Intensity	1.5-1.8 gr/cm ³
Shelf life	12 months (< 30°C and < 50% relative humidity)

Application Information

APPLICATION	Corona (If the 6th character in the paint code is "T", it can be applied with a tribo gun.)
Film Thickness	40-60 µm (recommended)
Theoretical Consumption	11-13 m ² /kg. Calculated based on recommended average film thickness. Factors like application method, density, material surface and textured surface affect this value.

Coating Film Properties

The following are test results of 60µ coating film on 0.5 mm thick DKP sheet metal with the specified conditions:

Direct Impact:	>5 kgcm (ISO 6272-2)
Reverse Impact:	>5 kgcm (ISO 6272-2)
Buchholz Hardness	>90 (ISO 2815)
Conical Bending	<5mm (ISO 6860)
Adhesion	GT:0 (ISO 2409)

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Application Guide

Surface Preparation

For optimal performance, all surfaces must be pretreated by removing oil, moisture and dust. Application recommendations according to corrosion classes are shared in the "Atmospheric Corrosion Categories and Environments examples (BS EN ISO 12944-2)" and "Zinc-Free IbaShield Powder Coating Selection Guide" sections.

Application Procedure

- The topcoat should be applied within 12 hours to prevent primer powder coatings from absorbing moisture.
- Recycled powder should be added to fresh powder in recommended ratios to avoid reducing application performance.
- Sieving recycled powder before emptying into hopper will prevent contamination with foreign materials.
- Coating must be applied immediately on sand blasted plates to prevent oxidation.
- If the final product is Iba Kimya's "X" or "B" coded metallic product, it is recommended to apply Iba Kimya's Varnish coatings.

Table 1. Curing conditions depending on the application method

System	EE20-IBASHIELD + Top Coat(Apply within 12 hours)		EE20-IBASHIELD + Top Coat(Apply after 12 hours)		Only Primer (Apply as a top coat)	
	Minimum Time	Maximum Time	Minimum Time	Minimum Time	Maximum Time	Minimum Time
Metal Temperature °C						
150	15	20	15	20	15	20
160	11	16	11	16	11	16
170	8	13	8	13	8	13
180	5*	10	5	10*	5	10*
190	2	7	2	7	2	7

*Recommended curing condition

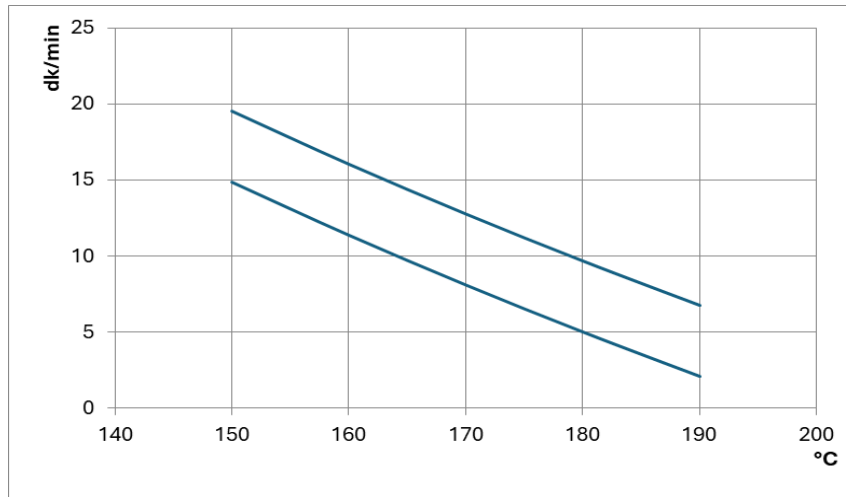


Figure 1. Curing Window

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Examples of Atmospheric Corrosion Categories and Environments (ISO 12944-2)

Environments that cause corrosion are divided into various categories.

Table 2.Corrosion Categories

Corrosion Class	Protection period		Examples of environments, outdoor	Salt Spray Test ISO 9227	Humidity Test ISO 6270
C2	Low	< 7 years	Environments with low pollution levels	-	48 hours
	Medium	7 - 15 years		-	48 hours
	High	15 - 25 years		-	120 hours
	Very High	> 25 years		480 hours	240 hours
C3	Low	< 7 years	Urban and industrial environments with moderate SO ₂ pollution Coastal areas with low salinity	120 hours	48 hours
	Medium	7 - 15 years		240 hours	120 hours
	High	15 - 25 years		480 hours	240 hours
	Very High	> 25 years		720 hours	480 hours
C4	Low	< 7 years	Medium salinity industrial zones and coastal areas	240 hours	120 hours
	Medium	7 - 15 years		480 hours	240 hours
	High	15 - 25 years		720 hours	480 hours
	Very High	> 25 years		1440 hours	720 hours
C5	Low	< 7 years	Industrial environments with high humidity and aggressive atmospheres Coastal areas with high salinity	480 hours	240 hours
	Medium	7 - 15 years		720 hours	480 hours
	High	15 - 25 years		1440 hours	720 hours
	Very High	> 25 years		Cyclic aging test (2688 h)	

Table 3.IBASHIELD – Zinc Free – EE20 Selection Guide

Product		IBAShield Zinc Free + IBADure (Qualicoat Class1)	
Conditions	Application Surface	Steel 1mm	
	Pre-treatment	Iron Phosphate / Zinc Phosphate / NT Zirconium Coating	
	Primer Thickness	40 - 60 µm	
	Topcoat Thickness	60 - 80 µm	
Salt Spray Test	Testing Period(hr)	Degree of Rusting	Degree of Blistering
ISO 9227	504	Ri 0	No blistering

Product		IBAShield Zinc Free + IBADure Series (Qualicoat Class1)	
Conditions	Application Surface	Steel 1mm	
	Pre-treatment	Sandblasting	
	Primer Thickness	40 - 60 µm	
	Topcoat Thickness	60 - 80 µm	
Salt Spray Test	Testing Period(hr)	Degree of Rusting	Degree of Blistering
ISO 9227	504	Ri 0	No blistering

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Health and Safety

The Safety Data Sheet (SDS) prepared for **IBASHIELD - Zinc Free – EE20** primer powder coatings contain information about health effects in case of exposure and personal protective equipment. Contact Sales and Customer Service offices for more detailed information.

Recommendations and Limits

Due to differences in application and curing conditions, variations may occur between primer powder coatings, samples or production plates prepared by IBA Kimya and customer materials. Therefore, meeting product requirements is the responsibility of the applicator and/or their customer.

Recommended cured coating film thickness and curing conditions must be met for optimal performance. Not recommended for outdoor use if suitable topcoat will not be applied. Excessive curing may cause interlayer adhesion problems. See "application procedure" section for proper interlayer adhesion.

Transport and Stock

Packaging:	25 kg polyethylene bags and corrugated cardboard boxes
Transport:	Does not contain hazardous substances. No special transportation required.
Storage conditions:	Storage temperature <30°C and relative humidity <50%. Must be kept in closed boxes.

WARNING: All information in this product technical data sheet is based on our current knowledge and experience and may change with new technology and experiences. Due to application conditions, surface used, physical conditions and other variables that may show variation depending on product use, users need to conduct their own tests to determine product suitability for intended purpose. Since product application, use and processing occur outside our control and supervision, our company has no responsibility in these matters. Additionally, our liability for breach of warranty is limited exclusively to product replacement or refund and does not cover any incidental or consequential damages.