Technical Data Sheet

The STEEL-IT® Polyurethane System

STEEL-IT® 2213 Epoxy Ester Precoat
STEEL-IT® 1006 Polyurethane Topcoat – Charcoal

The STEEL-IT® Polyurethane System – Charcoal consists of STEEL-IT® 2213 Epoxy Ester Precoat and STEEL-IT® 1006 Polyurethane Topcoat – Charcoal. STEEL-IT® 2213 is a 1K, low-VOC, fast drying precoat with outstanding resistance to corrosion and excellent adhesion. The Epoxy Ester Precoat and the Polyurethane Topcoat, when paired together in the STEEL-IT® Polyurethane System, offer long lasting resistance to corrosion, abrasion, UV-rays, moisture, salt-spray, and harsh chemicals. Utilizing customengineered 316L stainless steel leafing pigment, these single-component coatings create a hard, non-toxic, metallic finish. While the data presented in this Technical Data Sheet is specifically for STEEL-IT® 1006 Polyurethane Topcoat – Charcoal, the STEEL-IT® 2213 Epoxy Ester Precoat is compatible with all STEEL-IT® Polyurethane Topcoats. For information on other STEEL-IT® Polyurethane Topcoats, please refer to the appropriate Technical Data Sheet.

Applications	• Machinery; industrial maintenance; architecture and construction; automotive; food processing and packaging; agriculture; aerospace; marine; other • Interior and exterior applications: Provides UV/weathering-resistance
Surfaces	• Steel, galvanized steel, aluminum, nickel-plated steel, copper, brass
System	• STEEL-IT® 2213 Epoxy Ester Precoat: 1 coat 75 µm Dry Film Thickness (DFT) • STEEL-IT® 1006 Polyurethane Topcoat – Charcoal: 1 coat 75 µm Dry Film Thickness (DFT) • For particularly harsh conditions, a total dry film thickness of 225 µm is recommended: 1 coat of STEEL-IT® 2213 Epoxy Ester Precoat and 2 coats of STEEL-IT® 1006 Polyurethane Topcoat • For touch-ups, apply STEEL-IT® 1006D Polyurethane Aerosol - Charcoal • For applications involving welding, the topcoat is applied directly to the metal surface. Please refer to the Technical Data Sheet and Application Instructions for STEEL-IT® 1006 and STEEL-IT® 1006D. STEEL-IT® 2213 Epoxy Ester Precoat is not weldable.

Technical Data

	STEEL-IT® 2213	STEEL-IT® 1006 Topcoat
Color (Closest Pantone)	7624 C	Cool Gray 11
Color (Closest RAL)	3009	7022
Solids by weight	56% ± 2%	48% ± 2%
Solids by volume	39% ± 2%	38% ± 2%
Density (calculated)	1,56 kg/L	1,22 kg/L
VOC (calculated)	49,7 g/L	446 g/L
Coverage* at 75 µm Dry Film Thickness (DFT)	4,13 m^2/L	3,84 m^2/L

*Values are considered "practical" coverage, calculated for smooth, non-porous surfaces and assume 20% loss due to overspray and waste

Accelerated Aging Tests†

Condensing Humidity ASTM B117	Hours	ASTM D4585
STEEL-IT® 2213 Epoxy Ester Precoat (1 coat)	720	Pass
STEEL-IT® 2213 (1 coat) + STEEL-IT® 1006 (2 coats)	480	Pass

Salt Fog Test: ASTM B117	Hours	Rust at Scribe: ASTM D1654
STEEL-IT® 2213 Epoxy Ester Precoat (1 coat)	2064	9 = <0.5 mm creepage
STEEL-IT® 2213 (1 coat) + STEEL-IT® 1006 (1 coat)	3192	8 = 0.5 - 1.0 mm creepage
STEEL-IT® 2213 (1 coat) + STEEL-IT® 1006 (2 coats)	4200	7 = 1.0 - 2.0 mm creepage

†Coatings prepared on cold rolled steel or grit blasted steel and cured 14 days at room temperature

STEEL-IT 2213 + STEEL-IT 1006
Scraped panel, 3192 h

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Technical Data Sheet

STEEL-IT® Polyurethane System – Charcoal

STEEL-IT® 2213 Epoxy Ester Precoat and STEEL-IT® 1006 Polyurethane Topcoat – Charcoal

Surface Preparation	• Surfaces should be clean and free of all rust, paint, greases, waxes, salts, dirt, scale, etc • For best results, grit-blast to SSPC SP-6 (Commercial Blast) • Anchor pattern should be cut and angular at 38 50 µm deep • Power-sanding with a dual-action sander or random orbital sander using #36 grit sandpaper will achieve similar results
Conditions	• Apply only when ambient and substrate surface temperatures are 10-38 °C • Relative humidity less than 85% • Temperature of substrate surface and of coating at least 5 °F (2.75 °C) above the dew point
Application	• Agitate for 5 min with a mechanical paint shaker or a mechanically driven paddle; hand agitation is not sufficient • Preferred application method is using an Air, Airless, Air-Assisted Airless, or HVLP spay gun; brush and roller may also be used

Recommended Wet Film Build	• To achieve 75 µm Dry Film Thickness (DFT), apply:
	  • STEEL-IT® 2213 Epoxy Ester Precoat: 205 µm Wet Film Thickness (WFT)
	  • STEEL-IT® 1006 Polyurethane Topcoat – Charcoal: 225µm Wet Film Thickness (WFT)

Dry Time and Recoat Window	• STEEL-IT® 2213 Epoxy Ester Precoat:
	  • Dry to touch: 1 hour
	  • Tack free to handle: 4 hours
	  • Dry to recoat window: 4-24 hours
	• STEEL-IT® 1006 Polyurethane Topcoat – Charcoal:
	  • Dry to touch: 2 hours
	  • Tack free to handle: 4 hours
	  • Dry to recoat window: 4-24 hours
	• If product is not recoated within 24 hours, a light scuff-sanding using #400-600 grit paper is required before applying an additional coat

Curing	• Cure at ambient temperatures of 10–49 °C • Both temperature and climate conditions (e.g. high humidity or high aridity) will impact cure time • Cure time required before part can be packaged or put into service depends on how the part will be used • Full cure in 5-7 days after final coat. Corrosion resistance continues to improve with prolonged atmospheric aging over a 4-6 week period
Safety	• Wear a NIOSH-approved respirator with an organic vapor cartridge • Use nitrile gloves • Apply STEEL-IT® in a well-ventilated area

For detailed information on surface preparation, application instructions, and recommended spray gun equipment settings please refer to the Application Instructions available online at STEEL-IT-EUROPE.com.

The latest versions of the Safety Data Sheets (SDS) are also online at STEEL-IT-EUROPE.com.

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