Technical Data Sheet

STEEL-IT 1012 Polyurethane Topcoat – Black

STEEL-IT 1012B Polyurethane Aerosol – Black

STEEL-IT® Brand 1K polyurethane coatings are durable, offering outstanding resistance to corrosion, abrasion, UV-rays, moisture, salt-spray, and harsh chemicals. Utilizing custom-engineered 316L stainless steel leafing pigment, these single-component coatings create a hard, non-toxic, metallic finish. The **weldable** STEEL-IT Polyurethane coating can be applied direct-to-metal and is available as either a liquid or an aerosol.

Applications	• Motorsports/powersports; automotive; architecture and construction; packaging; machinery; industrial maintenance; agriculture; aerospace; marine; DIY • Welding; fabrication • Interior and exterior applications: Provides UV/weathering-resistance
Substrates	• Steel, galvanized steel, aluminum, nickel-plated steel, copper, brass, plastic, fiberglass
System	• 2 coats STEEL-IT 1012 Polyurethane Topcoat – Black (6 mils total DFT, 3 mils per coat) or 4 coats STEEL-IT 1012B Polyurethane Aerosol – Black (6 mils total DFT, 1.5 mils per coat) • For particularly harsh conditions 9 mils total DFT are recommended, 3 coats STEEL-IT 1012 or 6 coats STEEL-IT 1012B • When welding is not desired, the topcoat or aerosol can be used with STEEL-IT 2213 Epoxy Ester Precoat, which significantly improves corrosion resistance.

Physical Properties

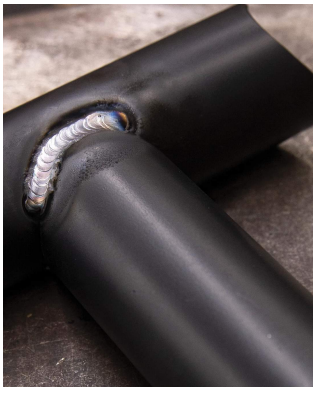
Property	STEEL-IT 1012 Topcoat	STEEL-IT 1012B Aerosol
Color (Closest Pantone)	Black 6 C	Black 6 C
Color (Closest RAL)	9004	9004
Solids % by weight	53% ± 2%	32% ± 2%
Solids % by volume	42% ± 2%	N/A
Weight (calculated)	10.8 ± 0.3 lbs/gal (4.9 Kg/gal)	14 oz/can (397 g/can)
VOC (calculated)	3.4 lbs/gal (406 g/L)	CA MIR < 1.25
Coverage @ 3 mils (0.003"; 75 microns) DFT*	180 sq ft/gal (16.7 sq m/gal)	7.5 sq ft/can (0.7 sq m/can)

*Values calculated for a smooth, non-porous surfaces assuming 20% loss due to overspray.

Coating Properties†

Property	Test Method	STEEL-IT 1012 (2 coats)
Gloss: 60° Sheen: 85°	ASTM D523	17 50
Maximum In-Service Temperature	Hot Box Stability Testing	200 °F (93 °C)
Corrosion Resistance (Rust at Scribe, 10-0)	ASTM B117/ ASTM D1654	~ 2600 h (7 = 1.0–2.0 mm creepage)
Condensing Humidity	ASTM D4585	240 h - pass
MEK Rub Resistance	ASTM D4752	>300

†Properties measured on 2-coat 5.0-6.0 mils films cured for 14 days at room temperature. For information on chemical resistivity, please contact us to discuss your specific application needs.



Weld over STEEL-IT 1012B

Technical Data Sheet

STEEL-IT 1012 Polyurethane Topcoat – Black and STEEL-IT 1012B Polyurethane Aerosol – Black

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 1.5 - 2.0 mils 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 50-100 °F (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	• STEEL-IT 1012 Polyurethane Topcoat – Black
	  • Agitate for 5 min with a mechanical paint shaker or a mechanically driven paddle
	  • Preferred method is using an Air, Airless, Air-Assisted Airless, or HVLP spray gun
	• STEEL-IT 1012B Polyurethane Aerosol – Black
	  • Shake the can vigorously for 2 minutes, ideally with a power shaker
	  • Spray from a distance of 12-16" (30-40 cm), making multiple passes to achieve film build

Recommended Wet Film Build	• To achieve 3 mils (0.003"; 75 microns) Dry Film Thickness (DFT):
	  • STEEL-IT 1012 Polyurethane Topcoat – Black: One (1) coat 9 mils (0.009"; 229 microns) Wet Film Thickness (WFT)
	  • STEEL-IT 1012B Polyurethane Aerosol – Black: Two (2) coats 8 mils (0.008"; 205 microns) WFT applied 30-60 minutes apart

Dry Time and Recoat Windows	• STEEL-IT 1012 Polyurethane Topcoat – Black
	  • Dry to touch: 2 hours
	  • Tack-free to handle: 4 hours
	  • Dry to recoat window: 4-24 hours
	• STEEL-IT 1012B Polyurethane Aerosol – Black
	  • Dry to touch: 1-2 hours
	  • Tack-free to handle: 2 hours
	  • Apply 3rd and 4th coats after air dry 4-6 hours
	  • Apply 5th and 6th coats after air dry 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 50–120 °F (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. Please refer to FAQs on STEEL-IT.com for details. • Full cure in 5-7 days after final coat. Corrosion resistance continues to improve with prolonged atmospheric aging over a 4-6 week period.
Welding	• TIG or MIG welding • Allow a full 7-day cure prior to welding • Seamless touch-up with STEEL-IT 1012B Polyurethane Aerosol – Black
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.com.

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

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The information presented in this Technical Data Sheet is accurate at the date of publication, however the data may be revised as new results become available. The reported values fall within the normal range of measured product properties and should not be used to establish specification limits. All users are responsible for conducting testing to determine the suitability of STEEL-IT Brand Coatings for the specific requirements of their applications.