

STEEL-IT Polyurethane - Aerosol

1002B, 1006B, 1012B, 1050B, 1051B

1K Polyurethane-Coating with stainless steel particles

Description:

STEEL-IT Polyurethane-Aerosol Coatings are liquid one-component products consisting of synthetic resin and stainless steel particles. After application, the solvents contained volatilise, leaving a very hard, resistant layer of 316L stainless steel and synthetic resin on the coated surface.

The Polyurethane Coatings have very good adhesion to steel, galvanised steel, aluminium, nickel-plated steel, copper, brass and other non-porous surfaces. The coating adheres to the surface by interlocking with the rough surface profile. The stainless steel coating offers unique, high-quality corrosion protection and provides the surface with excellent protection against impact, abrasion, moisture, solvents, alkalis, UV radiation and much more. The stainless steel coating is non-toxic. 1002B, 1050B and 1051B comply with USDA guidelines for incidental food contact and can be used in the food industry. The weldability of the stainless steel layer is a decisive and time-saving advantage. Early signs of damage are easy to recognise and can be repaired by directly welding the coating without mechanical pre-treatment.

Technical Data:

	1002B	1006B	1012B	1050B	1051B
colour	Steel Gray (matte)	Charcoal (matte)	Black (satin)	Dove Gray (satin)	Light Gray (satin)
closest RAL	7039	7022	9004	7035	-
solids by weight:	26%	26%	32%	33%	39%
coverage* at 75 µm dry film thickness	0,7 m ² /can	0,7 m ² /can	0,7 m ² /can	0,7 m ² /can	0,7 m ² /can
VOC (MIR CA)	< 1,25	< 1,25	< 1,25	< 1,25	< 1,25

* Assumes 20% loss due to overspray and waste

Application:

Film Thickness:

For surfaces subject to normal wear, we recommend applying 4 coats with a dry film thickness of 38 µm each. For surfaces exposed to harsh conditions, the application of 6 coats is recommended. Always apply two coats at intervals of 30 to 60 minutes.

When welding is not desired, the first coat can be replaced with 2213 Epoxy Ester Precoat (75 µm dry film thickness, 205 µm wet film thickness), which significantly improves corrosion resistance.

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Dry Film Thickness 1 coat	38 µm	38 µm	38 µm	38 µm	38 µm
Dry Film Thickness 4 coats	150 µm	150 µm	150 µm	150 µm	150 µm
Dry Film Thickness 6 coats	225 µm	225 µm	225 µm	225 µm	225 µm
Wet Film Thickness per coat	205 µm	205 µm	205 µm	205 µm	205 µm

Surface Preparation:

Metal surfaces should be clean and free of rust, old paint, grease, waxes, salts, dirt, scale, etc.

It is best if the surface to be coated can be blasted (e.g. sandblasted) to a 38-50 µm sharp angular cut profile (in accordance with SSPC SP-6, commercial blasting). STEEL-IT coatings require this rough, "scored" surface profile in order to have a tooth into which they can anchor and properly adhere.

If grit-blasting is not an option, similar results can be achieved on steel by sanding (e.g. with a double sander) with 36 grit sandpaper. After appropriate preparation, the surface should feel similar to the striking area on a matchbox.

After blasting, blow any remaining grit material off using an air hose and/or clean the surface with acetone, alcohol or xylene. Avoid using products that leave oily residues (e.g. cleaning petrol).

Notes:

Apply only when:

- ambient and substrate surface temperatures are between 10°C and 38°C
- relative humidity is less than 85%.
- Temperature of substrate surface and of coating are at least 2.75 °C above the dew point.
- The climatic conditions (e.g. high humidity or high dryness) have an effect on the drying/curing time of the coating. Longer curing times may be required in higher humidity or colder climatic conditions. Spray speed and technique may need to be adjusted.

Application method:

Shake the aerosol can vigorously for 2 minutes, preferably with a power shaker. Shake the aerosol can regularly during the application. Spray from a distance of 30-40 cm in multiple passes to achieve a good wet film build-up of the coating. Overlap the spray pattern by 50%. In drier and hotter climates, the spraying speed should be higher.

Apply 205 µm wet film thickness for each coat to achieve 38 µm dry film thickness per coat. For proper performance, the total dry film thickness of the applied STEEL-IT coating should be 150 µm. For parts exposed to tougher conditions, we recommend a total dry film thickness of 225 µm.

Wet/Dry Film build:

coats	Air dry time after application
1. coat	30 – 60 min
2. coat	4 – 6 h
3. coat	30 – 60 min
4. coat	5 – 7 days, when 4 coats are applied
	4 – 6 h, when 6 coats are applied
5. coat	1 h
6. coat	5 – 7 days

Drying Time:

Dry to touch: 1-2 h
tack-free to handle: 2 h
dry to recoat window: after 4-6 hours, the 3rd and 4th coat should be applied
after further 4-24 hours, the 5th and 6th coat should be applied

If product is not recoated within 24 h, a light scuff-sanding using #400-600 grit paper is required before applying an additional coat.

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:

- Allow a full 7-day cure prior to welding
- TIG or MIG welding
- Seamless touch-up with STEEL-IT Polyurethane-Aerosol

Cleanup:

Only use Mineral Spirits for cleaning.