STEEL-IT® 1002B Steel Gray Polyurethane Aerosol

Surface Preparation and Application Instructions

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PROPER SURFACE PREPARATION AND AMBIENT CONDITIONS

It's often said in the coatings industry that roughly 85% of all paint failures are due to improper or insufficient surface preparation and application. That is, the cause of the failure most often has nothing to do with the coating itself.

SURFACE PREPARATION

Proper surface preparation is key to the success of any coating job, whether the coating is STEEL-IT or another brand. First, metal surfaces should be clean and free of all greases, waxes, salts, rust, dirt, scale, old paint, etc. Next, it's best if the surface being coated can be grit-blasted. STEEL-IT coatings need a rough, "scarified" surface in order to have something to bite into to adhere properly. The surface once properly prepared should feel much like the surface of the striking area on a matchbox.

When using STEEL-IT 1002B Polyurethane Aerosol, ideally grit blast the surface to be coated to a 1.5-2.0 mils (0015"-.0020"; 38-50 microns) sharp angular cut profile per SSPC SP-6 (commercial blast).

If blasting is not an option, power sanding using #36 grit paper will achieve similar results.

Another surface preparation option for the Polyurethane System and Epoxy System is the Monti Bristle Blaster, a power tool that also achieves the proper surface conditions for the successful application of the STEEL-IT brand coatings mentioned. Stainless Steel Coatings, Inc. has no affiliation with Monti; it is merely an available option in the marketplace. For more information, visit: http://www.monti.de/en/products/bristle-blaster

REQUIRED AMBIENT CONDITIONS

- Apply only when ambient and substrate surface temperatures are between 50° F (10° C) and 100° F (38° C)
- Relative humidity is less than 85%
- Substrate surface temperature and the temperature of the coating are at least 5° F (2.75° C) above the dew point.

PROPER COATING PREPARATION

SUFFICIENT AGITATION

Before applying STEEL-IT 1002B Polyurethane Aerosol it is critical that the contents be sufficiently agitated. This agitation is what "thins" the coating and prepares it for spraying. Therefore, shake the can vigorously for 2 minutes, ideally with a power shaker, though manually shaking the can will be sufficient.

SAFETY PRECAUTIONS AND APPLICATION

When applying STEEL-IT 1002B Polyurethane Aerosol it is critical to use:

- A NIOSH approved respirator using an organic vapor cartridge
- Nitrile gloves

FILM THICKNESS

Finally, it's important to say a word about the amount of STEEL-IT that should be applied. Typically, two coats of STEEL-IT Polyurethane are recommended in most applications, with each coat measuring 3 mils (0.003"; 75 microns) dry film thickness (DFT). A third coat at 3 mils (0.003"; 75 microns) DFT can be applied in situations where conditions are particularly harsh due, for example, to chemical- or abrasion-exposure.

In order to achieve 3 mils (0.003"; 75 microns) DFT of STEEL-IT 1002B Polyurethane Aerosol, apply 16 mils (0.016", 400 microns) wet. Spraying from a distance of 12"-16" from the part to be coated, four to five passes at a moderate speed will deposit roughly 16 mils wet film thickness (WFT). The actual WFT can be verified using the gauge described below.

Apply the second coat at 16 mils wet 6-24 hours later. Ideally, let the coated piece cure for 5 days before putting it into use. Even on day 3, it may be possible to gouge the coating with one's fingernail.

PROPERLY MEASURING STEEL-IT COATINGS' FILM THICKNESS

There's one more important point about film thickness and STEEL-IT, and that concerns how to measure it. The amount applied should be measured when the coating is wet using a wet film thickness gauge, which is a very simple tool. A useful demonstration of how to use such a gauge can be found on YouTube: http://www.youtube.com/watch?v=DtmEBBzlWQc.

When using STEEL-IT brand coatings, most electronic gauges used to measure dry film thickness can give seriously inaccurate results. That's because such gauges try to locate the substrate, and then measure the distance from the tool to the substrate and conclude that that is the thickness of the coating. However, because of the abundance of stainless steel in STEEL-IT coatings and the fact that they form a barrier coat of stainless steel near the surface of the coating, most electronic gauges often misinterpret this barrier coat as the substrate and report too little coating has been applied.

Electronic Gauges That Correctly Measure STEEL-IT's DFT

After working with STEEL-IT brand coatings, two leading electronic dry film thickness gauge companies – Defelsko Instruments and Imaginant/PELT – have determined that the following models accurately measure STEEL-IT coatings' DFT:

Defelsko Instruments

1. PosiTector 6000 F1
2. PosiTest FM mechanical (magnetic principle) coating thickness gauge,
3. PosiTest DFT ferrous (magnetic principle) electronic instrument

Imaginant/PELT

1. µPts3H Pelt ultrasonic film thickness gauge, coupled with a PELT-XER-M100 transducer and FC-U1STU40 wearcap

Both manufacturers recommend that if customers have difficulty reading STEEL-IT brand coatings thicknesses, that the customer contact them directly for guidance.

CLEANUP

- Use mineral spirits or xylene to clean up after using STEEL-IT 1002B Steel Gray Polyurethane Aerosol.