Application Instructions
STEEL-IT® 5904B
High Temp & Corrosion-Resistant Aerosol

Surface Preparation and Application Instructions

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INTRODUCTION

STEEL-IT 5904B High Temp & Corrosion-Resistant Aerosol is a single-component 316L stainless steel pigmented silicone finish designed for high temperature applications where surface temperatures will normally or periodically exceed 400°F (204.4°C).

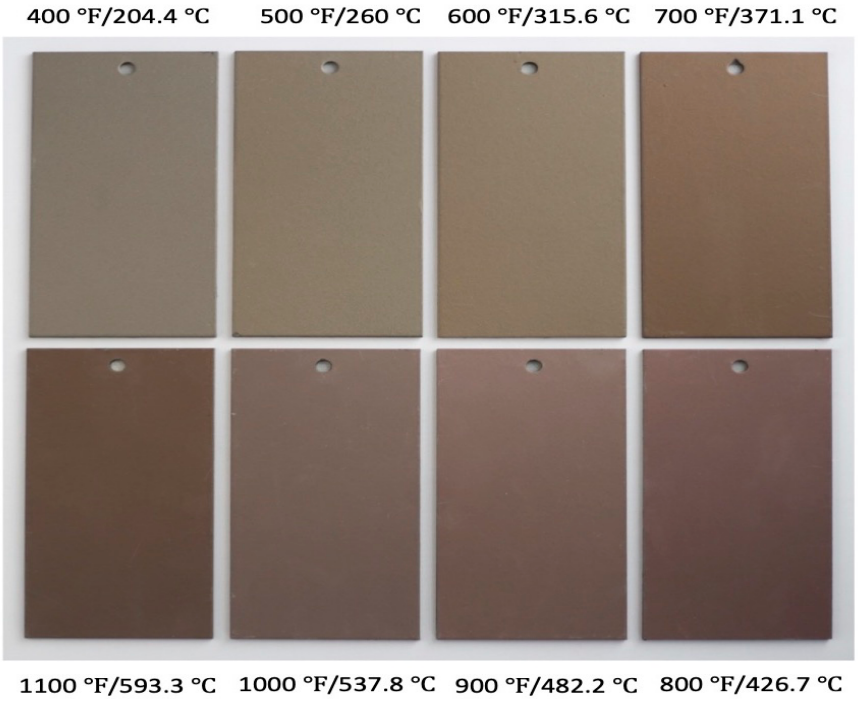
STEEL-IT 5904B can withstand constant temperatures of 1,000°F (537.8°C), with spikes to 1,200°F (649°C).

STEEL-IT 5904B is self-priming and does not require a primer or precoat. The use of other primers is discouraged as the coating must be free to form bonds with the bare steel at high temperature. Clean surfaces and adequate surface preparation are critical.

STEEL-IT 5904B High Temp Aerosol requires a 60 minute bake cycle at 400° F (204.4°C) to cure properly and to attain optimum hardness and durability. Further curing will take place in service as the coating chemically converts to form a complex silicone/stainless steel matrix that bonds tenaciously to well-blasted metal. STEEL-IT 5904B will air dry at room temperature but it WILL NOT CURE without baking. STEEL-IT 5904B will be dry to the touch for handling, but should not be wrapped or strapped for shipping before baking.

COLOR CHANGE INFORMATION

STEEL-IT 5904B High Temp Aerosol is a gray color, which changes to (and remains) various shades of a reddish-chocolate brown starting at about 600°F (315.6°C).



1. PREPARATION

Proper surface preparation is key to the success of any coating job, whether the coating is STEEL-IT or another brand. STEEL-IT coatings adhere to metal surfaces through mechanical adhesion, meaning the coating holds onto the surface by interlocking with a rough profile established on the bare metal, which is ideally achieved by grit-blasting or power-sanding.

SURFACE PREPARATION

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

It's best if the surface being coated can be grit-blasted (e.g. sandblasted) to a 1.5 - 2.0 mils (0.0015" – 0.0020"; 38-50 microns) sharp angular cut profile per SSPC SP-6 (Commercial Blast). STEEL-IT coatings require this rough, "scarified" surface profile in order to have some tooth to bite into and adhere properly.

If blasting is not an option, power-sanding (e.g. with a dual-action sander) using #36 grit sandpaper will achieve similar results on steel. The surface once properly prepared should feel like the striking area on a matchbox.

After grit-blasting, blow any remaining grit material off using an air hose and/or solvent clean the surface with acetone, alcohol, or xylene. Avoid using products that leave behind an oily residue (such as mineral spirits).

Another surface preparation option for the STEEL-IT 5904B High Temp & Corrosion-Resistant Aerosol 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

When using STEEL-IT 5904B High Temp & Corrosion-Resistant Aerosol:

- 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.

SAFETY
Apply the coating in a well-ventilated area.

When applying STEEL-IT 5904B High Temp & Corrosion-Resistant Aerosol it is critical to use:

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

PROPER COATING PREPARATION - SUFFICIENT AGITATION
Before applying STEEL-IT 5904B High Temp & Corrosion-Resistant Aerosol it is critical that the contents be sufficiently agitated. This agitation is what "thins" the coating and prepares it for spraying.

Shake the can vigorously for 2 minutes, ideally with a power shaker, though manually shaking the can is sufficient.

2. APPLICATION

FILM THICKNESS
For STEEL-IT 5904B High Temp & Corrosion-Resistant Aerosol, proper application is **a single coat at 2-3 mils (0.002"-0.003"; 51-75 microns) DFT** (Dry Film Thickness).

STEEL-IT 5904B Aerosol has a high solids content, so it is not necessary to apply a thick wet film to achieve the necessary film build. **Additional coats are not recommended**. More is not better in this case, and the coating will not dry to the touch if improperly applied.

To achieve 2-3 mils (0.002"-0.003"; 51-75 microns) DFT of the STEEL-IT 5904B High Temp Aerosol, the following Wet Film Thicknesses (WFT) should be applied per coat:

STEEL-IT BRAND COATING	NUMBER OF MILS (MICRONS) TO APPLY WET TO GET 2-3 MILS (51-75 MICRONS) DRY
STEEL-IT 5904B High Temp & Corrosion-Resistant Aerosol	5 mils WFT (.005"; 127 microns)

Spray from a distance of 12"-16" from the part to be coated.

CURING INSTRUCTIONS

After applying one coat of STEEL-IT 5904B Aerosol at the recommended thickness, **the coating must be baked at 400°F (204.4°C) for a minimum of 60 minutes to cure**.

Where baking is not possible, STEEL-IT 5904B Aerosol can cure with the heat of being in service as long as the entirety of the coated surface evenly reaches at least 400°F (204.4°C) for a minimum of 1 hour (60 minutes) in the initial run (first exposure to heat).

PROPERLY MEASURING STEEL-IT® COATINGS' FILM THICKNESS

The amount of STEEL-IT 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 at: http://www.youtube.com/watch?v=DtmEBBzlWQc.

When using STEEL-IT brand coatings, many electronic gauges used to measure dry film thickness (DFT) give seriously inaccurate results. 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. Due to the abundance of stainless steel in STEEL-IT coatings, most electronic gauges often misinterpret this barrier coat as the substrate and report too little coating has been applied. For more information on which electronic gauges can be used with STEEL-IT, please contact: info@steel-it.com.

EXPECTED COVERAGE

STEEL-IT® COATING	PRACTICAL COVERAGE AT 2-3 MILS (51-75 MICRONS) DFT*
STEEL-IT 5904B High Temp & Corrosion-Resistant Aerosol	18 sq ft/can (1.67 sq m/can)

* Assumes 20% loss due to overspray and waste

3. CLEANUP

- Use xylene to clean up after using STEEL-IT 5904B High Temp & Corrosion-Resistant Aerosol