SURFACE FINISHING LABORATORY REPORT

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Request	:	SF-20-35
Date of Report	:	09-02-2020
Customer	:	Internal
Subject	:	Evaluation of Rust Free usage on steel prior to painting
Reference	:	

Introduction/Background

The supplier of Rust Free proposed that the material can be used prior to painting
steel surfaces to prevent corrosion by converting the surface to magnetite. The purpose
of this study is to trial powder coat over Rust Free material on ACT steel panels.

Conclusions

After curing, Rust Free must be rinsed with water applied at high pressure, as
directed by the supplier PDS, before powder coat can be applied. If Rust Free is
not removed, the paint will blister severely.

Method

Rust Free material was applied a number #20 draw down bar and allowed to cure
overnight at room Rust Free. Water pressure was varied when the cured
Rust Free material was removed from the panel.

Results

Rust Free, when applied to steel, appears as a milky emulsion that then cures to a waxy solid overnight. The following photographs show panels that have been powder coated after Rust Free. The first set of photographs shows panels that have not been rinsed; these panels have severe blistering. When a hose with a regular nozzle is used to rinse the panels, most of the waxy coating is removed. Where the material was removed, paint was applied and appears as usual, however wherever Rust Free remained, the paint appeared to blister after curing. The PDS for Rust Free recommends that the material is removed using a pressure washer after cure. In order to achieve complete removal of the coating, a high pressure nozzle was fitted to the hose. Higher pressure rinsing allowed the coating to be removed. The steel surface revealed had a slightly matte/different color compared to uncoated steel. Appearance was difficult to capture by photograph and is not pictured below.

Powder coat over Rust Free with no **rinse**

Powder coat over Rust Free with mild **rinse**

Powder coat over Rust Free with rinse