

**STEEL, SHEET, ZINC/NICKEL, ALUMINUM RICH
ORGANIC COATING****WSS-M1A325-B1****1. SCOPE**

The material defined by this specification is a mild steel sheet coated on both sides with an electrolytic zinc/nickel alloy, a pretreatment, and a roll coated aluminum rich organic coating to produce a duplex system. All coatings are free of Hexavalent Chromium.

2. APPLICATION

This specification was released originally for material used for fuel tanks requiring both additional corrosion protection and resistance to methanol fuel blends.

3. REQUIREMENTS

Material specification requirements are to be used for initial qualification of materials.

3.1 STANDARD REQUIREMENTS FOR PRODUCTION MATERIALS

Material suppliers and part producers must conform to the Company's Standard Requirements For Production Materials (WSS-M99P1111-A).

3.2 BASE MATERIAL

The base material shall conform to WSD-M1A333-A2 or -A3, coated to WSS-M1P94-A: 30N30N-EL.

3.3 PRETREATMENT

A complex oxide conversion coating shall be used to increase the adhesion and durability of the aluminum rich organic coating by providing a clean, grease free, corrosion inhibiting bond between the base material and finish.

Coating weights should be measured on samples prior to roll coating and should be tested using either an atomic absorption or inductive coupled plasma testing apparatus.

3.3.1 Cobalt Coating Weight, mg/m² 3.2 - 16.1

3.3.2 Titanium Coating Weight, mg/m² 54 - 226

3.4 ALUMINUM RICH ORGANIC COATING

The coating shall comprise of an epoxy resin binder modified with aluminum metallic particles. The control plan referred to in para 3.1 shall address coating composition.

Date	Action	Revisions
2006 03 31	Activated	





3.4.1 System Process

The coating shall be applied using a roller process. All surfaces of material to be coated must be free from oil, grease, rust, and any other foreign material.

3.4.2 Final Hardness (ASTM D 3363)

Remove any additional coatings, such as dry metal forming lubricants, prior to hardness testing.

Pencil, min 8H

3.4.3 Coating Thickness, micrometers 7.5 - 0.0 + 3.8

Any suitable method may be used to measure coating thickness. In case of dispute, the umpire method shall be metallographic technique.

3.4.4 Dry Film Composition 21.5 - 25.5% (Weight percent - metallic aluminum content)

3.4.5 Appearance

The coating shall be baked to a uniform film, showing no flow lines, pinholes or craters.

3.4.6 Adhesion and Flexibility

Using the equipment and method described in FLTM BI 109-04, form a cup to a depth of 7.6 mm. Wash the coated surface with warm water and allow to air dry. Using firm and even pressure, apply tape across the dome area. Remove the tape within 90 seconds, pulling it with a smooth rapid motion at a 90° angle to the surface.

The tape sample shall have a rating of 8 or better when compared to the attached ball indent adhesion test rating sheet.

3.4.7 Adhesion Grade 1 or (FLTM BI 106-01) better

3.4.8 Proving Ground Corrosion Test (CETP 00.00-R-311 or CETP 00.00-R-339)

For initial approval only.

Fuel tanks manufactured from this material must withstand 100 cycles minimum without perforation.