SHERWIN-WILLIAMS
Product Finishes

Product Finishes Division
West Regional Lab, Victorville

January 2, 2014

To: Fred Monson
From: John Andres
Subject: Project #13749252 – ANSI A250.10 Testing
Customer: Hollow Metal Xpress

Summary: Perform ANSI A250.10 testing on steel panels coated with E61AV0503. Panels are cleaned with Acetone and Aero Green 4110. There is just a slight difference in performance when cleaned with Acetone or Aero Green 4110. The adhesion rated better with the Aero Green 4110. Overall, the coating system received a pass rating to ANSI A250.10-1998.

Required Action: Perform ANSI-A250.10-1998 testing on panels coated with E61AV0503 Kem Aqua 300 Gray. Two panel sets were supplied, cleaned with two different cleaners: Acetone and Aero Green 4110. The coating was 5 wet mils, one coat.

Procedure: Salt Spray Test: follow ASTM B117 "Method of Salt Spray Testing." The period is for 120 continuous hours. The test specimens shall be scribed with an "X" per ASTM D1654. Acceptance is a rust grade of 6 or better as described in ASTM D610 "Evaluation of Rusting." The paint shall not be undercut by rust more than 1/8" on either side of the scribe.

Condensation Testing (Humidity): Follow ASTM D4585 "Standard Practice for Testing Water Resistance of Coating Using Controlled Condensation" with 240 continuous hours. Exposure temperature shall be maintained at 100°F minimum. The paint film may have any quantity of #8 blisters but no more than a few #6 blisters as illustrated in ASTM D714 "Standard Method of Evaluating Blistering of Paint."

Impact Test: The paint shall be tested per ASTM D2794 "Standard Test Method for Resistance of Organic Coatings to the Effects of Rapid Deformation (Impact)" with 20 inch-pounds of direct impact using a Gardner Impact Tester with ½" ball or punch at room temperature of 70 - 75°F. After impact is made, apply ¾" wide #600 Scotch cellophane tape firmly to the impact area and pull off sharply. No paint film removal shall occur other than at an area of 1/8" in diameter at the center of the impact area.

Film adhesion test: the coating shall be tested in accordance with method "B" of ASTM D3359 "Standard Test Method for Measuring Adhesion by Tape Test." A total of 11 parallel cuts are made with a sharp instrument, 1 mm apart in both a vertical and horizontal direction forming a grid. One inch wide pressure-sensitive tape is then firmly applied to the scribe surface and rapidly removed. There shall be no adhesion loss less than a grade 3B as defined in ASTM D3359. The grade represents a film removal of between 5 – 15%.

Results

Table 1: Salt Spray 120 Hours

Panel Clean	DFT	Rust Creep at Scribe	Degree of Rust	Pass/Fail
Acetone	1.4 – 1.7 mils, 1.5 mils Average	Rating 10	Rating 9	Pass
Aero Green 4110	1.5 – 1.7 mils, 1.6 mils Average	Rating 10	Rating 9	Pass

Notes: There was “dense” size 6 blisters on the panel. However, this has no bearing on the rating for ANSI A250.10. The panels must be galvanized or treated with zinc. There are white deposits (zinc oxidation) after the 120 hours of corrosion. These were ignored for the ratings and only brown (iron) rust was used for the ratings. If the white oxidation was considered, the rating would be a “5” for rusting which is a failure rating.

Table 2: Condensation Testing (Humidity) 240 Hours

Panel Cleaning	**DFT**	**Result**	**Pass/Fail**
Acetone	0.9 – 1.05 mils, 1.0 mils Average	Dense Size 8 Blisters, blisters only on bottom 1/3 of panel	Pass
Aero Green 4110	1.3 – 1.5 mils, 1.35 mils Average	Dense Size 8 Blisters, Blisters only on bottom 1/3 of panel	Pass

Table 3: Adhesion & Impact

Panel Cleaning	**DFT**	**Adhesion**	**Impact Result**	**Pass / Fail**
Acetone	1.85 mils	4B, 95% adhesion	100% adhesion	Pass
Aero Green 4110	1.6 – 1.85 mils	5B, 100% adhesion	100% adhesion	Pass

Comparing results to requirements, the panels receive a pass rating to ASNI A250.10.

Sincerely,

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Chemist
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