97500000 STRUCTURAL COATING MATERIALS
COMMENTS FROM INTERNAL/INDUSTRY REVIEW

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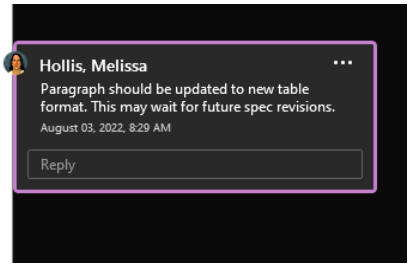
Comments: (8-3-22, Internal)

Minor formatting suggestions to consider.

→ → Volatile Organic Compounds (VOC) shall be less than 3.5 pounds per gallon when tested in accordance with ASTM D3960.¶

→ **975-1.3 Approved Product List (APL):** All polymeric coating materials except the materials in 975-4 shall be listed on the Department's Approved Product List (APL). Manufacturers seeking evaluation of their products shall submit the product data sheets, performance test reports from NTPEP or an independent laboratory showing that the product meets the requirements of this Section, a Product SDS or performance test reports showing percent weight compositional analysis including Chemical Abstract Number, ACGIH time weighted average and ceiling exposure limits for all components, lower and upper explosive limits, flash point, boiling point, amount of volatile organic compounds by weight, and specific gravity for each component of the coating system, and a APL application in accordance with Section 6.¶

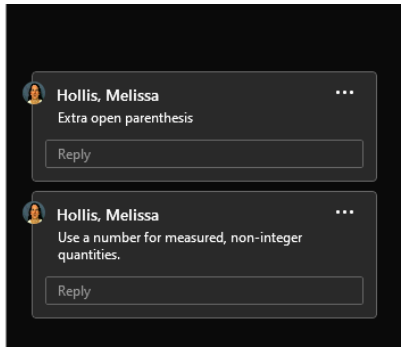


975-2 Structural Steel Coating Systems.¶

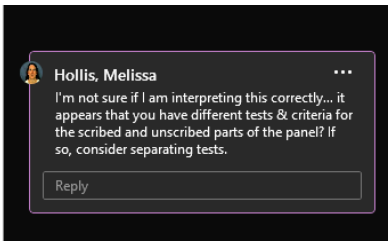
→ **975-2.1 General:** Structural steel coatings shall meet the application requirements of Section 560. Prepare and coat sixteen flat and four composite test panels in accordance with AASHTO R 31 ((FED STD 595 in color Shade White, X6134 Grey or X4062 Green) for each coating system proposed for approval and submit to the State Materials Office (SMO). Samples will be subject to verification testing by the Department, as identified in 975-2.2. In addition, submit a one quart wet sample of each component of each coating system, one container of compatible caulk to the SMO.¶

→ **975-2.2 Performance Requirements:** Each coating system will be subject to the testing identified in 975-2.2.1 and 975-2.2.2. All coatings, regardless of color, shall meet the requirements in Table 975-1.¶

→ → **975-2.2.1 Random Laboratory Verification Testing:** Prepare and coat twelve flat test panels for random laboratory verification testing. ¶



	Test No. 1	(primer only)
Salt Fog Resistance - Scribed	AASHTO R 31¶ Test No. 2 Scribed¶ ASTM D610 Unscribed	Blister Value = 10¶ Average Rust Creep at the Scribe ≤ 0.1 inches 3/32"¶ Unscribed Rust grade ≥ 9S, 9G, 9P ¶ after 8,7605000 hours
Salt Fog Resistance - Unscribed	ASTM D610	Rust grade ≥ 9S, 9G, 9P ¶ after 8,760 hours
Cyclic Weathering Resistance	AASHTO R 31¶ Test No. 3	Blister Value = 10¶ Average Rust Creep at the Scribe ≤ 6/32" 0.2 inches, Color Retention ΔE*ab ≤ 8.0,



Response: We will revise the APL language at the beginning of the Specification with the new table in the next revision. We will reach out to Product Evaluation to get examples. Salt Fog Test was split into two tests to avoid confusion with acceptance criteria.

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Tim Lattner
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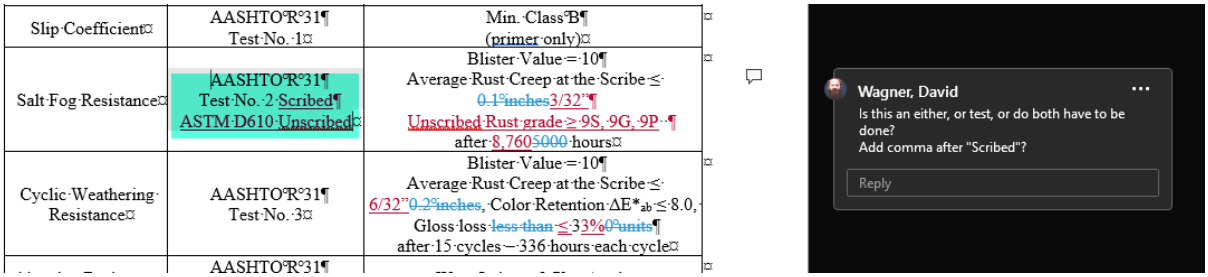
Comments: (8-3-22, Internal)



Slip Coefficient	AASHTO R 31 Test No. 1	Min. Class B (primer only)
Salt Fog Resistance	AASHTO R 31 Test No. 2 Scribed ASTM D610 Unscribed	Blister Value = 10 Average Rust Creep at the Scribe ≤ 0.1" inches 3/32" Unscribed Rust grade ≥ 9S, 9G, 9P after 8,760 5000 hours
Cyclic Weathering Resistance	AASHTO R 31 Test No. 3	Blister Value = 10 Average Rust Creep at the Scribe ≤ 6/32" 0.2" inches, Color Retention $\Delta E^*_{ab} \leq 8.0$, Gloss loss ~~less than~~ ≤ 33% 0 ~~units~~ after 15 cycles – 336 hours each cycle
	AASHTO R 31	

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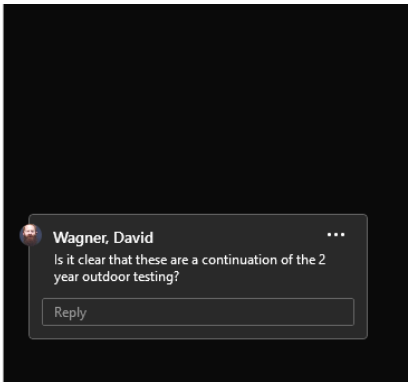
Table 975-1 Structural Steel Coating System Performance Requirements Laboratory Testing		
Property	Test Method	Acceptance Criteria
Color Retention	ASTM D2244	Avg. $\Delta E^*_{ab} \leq 8.0$ ~~after 2 years~~
Gloss	ASTM D523	Avg. ≤ 33 0 % loss of gloss ~~units after 2 years~~



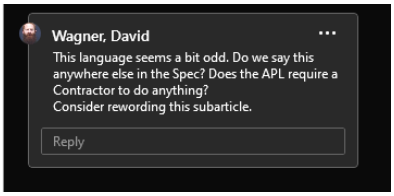
→ **975-2.3 Structural Steel Coating Systems for New Structures:** Systems must meet the general composition requirements of Table 975-2 and this section.

Table 975-2
Structural Steel Coating System General Composition Requirements

~~and color retention are not applicable.~~

→ → → **975-2.3.1.2 Intermediate Coat:** Intermediate coatings, when required by the ~~manufacturer~~ Approved Products List (APL), shall be a polyamide or cycloaliphatic amine epoxy and a component of the full APL coating system.

→ → → **975-2.3.1.3 Finish Coat:** The finish coat shall provide the color and gloss required for the completed coating system. A finish coat may be comprised of a single pigmented coat or a pigmented coat with a clear coat that meets Table 975-2. ~~The clear coat shall contain a dissipating colorant. The dissipating colorant shall be visible for a minimum of 12 hours after application and shall completely dissipate within 96 hours after application.~~

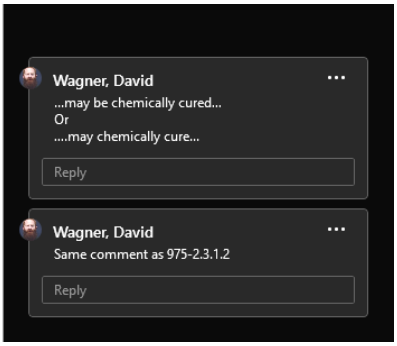


→ → **975-2.4.1 Prime Coat:** Provide inorganic or organic zinc-rich primers consisting of zinc dust, functional additives, and an organic binder with appropriate solvents. The composition of the primer shall consist of an organic vehicle that may chemically cured or may dry by solvent evaporation. Zinc dust pigment shall contain be a minimum of 77% zinc dust by weight and a maximum lead level of 0.01% ~~Type II in~~ accordance with ASTM D520. ~~Organic zinc rich primers shall meet the requirements SSPC Paint 20, Type II, Level 2.~~

→ → → Organic zZinc-rich primers shall be used as galvanizing repair compounds for areas greater than 100 square inches.

→ → **975-2.4.2 Intermediate Coat:** Intermediate coatings, when required by the ~~manufacturer~~ APL, shall be a component of the full APL coating system.

→ → **975-2.4.3 Finish Coat:** Finish coating shall provide the color and gloss required for the completed coating system. A finish coat may be comprised of a single pigmented coating or a pigmented coating with a clear coat. ~~The clear coat shall contain a dissipating colorant. The dissipating colorant shall be visible for a minimum of 12 hours after application and shall completely dissipate within 96 hours after application.~~



Response: All of David's comments were agreeable and adopted as edited in the document. Salt Fog Test was split into two tests to avoid confusion with acceptance criteria.

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Maxim Dube
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Comments: (9-14-22, Industry)

To whom it May concern,

I submit my comments regarding the suggested modifications of the Structural Coating Materials specification #9750000.

My suggested changes relate to sections 975-3, 975.4, and the associated tests specified in section 975-2.2.

- 975-3 Galvanized Steel Coating System
- 975-4 Paint for Galvanized Steel Strain Poles, Mast arms, monotube assemblies, Conventional Light Pole Assemblies, and Aluminum Poles, Pedestals, and Posts.

Suggested modifications:

Section 975-2.2 (2-year outdoor testing section)

1- Section 975-2.2 suggests 2 years of outdoor testing instead of 5 years. Although, section 975-4 still mentions 5 years.

2- Section 975-2.2 mentions color retention and gloss parameters. Knowing that hot-dip galvanized will oxidize over time, color (fading) and gloss will be lost. I suggest adding a section for touch-ups of galvanized coatings without color and gloss retention testing. I also recommend adding a note that coatings used shall meet ASTM A780 Repair of damaged and uncoated areas of hot-dip galvanized coatings.

Thank you for taking the time to analyze this request and looking forward to further discussing the possible options.

Maxim Dube
Galvatech2000

Technical Director

Response: 975-3 related to galvanized systems was updated to have it be evaluated against the same performance requirements we hold to our other paint systems. The Department does not plan to use galvanizing on its own for a bridge coating system, but some pedestrian bridges have been attempted with alternate duplex coatings (Galvanizing, w/ Polysiloxane or Urethanes) and they have not done well under testing. The Department has identified an alternate to painting over galv, metalizing. Which we will introduce next year in the spec book. Lastly, there is a 5-year warranty associated with painted poles, who may use whatever product system they want, and they have a 5-year bond warranty applied. The 2-year outdoor testing is not associated with the 5-year warranty. The 2-year testing is for bridge paint systems. The 5-year warranty is for manufacturer selected paint systems applied to poles and light fixtures.
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