9750600 STRUCTURAL COATING SYSTEMS –
CLASS 5 APPLIED FINISH COATINGS
COMMENTS FROM INTERNAL/INDUSTRY REVIEW

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Barry Smith

Comment: (Internal 5-13-10)

1. 975-6.2.1 States: Coating thickness and application shall be compliant with the manufacturer's published technical data sheet and ASTM D 4587. ASTM D 4587 states that test panels be prepared "consistent with anticipated use or mutually agreed upon". S400-15.2.6.4 Application: dictates the material be applied at a rate of 50±10 ft²/gal.

   Shouldn't the product be tested as it will be used? Application rates vary by manufacturer/product technical data sheets.

Response: The rate of 50 square feet per gallon is specified in both Sections 400 and now 975. If the published technical data sheet does not indicate that the product can be applied at 50 square feet per gallon then the product will not be considered for QPL status and it should never make it to the testing stage of the process. No changes made.

2. Fluorescent UV-Condensation Exposure under laboratory testing lists ASTM D 4587, 2000 hours. There are four test cycles listed in table I of ASTM D 4587.

   Should the test cycle be specified for clarification(#2 Industrial Coatings)?

Response: The ASTM specifies a test cycle. Repeating it in the FDOT spec would only create an additional rabbit trail that would need to be maintained in the event that ASTM modifies there test cycles. No changes made.

From the State Specifications Office: In addition, the test method in the specifications states "4 hours UV, 4 hours condensation" which clarifies the cycle to use.

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Steven King
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Comments: (6-9-10)

> *Prepare test panels by applying the finished coating at a rate of 50 +-plus or minus 10ft2 square foot per/ gallon.*

Should that read plus or minus 10 square **feet** per gallon?

Response: From the Specifications Office – this has been changed.

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William Sears
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Comments: (6-9-10)

1. The Departments Qualified Products List does not address the texture of the Class 5 finish. Contractors are providing a Class 5 finish without mineral aggregate filler because they can reduce the spread rate.

Response: Absolutely correct. The original intention of a Class 5 Applied Finish Coating was to mask bug holes and other imperfections in the concrete. It is an aesthetic feature, and reducing the film thickness reduces its effectiveness. The department went to a fine and smooth finish on the notion that these textures would be beneficial from a dirt pick up and mold growth perspective. Studies have shown that this is not necessarily the case and factors like location and geographical position of the structure have a lot to do with these attributes. The 50 square feet per gallon was not being enforced on fine and smooth products because they simply could not be applied to that thickness without additional applications, which created claims from contractors. I have addressed this issue with state construction and I believe this situation has been remedied. No changes made.

2. Specification 400-15.2.6.5 Finish Product attempts to address texture. Recommend stating in 400-15.2.6.5 that precast concrete requiring Class 5 finish shall have the smooth mineral aggregate texture and cast-in-place concrete shall have a rough mineral aggregate texture. No fine texture without mineral aggregate will be acceptable.

Response: I will look into this and see if we can specify different textures for precast and cast in place. This makes perfect since, but I want to verify that this does not cause other issues prior to specification implementation. I will look at this for future revisions. No changes made at this time.

3. Specification 400-15.2.6.3 should require pressure cleaning rather than relying on "if there is no reaction between the muric acid and the concrete, pressure wash the concete".

Response: I agree. This change will be made in Section 400 for a later workbook.

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Comments: (7-1-10)

Specification is not clear as to who will perform the test. FDOT or independent lab? The letter from Rudy indicates that the department will test, but the spec doesn't clearly define it.

Response: (975-1-3) “Manufacturers seeking evaluation of their products shall submit (1) the product data sheets, (2) performance test reports from an independent laboratory showing the product meets the requirements of this section”.

From the State Specifications Office: The last paragraph in 975-6.2 requires the manufacturer to submit test panels to the Department. All references to outdoor testing have been removed so the manufacturer will not perform any outdoor testing. No changes made.

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Comments: (7-2-10)
In response to the proposed change to the above referenced specification, we respectfully offer the following information and comments.

- Sherwin-Williams has contracted for and is currently performing (or has already completed) all of the required testing for the Class 5 Coating based upon the currently published 975 specification.

- As of June 25th, our coating had completed 3696 hrs of the 5040 hrs of Cyclic Weathering testing based on the current specification, with no blisters cracks or loss of adhesion.

- It appears that the key proposed change, is to remove the salt fog portion of the currently referenced Cyclic Weathering test (R-31) and only require 80% of the UV Exposure portion of the test currently specified. The requirement of continuous Salt Fog (B117) however, remains in the proposed change to the specification.

- If the state is seeking to gather blister data (salt fog) and stability data from the UV Exposure, it seems odd to separate the two test procedures. When performed in sequence with one another, they more closely mimic weathering cycles than either does individually, and typically the test (cyclic weathering) merging the two, is more demanding on coating systems. In other words, if the state is seeking 2000hrs of Salt Fog data and 2000 hrs of UV data, why not require 4000 hrs of Cyclic Weathering and not have a separate UV exposure or a separate Salt Spray requirement?

- Estimated costs associated with the current test protocols exceed $11-12K. The proposed changes would still require separate UV & salt spray tests however the proposed elimination of the salt spray portion of the weathering test, would certainly result in some overall cost savings, perhaps as much as $2500-3000. Likewise, the elimination of the separate salt fog requirement & maintaining the cyclic weathering requirement (UV & salt fog), either 4000 or 5000 hrs would also result in cost savings of approx $2500-2700.

- Sherwin-Williams has already completed the separate (2000hr) salt fog requirement and at 4000 hrs of the R-31 Cyclic Weathering test, we will have completed the proposed 2000 hr UV requirement. We do intend to continue the testing currently contracted, including the complete 5040 hrs of Cyclic Weathering (2540 hrs of UV & 2540 hrs of salt spray) and will be happy to share those results with FL at completion.

I trust that this information is complete and if further comment, explanation or discussion is desired, please don't hesitate to contact me.

Response: The salt fog testing is a performance test designed to predict a coatings ability to prevent corrosion. Class 5 Applied Finish Coatings are not intended to provide corrosion resistance, but rather solely aesthetics. I do see value in UV resistance testing of these products and a combination of UV/condensation and salt fog may be a good direction and more data is needed. It is unclear at this time whether any Class 5 Coatings would have met the previous criteria. No changes made at this time.

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