

5601100 Coating Structural Steel.
COMMENTS FROM INTERNAL/INDUSTRY REVIEW

Brent Kearney

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Comments: (10-5-11) Comment from David Borger (Skyline Engineer) "I think inorganic zinc primers are a good idea under coating on the exposed part of the sheet piling. When holes form in the coating the zinc helps to prevent the hole from spreading. However, I see no reason to use it on buried steel that is not being coated. The corrosion rate of steel in buried soil is negligible and it is not cost effective to protect this area. I would certainly never design it into a job or suggest it for a clients project."

Response: The specification indicates to paint five feet down from the design scour depth. The inorganic zinc will be applied to the backside of the piles as this side will be in a corrosive environment.

Cheryl Hudson, P.E.

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Comments: (10-19-11) *5601100 Coating Structural Steel.* Was the removal of epoxy tar from pipe and H piles intentional?

Response: Yes. I am told these items are not used in highly aggressive environments anyway. From a coatings perspective, I feel the inorganic zinc will perform better than entire coating system anyway.

Louis D. Alfieri

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Comments: (10-20-11) Unless I am misunderstanding something, I cannot find a reason as to why coal-tar epoxy must be applied in two coats. Without stating vendor names, each CTE that we use (each of which are on the state's QPL) is capable of being applied to a dry film thickness of 16mils minimum. Various manufacturers have even recommended achieving the correct dry film thickness in one coat as opposed to two coats. This is due to the fact that coal-tar epoxy has a very short re-coat window, some, a matter of hours. This particular type of coating becomes very hard and will not except topcoats, even a topcoat of itself, which can result in major adhesion failures. If there is something I am missing, please let me know. Otherwise, I would recommend that FDOT 560-11.2 Section 1 be changed to allow contractors to apply coal-tar epoxy in one coat of 16 dry mils if allowed by the manufacturer's product data sheet.

Response: I checked the Sherwin Williams website (one of our QPL products) and here is the application information:

Recommended Spreading Rate per coat:

Minimum Maximum

Wet mils (microns) 11.0 (275) 22.0 (550)

Dry mils (microns) 8.0* (200) 16.0* (400)

~Coverage sq ft/gal (m2/L) 74 (1.8) 148 (3.6)
Our spec calls for 8 to 10 in each coat. This product could be applied at 16 mils in one coat, but that would require the applicator to hit at exactly 16 mils and this is not humanly possible. For instance, there will be coating thicknesses of 15 mils (spec- non compliant) and 17 mils (Prod data sheet - non compliant) and therefore this is not a good direction.

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Comments: (10-24-11) The new language reads as though the exposed side would be treated with both Zinc Primer and Coal Tar Epoxy – is this the intent?

Response: Yes that is the intent.

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Comments: (11-16-11) 560 – 11.2<<>>Some type of coating should be applied to the interior of pipe (pile) or the interior should be climatically sealed otherwise element will corrode from the inside – out. I suggest coating if the interior is even remotely accessible.

Response: I am not aware of ever coating the interior surface of pipe piles. I believe these items are filled with concrete? How would we inspect the interior surface? In any event, this direction was provided by experts in the State Structures Design Office.
