Specification Section 455
Subarticle 455-7

ORIGINATION
Date: 6-20-2024
Name: Ben Goldsberry
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COMMENTARY

This change provides temporary protection to the exposed ends of carbon steel strands and reinforcing bars from chloride water. The temporary protection is for the period after pile cut-off and prior to the permanent condition of being encased in concrete.

INTERNAL COMMENTS AND RESPONSES

BLACK = Comment BLUE = Specifications Response **GREEN** = Change Made to Specification

Name: John Hardy
Date: 6-28-2024
COMMENT: Please consider the following change from: "After pile cut off is performed, the epoxy must be applied before the water level of the next high tide or flood event reaches the top of the pile." to "After pile cut off is performed, the epoxy must be applied within 24 hours.

RESPONSE: The intent is that the epoxy be applied before the next high tide. The proposed change will not work since there are two high tides per calendar day. It's recommended to keep the language as is.

ACTION TAKEN: None.

Name: Ananth Prasad
Date: 7-1-2024
COMMENT: 455-7.10 Protecting Tops of Concrete Piles: Protect the exposed carbon steel strands and reinforcing bars at the top surface of each concrete pile with epoxy when all the following conditions apply:
1. The General Notes in the Plans classify the substructure environment as extremely aggressive due to chlorides,
2. The piles are not enclosed by a cofferdam maintaining a dry condition between the time the pile is cut off and when the pile top is encased in concrete,
3. The top of the piles after cut-off are within 6 feet of the mean high water elevation listed in the Plans.
After pile cut off is performed, the epoxy must be applied before the water level of the next high tide or flood event reaches the top of the pile. Use an epoxy meeting the requirements of 926-1, Type K. In accordance with the epoxy manufacturer's recommendations, prepare the surface of the top of the pile, and apply the epoxy to each exposed strand and bar. Apply the epoxy to each bar and strand such that its limits extend a minimum of 1 inch past the edge of the strand or bar.

1. …due to chlorides >2,000 ppm. Specifying the content will eliminate questions.
2. …cofferdam or water-tight form…. Waterline footings rarely use a cofferdam but require a watertight form.
3. …within 4 feet. Not sure where 6' comes from. If it comes from DB spec where you have to leave 6' of pile available for verification that is for hook-up of gauges 3' below top.
4. Type K is for underwater sealing of the bottom of pile jackets. There is only one on the APL. Typically Type AB is used for sealing the area where reinforcing is exposed during partial removal. Type AB is the most common with 14 on the APL. I'm not sure that a specific type needs to be listed.

RESPONSE:
1. The SDG contains the criteria for environmental classification. Including the criteria of 2,000 ppm in both the SDG and the Specs would be discouraged. If the 2,000 ppm criteria were ever adjusted, the SDG and Specs would both have to be revised. The General Notes will always include the substructure environmental classification and should provide a straight forward method for the Contractor and CEI to determine what's required for the project. It's recommended to keep the language as is.
2. Change will be made as noted.
3. The 6 feet was selected as a reasonable height and is consistent with 400-9.5 for joints in sea water. It's recommended to keep the language as is.
4. There are two high tides per calendar day, so the epoxy will be inundated by the next tide before it cures. Type K was selected because it's an underwater epoxy which would cure after the pile is inundated. We are open to another type of epoxy that cures in water, otherwise it's recommended to stay with Type K.

ACTION TAKEN: Change made to include "or water-tight form"