

4500000 PRECAST PRESTRESSED CONCRETE CONSTRUCTION
COMMENTS FROM INTERNAL/INDUSTRY REVIEW

Ananth Prasad/Miloslav Zeman
850-942-1404/ 321-388-2895
aprasad@ftba.com / mzeman@durastress.com

Comments: (6-8-18)

See the comments below:

1.

450-11.6.1 States: Apply two layers of epoxy to the exposed beam ends (including clipped and chamfered surfaces) no later than fourteen days after detensioning.

We currently apply silicone on the end of strands to act as a cushion to the applied epoxy. As the beam contracts and expands the strand will pop thru the epoxy. This does not allow for that.

Response: Beams ends that will not be permanently encased in concrete diaphragms do not require silicone, because silicon sealer may act as a bond breaker between epoxy and concrete. Silicone is only applied to beams permanently encased in concrete diaphragms. The current language on 450-11.6.1 does not contemplate silicon of non-encased beams.

450-11.6.1 Beams: For beam ends that will not be permanently encased in concrete diaphragms, apply two layers of epoxy to the exposed beam ends (including clipped and chamfered surfaces) within seven calendar days of detensioning and prior to development of any corrosion at the ends of strands. The finished thickness of the epoxy coating must be a minimum of 1/16 inch and form a vertical flat plane without deviations or localized depressions from recessed strands or other defects.

The use of silicone as a cushion to the applied epoxy is a new change to the specification. The proposed change may be considered in the future specification changes, provided that additional data and research are submitted along the proposed change.

Action: No change is needed in the current proposed specification.

2.

450-12.2 Item 2 States: A previously approved Engineering Analysis Report (EAR) may not be applied to a current major repair without the approval from the original engineer.

This defeats the purpose of having pre approved repairs and will result in added costs and lost time for the producer and contractor

Response: This is per Florida Administrative Code Chapter 61G15-27 "Procedures for the adoption of another's work". We don't want to violate the existing law. This language was previously discussed with industry. Preapproved procedures can be obtained from PCI Manuals.

Action: No change is needed in the current proposed specification.

3.

450-12.3.1 Surface Deficiencies: Surface deficiencies are defined below and include spalls, chips, bug holes, surface porosities, honeycombs, and shallow surface cracks.

Regardless of the types of deficiencies, when the total surface area of all deficiencies within a single product exceeds 1.0% of the product's area that will be exposed to the environment, the deficiencies are considered major.

This statement will result in multiple NCRs due to air bubbles which trap against the form.

Response:

Note that the current article 450-12.2 does not take into account for all the surfaces of the beam.

450-12.2 Surface Deficiencies: Surface deficiencies are defined below. Regardless of the types of deficiencies, when the total surface area of all deficiencies within a single product exceeds 2.0 % of the product's length times its depth, the product will require engineering evaluation and disposition in accordance with 450-14. Surface deficiencies include spalls, chips, bug holes, surface porosities, and honeycombs.

What really matters on the beam is the surface exposed to the environment. The phrase "product's length times its depth" does not include all exposed surfaces. More than 50% of the exposed surfaces are not being considered (beam back face, upper and lower flange widths, and ends of the beam areas).

The revision proposes a better approach, it refers to the total surface exposed to the environment which is much greater than "product's length times its depth".

Therefore, as the surfaces proposed in this revision could double the original area considered in the current document, the percentage of defects consequently needs to be decreased. The 2% "product's length times its depth" is less than 1% of the exposed area. Therefore 2% magnitude is too high, and 1% is more adequate. This language was previously discussed with the industry. In actuality, the proposed numerical threshold will always end up creating a higher surface area threshold to distinguish major/minor defects by than what was there previously.

Action: No change is needed in the current proposed specification.

Ghulam Mujtaba
352-955-6678
ghulam.mujtaba@dot.state.fl.us

Comments: (7-5-18)

1. Subarticle 450-2.3 The maximum allowable sweep for I-Beams and Piles: There is no need for the equation. The statement "The maximum allowable sweep for I-Beams and piles is 1/8 inch for every 10 feet of length" is self-explanatory. The asterisk in the equation appears that it may refer to a footnote. But, it is multiplication sign. In case if equation is used, modify it as follows: Maximum allowable sweep (in) = 0.0125L Where: L = beam or pile length in (ft.).

Response: The equation was requested by Districts for clarification. The equation was edited for clarity.

Change made.

2. Subarticle 450-2.3 Last two paragraphs: Change: If the camber exceeds by 1 inch the design camber..." to "If the camber exceeds by 1 inch of the design camber...". The intent of the last sentence is not clear and it should be deleted. The previous sentence describes the proposed corrective measures.

Response: Agreed. Sentence was reworded.

3. Subarticle 450-12.2 Item No. 2 First paragraph: expand the paragraph to read: "within 30 days of the defect identification".

Response: Agreed. Sentence was reworded.

4. Subarticle 450-12.2 Item No. 2 Third paragraph: expand the paragraph to read "the approval from original engineer who has performed the analysis of the defect.

Response: Agreed. Sentence was edited as follows: "...the approval from the original engineer

who signed and sealed the previously approved EAR.”

5. Subarticle 450-12.3 First sentence: Change the first sentence to read: Surface deficiencies include spalls, chips, bug holes, surface porosities, honeycombs, and shallow surface cracks.

Response: Language, as sent out for Industry Review, is clear.
No change made.
