

4501105 PRECAST PRESTRESSED CONCRETE CONSTRUCTION
COMMENTS FROM INTERNAL/INDUSTRY REVIEW

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Comment: (6-4-14, Internal)

For fender piles: According to this spec change, to cut the strands 1- inch below the top of the pile, concrete will be removed around the strands and epoxy patches will be applied in the plant. Here is my concern: After driving, patching will be likely to be required again. How and who will do the patching after driving the piles? Is the Contractor going to be paid for this additional patching after driving? Language may need to be added in 455 to address this.

Response: 455-5.11.6 has the following language

→ → **455-5.11.6 Fender Pile Installation:** For piles used in fender systems, regardless of type or size of pile, either drive them full length or jet the piles to within 2 feet of cutoff and drive to cutoff elevation to seat the pile. The Engineer will not require a specific driving resistance unless noted in the Plans. Use methods and equipment for installation that do not damage the piles. If the method or equipment used causes damage to the pile, modify the methods or equipment at no expense to the Department.

If damage to the patches is an issue during construction, please modify Section 455 to address the repairs. The recessed strands and epoxy patches are to mitigate corrosion related damage. No change made.

Anonymous

Comment: (6-12-14)

450-11.6.1 Beams - Beginning of 1st Sentence should read "For beam ends..." not "beams ends"...

Response: Agree. The "s" will be deleted.
Change made.

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Comment: (6-12-14)

1. 450-11.5.2: Recommend changing the sentence, "For fender piles, mechanically cut the top strands at least 1 inch below the concrete surface." Remove the word "top". They likely won't know which end is the top at the casting yard.

Response: Disagree; the strands will be cast with a 1" deep recess at the pile head. If the manufacturer wants to recess and protect both ends it is their prerogative, but we see no need to require double the work. For clarity, I added a requirement that the pile be marked to indicate the head.
No change made.

2. Use consistent wording - some places you say "to a minimum of xx inches below the concrete surface..", others you say, "at least xx inches...". Use consistent wording throughout.

Response: Agree.
Change made.

3. 450-11.6, You provide workmanship guidelines for coating beam ends. You should provide similar guidelines for coating pile tips.

Response: Disagree, the first statement in 450-11.6 is to "Prepare the concrete surfaces and apply Type F-1 epoxy in accordance with the manufacturer's recommendations."

Beam ends are more critical, and have a long service life, thus the added instructions for two coats and min. thickness. Tops of fender and exposed ends of piles have recessed strands and the recess is filled with an epoxy "patch", and replacement is anticipated. Concrete posts have a shorter service life requirement and are not exposed to the same conditions a fender pile would experience.

No change made.

Shailesh Patel
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Comment: (7-11-14)

~~below the concrete surface. ¶~~
→ → *450-11.5.2-Piles: Mechanically cut strands flush with the concrete surface. ~~except~~*
For fender piles, ~~then~~ mechanically cut the top strands at least 1 inch below the concrete
surface. ¶

Producers typically use a one inch sponge around the cables at the ends to create a small void in which to burn back the cables and then place epoxy in the holes. Unless a large void is made in the ends, there is no physical way that I know of mechanical cutting that deep into the product without causing more damage than intended. Also, the first spiral turn is at one inch.

I interpret "cut the top strands" as cutting strands for the head end. The fender system that we are casting now has some piles with bolt holes and some without. For the piles with bolt holes, that end is the head end. For the piles without bolt holes, the piles are symmetrical. So we need to do the same to both ends or clearly identify the head and tip ends.

Response: Agree; see revisions to 450-11.5.2 and 450-11.6.2. Recessed strands for the exposed end (head) of pile are to be burned 1" below surface and patched with type F-1 (gel-sand) epoxy.
Change made.
