CC-4432.5 Twisting and Coiling.

(a) Prestressing tendons composed of multiple elements shall be twisted, as necessary, to minimize differential length of the individual prestressing steel elements. Twisting is mandatory for all horizontal circumferential tendons composed of multiple elements stressed simultaneously as a group. The amount of twist shall be specified in the construction procedure. However, intentional twisting of tendons composed of multiple elements stressed simultaneously as a group may be waived for horizontal circumferential tendons as well as other configurations of tendons meeting all other requirements of CC-4430 provided the following additional conditions are met:

1. Tendons shall be maximum of 0.63 in. (16 mm) strand (ASTM A416) that are prefabricated and pulled into the duct at one time (complete tendon). All strands shall be the same hand lay.

2. Provisions shall be made to keep strands in the tendon bundle parallel as the tendon is pulled into the duct.

3. The uncoiler shall allow individual strands to move against each other as the tendon is pulled in. The tendon shall be pulled from a cage versus being pre-tied and pulled in from a rotating table (lazy susan).

(b) Coiling, when required for transportation, shall be performed in a manner not to cause damage to the tendon. Coil diameter shall be specified in the construction procedures.

Proposed ASME Code Revision

Revisions are highlighted (Green color: 2nd revision) (Crossed for deletions, underlined for additions)

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1. Tendons shall be maximum of 0.63 in. (16 mm) strands (ASTM A416) that are prefabricated and pulled into the duct at one time (complete tendon). All strands shall be the same hand lay.

2. Provisions shall be made to keep strands in the tendon bundle parallel as the tendon is pulled into the duct.

3. The uncoiler shall allow individual strands to move against each other as the tendon is pulled in. The tendon shall be pulled from a cage versus being pre-tied and pulled in from a rotating table (lazy susan).

4. Tendons shall be maximum of 0.63 in. (16 mm) strands (ASTM A416). All strands shall be the same hand lay. After the tendon is installed and prior to performing the conventional full stressing operation, each strand of every tendon shall be stressed individually, at the same time, at the same force (5% to 10% of the specified strand ultimate strength) with independent individual stroke to remove the slack between the strands.

(b) Coiling, when required for transportation, shall be performed in a manner not to cause damage to the tendon. Coil diameter shall be specified in the construction procedures.