

4620200 POST-TENSIONING
COMMENTS FROM INDUSTRY REVIEW

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Comments:

Shouldn't the URL to the referenced website be included in the Specification?

Response: Including URLs in the Specifications is not the preferred practice due to the frequency at which URLs tend to change and the Specification revisions that are thus required.

Bob Dion
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Comments:

Suggest you add the URL address of the web site referred to in 462-2. Use 105-3.2 as an example of other FDOT URL addresses referred to in specifications.

Response: See response above.

Rodney Chamberlain
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Comments:

I recommend adding 31 strand systems to the following paragraph: Department standard tendon sizes for designing and detailing consist of 0.6 inch diameter strand in anchorages containing 4, 7, 12, 15, 19 and 27 strands; standard bar sizes from 5/8 to 1 3/4 inch diameter. Systems using alternate anchorage sizes and/or strands utilizing 1/2 inch strand and providing equivalent force to these standard sizes may be submitted for approval.

Response: Upon further review, it has been determined that the current language is sufficient to allow for alternate size PT systems to be submitted for review and potential approval.

Duane Brautigam

Comments:

RUDY ... Please discard ... This change seems to be an overreaction to previous Please edit the second sentence of paragraph 2 Suggest adding to par. 7

Response: The proposed changes reflect SDG requirements for PT systems and current undocumented processes for PT system reviews and posting of approved drawings.

While researching this response, the following additional proposed changes were identified as being required in order to remove duplications within 462 and with other specs.

462-2 Certification of Post-Tensioning Systems.

Use only post-tensioning systems that are approved by the State Structures Design Office. Manufacturers seeking evaluation of their post-tensioning systems must submit test results to the Structures Design Office and include certified test reports from an independent laboratory audited by AASHTO Materials Reference Laboratory (AMRL) which shows the posttensioning system meets all the requirements specified herein. Test plastic components in a certified independent laboratory accredited through the laboratory accreditation program of the Geosynthetic Accreditation Institute (GAI) or the American Association for Laboratory Accreditation (A2LA). Certification of test reports may be performed by an independent laboratory located outside the U.S., if the independent laboratory is approved by the State Materials Office. If any component of the post-tensioning system is modified or replaced, the appropriate component test and entire system test, if needed, must be retested in accordance with the requirements herein and an updated application made to the Structures Design Office containing the test reports and revised system drawings. Before attempting to change posttensioning system components contact the State Structures Design Office for direction.

~~Perform certification test for the plastic on a sample formed or cut from the finished product. Provide the Engineer with certification that the plastic from the duct sample complies with all requirements of the specified cell class, stress crack rating and the specified amount of antioxidant. Certify to the Engineer that the post tensioning system being furnished is in compliance with all requirements stated herein.~~

Ensure that all components of a system are stamped with the suppliers name, trademark model number and size corresponding to catalog designation. Post-tensioning systems consist of an assembly of components for various sizes of strand or bars assembled and pressure tested. Post-tensioning systems will have to be developed and tested both internal (corrugated duct) and external (smooth duct) applications for each of the following:

Department standard tendon sizes for designing and detailing consist of 0.6 inch diameter strand in anchorages containing 4, 7, 12, 15, 19 and 27 strands; standard bar sizes from 5/8 to 1 3/4 inch diameter. Systems using alternate anchorage sizes and/or strands utilizing 1/2 inch strand and providing equivalent force to these standard sizes may be submitted for approval.

Prior to installing any post-tensioning hardware, furnish the Engineer with a certification from the PT supplier that the PT system chosen for the project meets the requirements of Section 462 and is a Department approved PT system along with a list of the system components and drawings. ~~Upon completion of post tensioning installation, provide a certification that the PT system supplied was installed without modification and met the requirements of the contract documents.~~

462-4.2.5.5 Corrugated Plastic Duct: Do not use ducts manufactured from recycled material. Use seamless fabrication methods to manufacture ducts.

Use corrugated duct manufactured from non-colored, unfilled polypropylene meeting the requirements of ASTM D4101 “Standard Specification for Polypropylene Plastic Injection and Extrusion Materials” with a cell classification range of PP0340B14541 to PP0340B67884. The duct shall be white in color containing antioxidant(s) with a minimum Oxidative Induction Time (OIT) according to ASTM D 3895 of 20 minutes and containing a non-yellowing light stabilizer. Perform ~~OIT~~ tests on samples from the finished product. Furnish duct with a minimum thickness as defined in the following table:

462-4.2.5.6 Smooth Duct: Use smooth duct manufactured from 100% virgin polyethylene resin meeting the requirements of ASTM D 3350 with a minimum cell class of 344464C. Use resin containing antioxidant(s). Perform ~~OIT~~ tests on samples taken from the finished product. ~~resulting in a m~~Minimum Oxidative Induction Time (OIT) according to ASTM D 3895 ~~shall be~~ 40 minutes. Manufacture duct with a dimension ratio (DR) of 17.0 or less as established by either ASTM D 3055 or ASTM F 714 as appropriate for the manufacturing process used.