

EXPECTED IMPLEMENTATION JULY 2010

462 POST-TENSIONING.

(REV 9-3-09) (FA 10-6-09) (7-10)

ARTICLE 462-2 (of the Supplemental Specifications) is deleted and the following substituted:

462-2 Certification of Post-Tensioning Systems.

Use only post-tensioning systems that are approved by the State Structures Design Office and that are shown on the State Structures Design Office's Approved Post Tensioning Systems List website. 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 post-tensioning system meets all the requirements specified herein. Manufacturers must also submit fully detailed drawings showing all components of their post-tensioning systems for posting on the State Structures Design Office's Approved Post Tensioning Systems List website. 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 post-tensioning system components contact the State Structures Design Office for direction.

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.

SUBARTICLE 462-4.2.5.5 (of the Supplemental Specifications) is deleted and the following substituted:

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

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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 tests on samples from the finished product. Furnish duct with a minimum thickness as defined in the following table:

Duct Shape	Duct Diameter	Duct Thickness
Flat	any size	0.08 inch
Round	0.9 inch	0.08 inch
Round	2.375 inches	0.08 inch
Round	3.0 inches	0.10 inch
Round	3.35 inches	0.10 inch
Round	4.0 inches	0.12 inch
Round	4.5 inches	0.14 inch
Round	5.125 inches	0.16 inch
Round	5.71 inches	0.16 inch

SUBARTICLE 462-4.2.5.6 (of the Supplemental Specifications) is deleted and the following substituted:

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 tests on samples taken from the finished product. 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.

Use smooth duct meeting the minimum pressure rating (working pressure) of 100 psi and manufactured to either of the following Specifications: ASTM D 3035 “Standard Specifications for Polyethylene (PE) Plastic Pipe (DR-PR) Based on Controlled Outside Diameter” or ASTM F 714 “Standard Specification for Polyethylene (PE) Plastic Pipe (SDR-PR) Based on Outside Diameter”.