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# Special Provision to Item 426

## Post-Tensioning

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Item 426, "Post-Tensioning," of the Standard Specifications, is hereby amended with respect to the clauses cited below, and no other clauses or requirements of this Item are waived or changed hereby.

**Section 2.2., "Post-Tensioning System."** The second bulleted item is voided and replaced with the following:

Provide pre-packaged grouts in accordance with DMS-4670, "Grouts for Post-Tensioning." Do not use grouts that exceed the manufacturers' recommended shelf life or six months after date of manufacture, whichever is less.

**Section 4.2, "Required Submittals."** The section is voided and replaced with the following.

**4.2 Required Submittals.** Submit information required in this Section for post-tensioned elements, in addition to forming and falsework plans required by Item 420, "Concrete Substructures," and Item 424, "Precast Concrete Structural Members (Fabrication)." Include all necessary construction information in these submittals for cast-in-place and precast construction including, but not limited to the information required in this Section.

**4.2.1 Design Calculations.** Provide design procedures, coefficients, allowable stresses, tendon spacing, and clearances in accordance with the AASHTO LRFD *Bridge Design Specifications* and PTI/ASBI M50 unless otherwise shown on the plans. Submit enough calculations to support the proposed system and method of post-tensioning including friction loss diagrams. When the required jacking force for a particular type of tendon, duct, and configuration is furnished on the plans, design calculations are not required except to adjust for conditions different from those shown on the plans.

**4.2.2 Post-Tensioning Details.** Provide drawings with details that meet the requirements of PTI/ASBI M50 and this specification.

**4.2.3 Grouting Plan.** Submit for approval written grouting procedures at least four weeks before the start of the element's construction. Include items required by PTI M55.

Include the names of people responsible for PT installation and grouting operations, with the foreman of each grouting crew certified as a PTI Level 2 Bonded PT Field Specialist and ASBI Certified Grouting Technician.

**4.2.4 Stressing Safety Plan.** Provide a plan to protect the public, workers, and Department personnel on and around the vicinity where post-tensioning operations are occurring.

Submit for approval a detailed safety plan which identifies potential risk associated with post-tensioning operations, including but not limited to:

- Tendon alignment,
- Temporary shoring,
- Ram operations, and
- Strand anchorage.

**Section 4.3., “Design Calculations.”** The section is voided and replaced with the following.

**4.3 Packaging, Storing, and Handling of Post-Tensioning Components.** Package, store, and handle post-tensioning steel, grout, duct, and other accessories in accordance with PTI/ASBI M50 and PTI M55 unless otherwise indicated. Acceptance and rejection criteria for strand will follow PTI/ASBI M50 and PTI M55.

The following exceptions apply:

- Grout storage onsite will be limited to 30 days unless approval by the Engineer is given in advance of material delivery.
- Install grout caps and ensure vents are closed at all times so that water and other contaminants cannot enter the duct before strand installation.
- Do not flush ducts at any time.

**Section 4.4, “Packaging, Storing, and Handling of Post-Tensioning Components.”** The section is voided and replaced with the following.

**4.4 Duct and Prestressing Steel Installation for Post-Tensioning.** Follow PTI/ASBI M50 for duct and prestressing steel installation procedures and requirements unless otherwise specified. Verify that concrete strength requirements on the plans are met for stressing and staged loading of post-tensioned structural elements.

Stress the tendons within seven days of installing the strand in the ducts unless otherwise approved in advance. Follow the tensioning procedure noted in the approved post-tensioning details.

**Section 4.5, “Duct and Prestressing Steel Installation for Post-Tensioning.”** The section is voided and replaced with the following.

**4.5 Grouting.** Grout in accordance with PTI M55.

Grout within 14 days of tendon stressing unless otherwise specified or approved. Obtain approval to extend the grouting time before stressing tendons.

Do not allow the grout temperature to exceed 85°F during mixing and pumping. Do not grout when the ambient temperature is below 35°F. Field-test the grout in accordance with Table 1 during grout installation. Perform field-testing by trained personnel at the Contractor’s expense while witnessed by the Engineer. Pump at the lowest pressure possible that will maintain a continuous flow of grout.

Table 1

## Requirements for Field-Testing of Grout

Test	Frequency	Requirement
Schupak Pressure Bleed Test (ASTM C1741)	1 per day	per <a href="#">DMS-4670</a>
Fluidity test ( <a href="#">Tex-437-A</a> , Method 2)	2 every 2 hr. 2 min. per day	per <a href="#">DMS-4670</a>
Compressive Strength test (3" × 6" cylinders)	1 per day	per <a href="#">DMS-4670</a>
Mud Balance test ( <a href="#">Tex-130-E</a> , Part II) <sup>1</sup>	2 per day	per <a href="#">PTI M55</a>

1. Take one sample from the mixer and one sample from the farthest duct outlet.
2. Verify wet density is within the range established by the department.

**Section 4.6., "Grouting."** The section is voided and not replaced.