

Section 50 Prestressing Concrete

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Section 50 Prestressing Concrete

4-5001 General

Section 50, “Prestressing Concrete,” of the *Standard Specifications* includes specifications for prestressing precast or cast-in-place concrete by tensioning prestressing steel. For detailed information regarding prestressed concrete, refer to Section 50, “Prestressing Concrete,” of Structure Construction’s *Bridge Construction Records and Procedures Manual, Vol. 2* and *Prestress Manual*:

<https://dot.ca.gov/programs/engineering-services/manuals>

4-5002 Before Work Begins

To comply with Section 5-1.23, “Submittals,” of the *Standard Specifications*, the contractor must submit for authorization the shop drawings of the proposed prestressing system. The shop drawings are submitted directly to Structure Design’s Documents Unit, as specified in Section 50, “Prestressing Concrete,” of the *Standard Specifications*. The review of the working drawings is a coordinated effort between Structure Design and Structure Construction. Structure Design has the primary responsibility for authorizing the shop drawings.

Before work begins, take the following steps:

- Verify the receipt and proper distribution of Form DOT CEM-3101, “Notice of Materials to Be Used,” and make sure it includes information on prestressing materials. Refer to Section 6-202, “Responsibilities for Acceptance of Manufactured or Fabricated Materials and Products,” of this manual for additional information.
- Review the *Prestress Manual* for instructions on prestressing records to keep during prestressing operations.
- Before the contractor’s operations begin, review both sources of information in a tailgate safety meeting.

4-5003 During the Course of Work

Prestressing operations are dangerous. The *Prestress Manual* contains safety information for prestressing operations. Additional safety information can be found in Structure Construction’s *Code of Safe Practices* and is available by clicking on the Safety tab at:

<http://des.onramp.dot.ca.gov/structure-construction>

After completing the work for each structure, the contractor must electronically submit corrected as-built drawings to the resident engineer for transmittal to Structure Design’s Documents Unit. Remind the contractor that final contract acceptance will not occur until the corrected as-built drawings have been submitted.

4-5004 Quality Control

Guidance for quality control activities included in this section is summarized as follows:

- Verify that the contractor is complying with the authorized grouting plan and they are submitting daily grouting reports.
- Verify that the contractor has calibrated their jacking equipment within a year of use or after repair.
- Verify that the contractor has pressure tested the ducts for post-tensioned concrete bridges.
- Verify the qualifications of contractor's personnel performing post-tensioning.
- Witness the contractor's demonstration that prestressing steel in ducts is unbonded or that ducts are unobstructed if prestressing steel has not yet been installed.
- Witness the contractor's voids investigation of grouted ducts.

4-5005 Payment

The contract price for furnishing precast members includes payment for prestressing precast concrete members. Prestressing cast-in-place concrete is paid for as a lump sum price. For guidelines for making monthly progress payments for prestressing cast-in-place concrete, refer to Bridge Construction Memo C-9, "Preparation of Progress Payment Documents," of Structure Construction's *Bridge Construction Records and Procedures Manual, Vol. 1*:

<https://dot.ca.gov/programs/engineering-services/manuals>