



Prestressing Concrete – General – Construction – General

Revision and Approval

| Revision | Date | Nature of Changes | Approved By |
|----------|------------|-------------------|--------------|
| 0 | 11-16-2018 | Original issue. | Steve Altman |
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Background

Prestressing concrete is a major component of structure construction work. This process establishes Structure Construction (SC) responsibilities and procedures for general construction of prestressing concrete work, including:

1. Authorization of partial prestressing of precast concrete members.
2. Placement and protection of prestressing steel.
3. Protection of epoxy-coated prestressing strand.
4. Prestressing duct placement.
5. Placement of duct vents.

The prestressing operation for pre-tensioned and post-tensioned members is performed per [BCM 50-1.03B](#), *Prestressing Concrete – General – Construction – Prestressing*.

Review and authorization of partial prestressing of precast concrete members under this process is usually performed in conjunction with Materials Engineering and Testing Services (METS) and coordinated with the METS Representative.

Process Inputs

1. Authorized prestressing submittals per [BCM 50-1.01C](#), *Prestressing Concrete – General – Submittals*.
2. Authorized prestressing materials per [BCM 50-1.02](#), *Prestressing Concrete – General – Materials*.

3. Epoxy coated strand per the [2015 Standard Specifications \(SS\)](#)¹
4. Ducts per 2015 SS²
5. Vents per 2015 SS³
6. [Form TL-28](#), *Notice of Materials to be Inspected at Job Site*
7. [Form TL-29](#), *Report of Inspection of Material*

Procedure

1. All work associated with this process is charged as [Project-Direct – Construction](#).
2. Inspection of field work for this process is:
 - a. [Intermittent](#) for placement of prestressing ducts, vents, and prestressing strands.
3. Before construction begins:
 - a. For precast members:
 - i. Coordinate with the METS Representative to verify:
 1. Epoxy-coated strand is protected and repairs to damaged coatings are performed.
 2. Whether partial prestressing will be allowed prior to the precast member attaining the required concrete strength.
 3. Whether precast members that have been partially prestressed can be moved.
 - b. For post-tensioned members:
 - i. Verify prestressing materials delivered to the job site are authorized for use including:
 1. Field authorize materials included on [Form TL-0028](#), *Notice of Materials to be Inspected at Job Site*.
 2. Collect orange tags for materials included on [Form TL-0029](#), *Report of Inspection of Material*.
4. During construction:
 - a. Verify ducts and vents are placed in accordance with the requirements of the authorized shop drawings and the contract documents:
 - i. Refer to Caltrans [Prestress Manual](#), Section 3, *Prestressing Ducts* and Appendix C, *Inspection Checklist*.
 - b. Verify prestressing steel is protected from corrosion:

¹ 2015 SS, Section 50-1.03A(2), *Prestressing Concrete – Construction – Epoxy-Coated Strand*

² 2015 SS, Section 50-1.03A(3), *Prestressing Concrete – Construction – Ducts*

³ 2015 SS, Section 50-1.03A(4), *Prestressing Concrete – Construction – Vents*

- i. Refer to *Prestress Manual*, Section 4, *Prestressing Strands/Bars* and Appendix C, *Inspection Checklist*
- c. When corrosion inhibitor is used, refer to the manufacturer recommendation for dosage.
- d. Verify prestressing steel is protected from electric welding operations. Refer to [Attachment 1](#), *Electric Welding of Prestressing Strands*.
- e. Document all inspection, construction, and quality assurance activities in the Daily Reports per [BCM C-4.04](#), *Daily and Weekly Reports*.
- f. Document and notify the Contractor of all non-conformances.

Process Outputs

- 1. Daily reports
- 2. Authorized prestressing materials incorporated into the work
- 3. Complete field release form CEM-4102, *Material Inspected and Released on the Job*; [Form TL-0028](#), *Notice of Materials to be Inspected at Job Site* and [Form TL-0029](#), *Report of Inspection of Material*:

Attachments

[Attachment 1](#), *Electric Welding of Prestressing Strands*