Rock Products Committee
SCOPING DOCUMENT
Precast Stress Jack Requirements
July 1, 2014

Task Group

Concrete Task Group

Problem Process

☒ Annual
☐ Expedited
☐ Emerging Initiative

Title

Update Precast Stress Jack Requirements in Specifications

Issue/Problem Statement

1. Specifications are inconsistent with current Caltrans and Industry practice for calibrating stressing equipment used in Precast concrete manufacturing plants.
2. Equipment requirements are inconsistent with current equipment produced for use in Precast concrete manufacturing plants.

Background

Current specifications require that each jack used to tension prestressing steel permanently anchored at 25 percent or more of its specified minimum ultimate tensile strength must be calibrated by METS within 1 year of use and after each repair. However, this specified procedure causes unnecessary resource impact to the Department due to the following reasons:

- Shipping of pretensioning jacks to the Department's Translab takes system out of commission for an extended period of time.
- Shipping of pretensioning jack system back to the precast facility could result in increased risk of calibration errors while in transit.
- Quality control inspection and Department verification of elongation at precast facilities has been effective in preventing issues related to calibration.
- There would be much ambiguity for Transportation Agencies performing quality assurance while using this current Department specification for projects on the State Highway System.

Per Department Memorandums from November 1999 and May 2000, current practice allows third party calibration of stressing equipment with Caltrans observation. Current equipment requirements in the specification also need to be reviewed and updated to be consistent with current technology.

Purpose

Updating this specification will provide clear guidelines in the specifications consistent with current practice. Removing the requirement for METS calibration of jack equipment will help ensure accurate calibrations and will eliminate unnecessary costs to both Caltrans and Industry. Reviewing and updating equipment requirements, including digital and jack-integrated gauges, will assure that the specifications are consistent with modern technology while maintaining the desired accuracy.

Objectives/Deliverables

The objective is to update the specifications to be consistent with current best practice, while assuring that the stressing equipment used in Precast concrete manufacturing plants will provide the necessary accuracy to produce quality products that meet finished product design requirements.

The deliverables for this activity are as follows:

- Review existing specifications and best practices to assure that the proposed change will provide the necessary accuracy to assure quality products are produced that meet product design requirements.
- Revise specification Section 50-1.01D(3) Equipment and Calibration. Gather and compile feedback from all necessary parties.
- Advise on the applicability of these specifications to post tensioning jack calibration.
- Finalize the specifications and publish

Timeline

Gather information regarding equipment currently in use	1 September 2014
Draft specification updates	1 December 2014
Gather and compile feedback and responses	1 February 2015
Finalize specification and route for Stakeholder approval	1 April 2015
Publish specification updates	30 June 2015

Benefits

The change to the specification will remove unnecessary specification requirements while providing the required Precast product quality for PC PS concrete products produced in a Precast concrete manufacturing plant.

Impacts

This proposal will reduce impacts to policy, specifications, and practices. This will benefit all stakeholders including Industry by avoiding costly and possibly unnecessary requirements for fabricating PC PS concrete products.

Stakeholders:

- Division of Construction
- Division of Design
- DES – METS
- DES – Structure Design
- DES – Structure Policy and Innovation
- Office Engineer
- Maintenance/ Pavement Program
- Industry
- FHWA (High-profile project change orders with altered language or that require time extensions will need FHWA approval)

Resource Requirements

Caltrans:

DES METS:	0.10 PY
Construction:	0.10 PY
District:	0.10 PY
OE	0.10 PY
Industry:	0.15 PY
FHWA:	0.05 PY
Legal	0.05 PY

Impediments to Completion of Deliverables

None expected

Recommendation and Approval

This scoping document to Update Precast Stress Jack Requirements in Specifications was prepared by Concrete Task Group to address a priority issue that has Statewide significance and is within the Rock Products Committee mission. The Task Group Co-Chairs have determined the scope, resources required and timeline for delivery of this project to ensure that the deliverables are achievable in a timely manner.

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Approval Date: 6/23/14