

Memorandum

*Serious drought.
Help Save Water!*

To: DEPUTY DISTRICT DIRECTORS, Construction
DEPUTY DIVISION CHIEF, Structure Construction
CONSTRUCTION MANAGERS
SENIOR CONSTRUCTION ENGINEERS
RESIDENT ENGINEERS

Date: October 11, 2016

File: Division of Construction
CPD 16-13

From: RACHEL FALSETTI, Chief
Division of Construction



Subject: Bridge Deck Crack Prevention

This directive allows for implementing new specifications to prevent premature bridge deck cracking. Structure Maintenance & Investigations estimated the California Department of Transportation spends \$50,000,000 annually on sealing deck cracks. To prevent early-age bridge deck cracking, the Concrete Committee and the Bridge Preservation Committee, over a 14-year period, have developed new construction specifications for concrete bridge decks, including deck overlays.

The new specifications include:

- Limiting the 28-day shrinkage performance of the deck concrete to 0.032 percent.
- Requiring a minimum dosage of shrinkage reducing admixture.
- Requiring polymer fibers in deck concrete.
- Revising the concrete deck curing specifications.

The attached memorandum from the State Bridge Engineer dated August 11, 2016 describes the recommendation that these specification changes be incorporated by change order for ongoing construction projects where administratively possible.

This change will require a new concrete mix design, addition of polymer fibers, and use of shrinkage reducing admixture for bridge deck concrete which will result in increased cost for this change. If the bridge deck concrete placement affects the controlling activity, contract time adjustment may be required for performing concrete shrinkage performance testing and for compressive strength testing for bridge deck concrete that is designated by compressive strength.

A sample change order memorandum, sample change order, and a Federal Highway Administration (FHWA) blanket prior approval for implementing construction specifications to prevent bridge deck cracking are attached to this directive. This directive serves as the delegation of authority from the Division of Construction and approval from FHWA for this change order, except when any of the following apply to the change order:

1. The language is altered.

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2. The total absolute value exceeds \$200,000.
3. Contract time is extended by more than 40 days.

If you have any questions or comments regarding this directive, contact Richard Yates, Structure Construction, at richard.yates@dot.ca.gov or (916) 227-8984, or Jim Cotey, Division of Construction, at jim.cotey@dot.ca.gov or (916) 227-5709.

- Attachments:
1. Sample CEM-4900, “Change Order Memorandum”
 2. Sample CEM-4903, “Change Order”
 3. Change Order Attachment—Bridge Deck Crack Prevention Specifications
 4. Division of Engineering Services Memorandum, “Construction Specifications for Bridge Deck Crack Prevention,” dated August 11, 2016
 5. FHWA Form CA-358 (c), “Record of Blanket Prior Approval for Major Contract Change Order”