

Memorandum

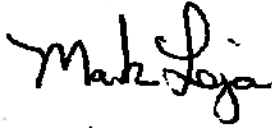
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To: DEPUTY DISTRICT DIRECTORS, Construction
DEPUTY DIVISION CHIEF, Structure Construction
CONSTRUCTION MANAGERS
SENIOR CONSTRUCTION ENGINEERS
RESIDENT ENGINEERS

Date: June 7, 2012

File: Division of Construction
CPD 12-2

From: MARK LEJA
Chief
Division of Construction



Subject: Contractor Option for Use of Warm Mix Asphalt Technologies in Hot Mix Asphalt

This directive provides guidance for implementing a contractor-requested option to use an approved Warm Mix Asphalt (WMA) technology during Hot Mix Asphalt (HMA) production for ongoing projects that contain HMA Type A, Type B, or RHMA-G specifications. Caltrans has developed a new standard special provision, Warm Mix Asphalt Technology Option, to encourage the use of warm mix asphalt by contractors. The Caltrans approved WMA technologies are available at the website:

http://www.dot.ca.gov/hq/esc/approved_products_list/

WMA is defined as HMA produced at temperatures no greater than 275°F. When WMA technologies are used to aid mixing and compaction of HMA produced at temperatures greater than 275 °F, it is defined as HMA with WMA technology. The contractor-option specification allows a contractor to use either WMA technology to produce HMA at lower temperatures which reduces HMA plant fuel consumption and plant emissions during HMA production, or HMA with WMA technologies to aid in HMA mixing in the plant and HMA compaction in the field.

Some contracts currently require a contractor to produce HMA with approved WMA additive technology. This directive does not apply to projects where the required use of a warm mix technology is included in the contract special provisions. A contractor's request to substitute WMA foaming technology for a WMA additive technology on contracts using HMA with required use of WMA technology must not be authorized by the resident engineer.

Procedure for Implementing New Specification on Ongoing Projects

If the contractor requests to use WMA technology for HMA Type A, Type B, or RHMA-G, issue a change order to allow the use of WMA following the requirements of the new specification (see attached).

- For ongoing projects that do not have an approved Job Mix Formula (JMF), the contractor must meet all of the requirements in the WMA specification.
- For ongoing projects that have an approved JMF the following applies:
 - Contractor must submit a new JMF with the submittals as detailed in the specification.
 - For WMA water injection foam technology, the contractor is not required to do a new mix design using the WMA foaming technology.
 - For WMA additive technology, in lieu of performing a new mix design, the contractor may produce quality characteristics test results for the submitted JMF, as specified in Section 39-1.03B of the *Standard Specifications*, except that the tests are performed at the mix design

Optimum Bitumen Content as shown on form CEM-3512, “Contractor Hot Mix Asphalt Design Data.”

- JMF verification is required prior to use of WMA on the project.
- A production start-up evaluation is not required when a new JMF with WMA is used on the project. For Standard and QC/QA construction process projects with compaction requirements, verify compaction on the first day of production of WMA on the project to ensure that the contractor is meeting compaction requirements with the chosen WMA technology.

For quality control during production, ensure the contractor performs the following additional required tests:

- AASHTO T 324 (Modified) Hamburg wheel track test. Ensure the contractor submits the test results and tested sample set within 7 days of sampling.
- California Test 371 tests for dry strength and tensile strength ration are required at a frequency of every 10,000 tons of HMA production.

For HMA with WMA technology placed under the method construction process or when method compaction is required for HMA placed under the Standard or QC/QA construction process, WMA production, transporting, spreading, and compacting temperatures must comply with the requirements of Section 39, “Hot Mix Asphalt,” of the *Standard Specifications*.

For HMA with WMA technology placed under the Standard or QC/QA construction process, WMA must be produced at a temperature between 240°F and 325°F. For WMA placed under the Standard or QC/QA process when method compaction is not required, the contractor determines transporting, spreading, and compacting temperatures.

There should be no cost or credit to the state for implementing the contractor-initiated change order. No extension of contract time should be included in the change order. A sample change order memorandum, sample change order, change order attachment—WMA specification, and a Federal Highway Administration blanket prior approval for using warm mix asphalt technology are attached. This directive serves as delegation of authority from the Division of Construction and the Federal Highway Administration for change orders, when implemented under its requirements.

If you have questions about warm mix asphalt, please contact Kee Foo, Division of Maintenance, at (916) 274-6077 or kee_foo@dot.ca.gov, or Chuck Suszko, Division of Construction, at (916) 227-7314 or chuck_suszko@dot.ca.gov.

- Attachments:
1. Contractor Option for Use of WMA Technologies in HMA—Sample Contract Change Order Memorandum
 2. Contractor Option for Use of WMA Technologies in HMA—Sample Contract Change Order
 3. Contractor Option for Use of WMA Technologies in HMA—Change Order Specification Attachment
 4. FHWA Form CA-358 (c), “Record of Blanket Prior Approval for Major Contract Change Order”