

## DEPARTMENT OF TRANSPORTATION

**Memorandum**

*Making Conservation  
a California Way of Life.*

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

**Date:** August 21, 2024

**File:** Division of Construction  
CPD 24-6



**From:** RAMON HOPKINS, Chief  
Division of Construction

**Subject: POST-PRODUCTION GRADATION OF AGGREGATES FOR HMA**

This directive provides guidance to resident engineers for implementing new post-production gradation (PPG) specifications for controlling the aggregate gradation in hot mix asphalt.

Current Caltrans specifications use pre-plant aggregate samples to control the aggregate gradation of hot mix asphalt (HMA). This contrasts with the remaining HMA acceptance criteria which use post-production samples for mix volumetrics, tensile strength, rutting, and dust to asphalt ratio. During HMA production, aggregates breakdown and this affects aggregate gradation. The degree of aggregate breakdown depends on the thermal and mechanical stresses exerted on the aggregate during production. In addition, when the HMA contains reclaimed asphalt pavement (RAP), a mathematical calculation is used to determine the combined gradation of the virgin and RAP aggregates, whereas the PPG specifications provide a more realistic representation of the post-production aggregate gradation.

The Pavement and Materials Partnering Committee formed a Work Product Group (WPG), comprised of Industry representatives and Caltrans. The WPG conducted a literature review of relevant research and other states' Department of Transportation practices, and identified a test method to measure aggregate gradation after HMA production (post plant). The group developed a PPG nSSP, conducted a pilot study, modified the nSSP, and finally developed a standard specification for PPG.

The WPG has developed new specifications to control aggregate gradation. These specifications use AASHTO T 308, "Standard Method of Test for Determining the Asphalt Binder Content of Asphalt Mixtures by the Ignition Method," and AASHTO T 30, "Standard Method of Test for Mechanical Analysis of Extracted Aggregate," for post-

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production aggregate gradations. The new specifications for PPG will be included in the *Standard Specifications* to be published on October 21, 2024.

For current projects that do not include the October 21, 2024 *Standard Specifications*, the contractor may request to use the PPG specifications by submitting a no-cost change order request to the resident engineer.

Additionally, the contractor can request a no-cost change order to use the Hot Mix Asphalt Job Mix Formula, approved with AASHTO T 27, on the projects with PPG specifications that use AASHTO T 30.

Attached to this directive are sample change order memorandums, sample change orders, and revised parts of Section 39, "Asphalt Concrete," of the *Standard Specifications*. This directive serves as delegation of authority from the Division of Construction for change order approval, except when change order language is altered.

If you have questions or comments regarding this directive, contact Raghu Thangavelautham, Division of Construction, at [Raguparan.Thangavelautham@dot.ca.gov](mailto:Raguparan.Thangavelautham@dot.ca.gov) or (916) 764-8496.

Attachments:

1. Sample Form CEM-4903, "Change Order Memorandum" HMA JMF
2. Sample Form CEM-4900, "Change Order" HMA JMF
3. Sample Form CEM-4903, "Change Order Memorandum" PPG
4. Sample Form CEM-4900, "Change Order" PPG
5. Change Order Pages 2 and 3