

# Memorandum

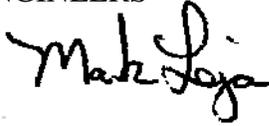
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**To:** DEPUTY DISTRICT DIRECTORS, Construction  
DEPUTY DIVISION CHIEF, Structure Construction  
CONSTRUCTION MANAGERS  
SENIOR CONSTRUCTION ENGINEERS  
RESIDENT ENGINEERS

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**File:** Division of Construction  
CPD 11-4

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Chief  
**Division of Construction**



**Subject:** Smoothness Specification Requirements for Thin Hot Mix Asphalt Overlays

Section 39, "Hot Mix Asphalt," (HMA) of the *Amendments to the 2006 Standard Specifications* requires that HMA overlays with planned thickness of less than 0.25 foot meet the must-grind smoothness requirement of no deviations exceeding 0.3 inches in height within 25 feet of roadway. Deviations in pavement surface that affect smoothness include both dips in the pavement profile and bumps. Bumps are typically corrected by grinding the pavement surface, while dips may require other corrective work.

Since the smoothness of the underlying pavement surface may affect the smoothness of the finished pavement, contractors should not be responsible for the cost of meeting the must-grind smoothness requirement for the finished pavement when they place a thin overlay of less than 0.25 foot on a rough or bumpy existing pavement that does not meet the must-grind requirement before HMA overlay placement.

Caltrans has developed new standard special provision (SSP) 39-025, "Prepaving Must-Grinds," that requires the contractor to profile the existing pavement, determine locations of must-grinds, and notify the resident engineer of must-grinds that grinding cannot correct. The resident engineer may order extra work to correct those locations. The SSP requires the contractor to correct prepaving must-grinds by grinding before placing an overlay. Two contract bid items, Prepaving Profilograph and Prepaving Grinding Day, are included in the SSP for prepaving must-grinds work.

This directive allows for implementing the new requirements for prepaving smoothness in SSP 39-025 for ongoing projects and provides direction on how to address pre-existing must-grinds on existing pavement before the placement of HMA with a planned thickness of less than 0.25 foot when no leveling course of HMA is specified for the project.

## Existing Specification

Section 39-1.12, "Smoothness," of the *Amendments to the 2006 Standard Specifications* requires that the contractor determine the smoothness of the finished HMA surface with a profilograph and a straightedge. The profilograph has been used to determine the locations of must-grinds (deviations exceeding 0.3 inch within 25 feet length of roadway) and to determine a profile index (measurement of pavement roughness). The contractor has to repair the must-grinds in accordance with Section 39-1.12D, "Smoothness Correction," of the *Amendments to the 2006 Standard Specifications*.

### **Procedure for Implementing New Specification on Ongoing Projects**

If the contractor believes that the surface of the existing pavement is too rough and may have existing must-grinds that cannot be corrected by the automatic screed controls of the paver and planned HMA overlay thickness, the contractor may request a change order to produce profilograms for the existing pavement.

The resident engineer will issue a contractor-requested change order authorizing the contractor to perform California Test 526, "Operation of California Profilograph and Evaluation of Profiles," on the existing pavement to determine the presence and locations of must-grinds before placement of the thin HMA overlay. The change order will compensate the contractor for the cost of necessary traffic control and performing California Test 526 on the existing pavement surface. If work completion is delayed because of the change order work, adjust payment and contract time under Section 8-1.09, "Delays," of the *Amendments to the 2006 Standard Specifications*.

Upon completion of profiling, the resident engineer must ensure that the contractor provides the following:

- Written notification to the resident engineer of roadway locations with deviations exceeding 0.3 inch in height within 25 feet length of pavement and the respective height and length of those deviations.
- A cost estimate for correcting areas with deviations exceeding 0.4 inch in height within 25 feet length before HMA overlay.
- Prepaving profilograms.

The resident engineer reviews the information provided by the contractor to determine the severity of the must-grinds on the existing pavement surface and whether a supplemental change order is necessary.

### **Supplemental Change Order**

Based on the severity of the must-grinds and available contract contingency funds, the resident engineer chooses one of following options:

#### *Option A*

It is preferable to correct the existing pavement must-grind corrections before HMA overlay placement, but—based on the additional cost of mobilizing the profile grinder and potential delays to the project—it is acceptable to correct the locations with existing pavement must-grind by bump-grinding the completed HMA surface. When contract contingency funds are available to address existing pavement must-grinds, the resident engineer writes a change order to correct existing pavement locations identified on the prepaving profilogram that do not meet the must-grind deviation requirement of 0.4 inch within 25 feet.

Compensation for change orders for smoothness correction should be paid in accordance with Section 4-1.03D of the *Standard Specifications*. The change order should include profile grinder mobilization, grinding time, pavement profilographing to indicate must-grinds have been removed, and necessary traffic control. If must-grinds are the result of dips in the existing roadway, the change orders should include HMA leveling to correct the dips rather than grinding the must-grind at each end of the dip. If must-grinds are the result of a failed structural section in the existing roadway, the

