



**What's Revised in  
Section 39  
2008 – 2009**

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**“Hot Mix Asphalt”**

**Revisions All Ready?**





# 2009 Revisions

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- ***Tack Coat***
  - ✓ Bid Item
  - ✓ Dilution guidelines/requirements
  - ✓ Omit tack coat between layers of new HMA during the same work shift if:
    - *No dust, dirt, or extraneous material is present*
    - *The surface is at least 140 °F*
- ***Data Cores***
  - ✓ For Information **ONLY**
  - ✓ Build database for PMS



# 2009 Revisions

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- ***Asphalt Rubber Binder***
  - ✓ Returned lowest temperature to 375° F
  - ✓ Return to previous temperatures
  - ✓ Design Profile must conform to Specifications  
(RHMA-TG will discuss)
- ***Defined Manufactured Sand***
  - ✓ “fine aggregate produced by crushing rock or gravel”
  - ✓ <10% Sand – Waive FAA



# 2009 Revisions

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- ***Added new HMA sampling sites***

- ✓ Contractor – QC

- *The plant*
- *A truck*
- *A windrow*
- *The paver hopper*
- *Behind the paver*

- ✓ Engineer - Acceptance

- *The plant*
- *A truck*
  
- *Behind the paver*

- ***JMF Renewal***

- ✓ Previously verified JMF
- ✓ No changes in mix design or materials
- ✓ Contractor verifies prior to submittal
- ✓ Engineer verifies
- ✓ No adjustments allowed



# 2009 Revisions

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- ***Production Start-Up Evaluation***
  - ✓ Contractor & Engineer test split samples
  - ✓ Contractor waits for results
    - *Proceed at own risk*
- ***QC Plans***
  - ✓ Required for QC/QA **& Standard** projects
  - ✓ Contractor submits for QC/QA & Standard
  - ✓ Engineer reviews for QC/QA & Standard



# 2009 Revisions

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## *Remaining Issues*

- ***Internal Caltrans Issues***
  - ✓ QC/QA vs. Standard
  - ✓ Standard vs. Method
  - ✓ Method vs. Commercial
- ***CT 371 – Moisture Testing***
  - ✓ CT371 pilot
  - ✓ Interim Guidelines
  - ✓ District waivers



# 2009 District SSPs

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- *D01 – Mat'l Transfer Vehicles (MTV)*
- *D02 – Lime Marination  
TSR=80*
- *D06 – Durability (coarse & fine)  
Lime Marination*
- *D07 – CT371 determines treatment*
- *D08 – Lime marination in High Desert*



# New SSPs

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- ***HMA Type C***
  - ✓ Intersections
  - ✓ Heavy loads
  - ✓ Turning & Stopping (termini)
- ***Bonded Wearing Course***
  - ✓ 4 Types
    - *BWC – PM – GG*
    - *RHMA – G*
    - *OGFC – PM*
    - *RHMA – O*
  - ✓ Potentially “Proprietary”



# New SSPs

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- *Micro-surfacing*
- *Full-Depth Cold Foam Recycling*
- *Cold In-Place Recycling (nSSP)*
- *Hot In-Place Recycling (nSSP)*
- *Pulverization*



## Section 39

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# “Hot Mix Asphalt” 2008 & 2009





# ***Special Provisions Specify:***

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- Construction process  
*(Standard, Method, and QC/QA)*
- Type of HMA  
*(Type A or B, RHMA-G, OGFC)*
- Aggregate gradation (size)
- Asphalt binder grade



# **Standard Construction Process**

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## ***Applies to majority of projects***

- Contractor QC plan
- Clearly stated QC test requirements
- Density if total thickness  $\geq 0.15$ -ft
  - ✓ *Default to “Method Compaction” if  $< 0.15$ -ft*
- Caltrans tests all quality requirements
- Caltrans results used for acceptance and pay



# **Method Construction Process**

## **Applies to very small quantities**

- Contractor will not perform QC
- Compaction by method
  - ✓ *Prescribed roller procedure*
  - ✓ *Minimum temperatures*
- Caltrans tests all quality requirements
- Caltrans results used for acceptance and pay



# QC/QA Construction Process

**Applies to Type A, B & RHMA-G  $\geq 10,000$  tons**

- ✓ *Detailed Contractor QC plan*
- ✓ *Clearly stated QC test requirements*
  - Gradation and % binder for each 750 tons (sublot)
  - Other qualities at required intervals
- ✓ *Density if total thickness  $\geq 0.15$ -ft*
  - Compaction defaults to “Method” if  $< 0.15$ -ft
- ✓ *Caltrans tests all quality requirements*
  - Verify gradation and % binder once for every 5 QC tests
- ✓ *Statistical eval. for gradation, % binder, and density*
  - Cores for density (average of 3 cores per 750 tons)
  - CT results for other qualities used for acceptance & pay



# *Aggregate Gradation*

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- TV  $\pm$  tolerance  
(Not Operating Range and Contract Compliance)
- 3 X MNAS for layer thickness if  
compaction is required  
(Recommended even if compaction is not required)



## *Mix Designs by Contractor*

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*[For all processes (except OGFC)]*

- Establishes JMF
- Verified on plant mix
- Good for 12 months year
- Evaluated in the first 750 tons on each project (Production Start-Up Evaluation)
  - ✓ Documented on Form *CEM-3703*



# *JMF Forms*

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**CEM-3511** – *Contractor JMF*

**CEM-3512** – *Contractor mix design*

**CEM-3513** – *Caltrans verification*

**CEM-3514** – *Contractor JMF renewal*



# JMF

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- The Engineer reviews each JMF in 5 days from the complete JMF submittal (paper review)
- The Engineer verifies each JMF from samples taken from the HMA plant used within:
  - ✓ *20 calendar days from the complete JMF submittal (paperwork + samples)*
  - ✓ *3 business days for RHMA-G from the complete JMF submittal*
    - *If Contractor requests and paving is controlling item of work*



# ***Materials Plant Quality Program***

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- Plants will be reviewed and certified
  - ✓ *Annually for batch plants*
  - ✓ *Semiannually for continuous plants*
- MPQP includes:
  - ✓ *CT 109, Weights and Measures*
  - ✓ *Safety inspections*
  - ✓ *Production requirements from old Section 39*



# *Instructions to Acceptance Engineer*

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HMA must meet all quality requirements throughout production and placement

- *Sample frequently (1 sample per 750 tons)*
- *Sample randomly*
- *Report acceptance test results within 3 business days (Construction Manual)*
- *If out-of-spec then Engineer tests remaining samples to identify extent of problem*
- *Maintain samples for 5 days from notifying Contractor of results*



# ***HMA Must Meet All Requirements***

***[Throughout Production and Placement]***

- First out of spec = Contractor fix (anomaly?)
- Second out of spec (in general):
  - ✓ *Stop production*
  - ✓ *Take corrective action*
  - ✓ *Demonstrate compliance with specifications before resuming placement on the State highway*



## ***In-place & Out-of-spec***

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***Engineer determines status on case-by-case basis***

- Pay deduction defined for density in Standard; all other qualities are reject
- Pay adjustment for gradation, % binder, and density in QC/QA, all other qualities are reject



# *Caltrans will measure density*

*[1 core per 250 tons of HMA]*

## Compaction requirements:

- 91% - 97% MTD for Standard  
(1 core per 250 tons of HMA)
  - ✓ *Penalty table for 89% - 91% and 97% - 99%*
- No density requirement for Method
- 92% - 96% MTD for QC/QA  
(Average of 3 cores per 750 tons of HMA)
  - ✓ *Pay factor based on statistical analysis*



# Questions?

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**Thank you for inviting me**