

Business Not as Usual!! Caltrans New HMA Section 39 How will it affect you?

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Caltrans New Section 39

- Amendments to May 2006 Std. Spec.'s
- Original changes - July 31, 2007
- Additional changes - March 21, 2008 and April 4, 2008
- Latest revision June 5, 2009
- Plain Language
- Use for all HMA projects

New Section 39 Outline

- General (type, & process)
- Materials
- Mix Design (JMF)
- Contractor Qc
- Acceptance
- Dispute Resolution
- Production Startup
- Production
- Subgrade, Tack Coat, Geo.
- Spread. & Compact. Equip
- Trans., Spread. & Compact.
- Smoothness
- Misc. Areas
- Rumble Strip
- Standard
- Method
- Qc/Qa
- Measurement & Payment

New Format - 3 Processes

- Standard
 - For most projects (not meeting the requirements for method or Qc/Qa)
- Method
 - For small projects and miscellaneous areas
- Qc/Qa
 - For large projects $\geq 10,000$ tons

Section 39

“Hot Mix Asphalt”
2007 - 2009

Special Provisions Specify:

- 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

- *Applies to majority of projects*
 - Contractor QC plan
 - Clearly stated QC test requirements
 - Density if total thickness ≥ 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 ≥ 0.15 -ft
 - Compaction defaults to “Method” if < 0.15 -ft
- Caltrans tests all quality requirements
 - Verify grad. 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 accept. & pay

Qc/Qa - Contractor Qc

- Qc Plan
- Qc - Inspect. Sampling and Testing (table)
- Charts and Records
- Records of Inspection And Testing
- Statistical Evaluation(Q_U Q_L tables)
 - Quality Factors

Aggregate Gradation

- 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

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

- **CEM-3511** – Contractor JMF
- **CEM-3512** – Contractor mix design
- **CEM-3513** – Caltrans verification
- **CEM-3514** – Contractor JMF renewal

JMF

- 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

- 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

- 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 investigate
- 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

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*

What's Revised in Section 39 2008 – 2009

“Hot Mix Asphalt”

2009 Revisions

- *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

- *Asphalt Rubber Binder*
 - ✓ Returned lowest temperature to 375° F
 - ✓ Return to previous temperatures
- *Defined Manufactured Sand*
 - ✓ “fine aggregate produced by crushing rock or gravel”
 - ✓ <10% Sand – Waive FAA

2009 Revisions

- *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

- *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

- *Remaining Issues*
- *Local Agency Use*
 - ✓ QC/QA vs. Standard
 - ✓ Standard vs. Method
 - ✓ Method vs. Commercial
- *CT 371 – Moisture Testing*
 - ✓ CT 371 pilot
 - ✓ Interim Guidelines
 - ✓ District waivers

New 2009 Section Issues

- Inconsistent mix properties (Hveem compactor)
- Statistical verification issues (w/rev. Qc/Qa)
- Problems controlling mix volumetrics (cold feed gradings)
- Base mix design on washed gradings
- Smoothness specs
- RHMA binder profile requirements
- MPQP issues

New 2009 Section Issues

- Base binder requirement for OBC for OGAC
- Replacement equipment for Hveem mix design (CA kneading compactor, Stabilometer, etc.)
- Difference between Caltrans/Contractor test results (mix verification and production samples)
- Caltrans turn around time for RHMA mix design, mix verification and other test results

Summary

- There is a new Section 39
- It is not business as usual
- Don't cut and paste
- Understand the entire spec before using it
- Industry continues to partner with Caltrans on issues
- Cal APA is here to help!

Thank you



Questions?