

# Joint AASHTO-ASTM Task Group on Harmonization of Cement Specifications

*AASHTO Report  
August 4, 2008*

# Objectives - Update

- Task Group Background and Mission
- Progress to date
- Current activities
  - TG recommended TS3a motions
- Future

# Task Group Background

## ■ Formed Summer 2003

- AASHTO SOM Technical Section 3A
- ASTM Committee C01
- 20+ regular participants / Experts

## ■ Goal:

To consider existing significant differences between ASTM C 150 and AASHTO M 85 and to develop recommendations for having equivalent requirements in these two cement standards.

# Progress to date

- Max fineness limit
  - M-85 limit increased, C-150 limit established
- Max  $C_3S$  for Type II in M-85 replaced with Heat of Hydration related limits
  - Both standards now limit HOH
- Limestone use (5% max) est. in M-85
- $SiO_2$  limit \*

# Current Activities

- Definition of "sample" in relation to fineness
- Considering appropriateness of alternate Type II designations for Sulfate and HOH
  - To address situations when only one of the two performance criteria are needed
- Table 1, Footnote D revision
- Processing Additions

# TS Actions

## ■ Outstanding business

- SiO<sub>2</sub> ballot item – NM negative
  - Consider NM discussion
  - Unless arguments deemed persuasive, TG recommends eliminating SiO<sub>2</sub> requirement

## ■ New business

- Revise fineness definition, est. Type II (MH)
  - Item passed TS ballot (admin negative only)
  - TG recommends forwarding to Full SOM ballot

# TS Actions

- New business (con't)
  - Revise Footnote D, Table 1
    - TG recommends forwarding to Full SOM ballot to adopt new language
  - Processing Additions
    - AASHTO sponsored Research via NCHRP
    - NCHRP Report 607 issued / reviewed
    - TG recommends forwarding as a concurrent TS and Full SOM ballot to adopt all the recommendations made in NCHRP Report 607

# Processing Additions

- ASTM C150:
  - ASTM C465
- AASHTO M 85
  - ASTM C465
  - 1% max by weight of cement
- NCHRP Report 607, Specifications and Protocols for Acceptance Tests on Processing Additions in Cement Manufacturing



# NCHRP Report 607

## Conclusions and Recommendations

- "Inorganic processing additions do not have a large influence on performance of cementitious systems"
- Some SCMs limited by current requirements (LOI, IR, etc.)
- <1%, no additional testing required
- 1 to 5% permitted with additional testing
- Additional testing via modified C465 or new specification
- Bogue phase calculations to be corrected

# JAAHTG Approach: C465 proposal

- Work w/ ASTM to revise C465
  - Differentiate organic and inorganic
    - Scope
    - Section 3
  - Sections 4, 7 and 13: Add requirements for reporting chemical analysis
  - Add Section 14.2, for manufacturer's certification for inorganic
- Develop AASHTO spec per 607 report
  - Mirror modified ASTM C465 ("B" standard)

# JAAHTG Approach: M-85 proposal

- Organic processing additions
  - Current C465 testing
- Inorganic processing additions
  - 5% max limit on inorganic
  - Modified C465 testing / AASHTO "B" spec
  - Modification of phase calculations (Bogue adjustments)

# Summary

- JAAHTG progressing...
- 2008 ballot proposals / motions
  - NM negative (non-persuasive for  $\text{SiO}_{2?}$ )
  - Revise fineness definition, est. Type II (MH)
  - Revise Footnote D, Table 1
  - Processing Additions
    - M85 inclusion
    - ASTM modified C465 / AASHTO "B" standard

# Questions