

## ORIGNATION FORM

**Date:** 1-17-12

**Originator:** Timothy J. Ruelke

**Contact Information:** State Materials Office/352-955-6620

**Specification Title:** Portland Cement and Blended Cement

**Specification Section, Article, or Subarticle Number:** 921

**Why does the existing language need to be changed?** To allow for use of Type II (MH) cement with a lower heat of hydration if the concrete is not used in a mass concrete application.

**Summary of the changes:**

Define the heat of hydration requirements for Type II (MH) used in mass concrete and raise the cal/g for Type II (MH) not used in mass concrete.

**Are these changes applicable to all Department jobs? If not, what are the restrictions?**

These changes are applicable to all Department jobs.

**Will these changes result in an increase or decrease in project costs? If yes, what is the estimated change in costs?** The changes should not change project costs.

**With who have you discussed these changes?** District Materials Concrete personnel.

**What other offices will be impacted by these changes?** No other offices are affected by this change.

**Are changes needed to the PPM, Design Standards, SDG, CPAM or other manual?** No.

**Is a Design Bulletin, Construction Memo, or Estimates Bulletin needed?** No.

Contact the State Specifications Office for assistance in completing this form.

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### **M E M O R A N D U M**

**DATE:** February 29, 2012

**TO:** Specification Review Distribution List

**FROM:** Duane F. Brautigam, Director, Office of Design

**SUBJECT:** Proposed Specification: **9210100 Portland Cement And Blended Cement.**

In accordance with Specification Development Procedures, we are sending you a copy of a proposed specification change.

This change was proposed by Tim Ruelke to allow for use of Type II (MH) cement with a lower heat of hydration if the concrete is not used in a mass concrete application.

Please share this proposal with others within your responsibility. Review comments are due within four weeks and should be sent to Mail Station 75 or to my attention via e-mail at RD967DB or duane.brautigam@dot.state.fl.us. Comments received after **March 28, 2012**, may not be considered. Your input is encouraged.

DB/cah  
Attachment

**PORTLAND CEMENT AND BLENDED CEMENT.**  
**(REV 1-23-12)**

ARTICLE 921-1 (of the Supplemental Specification) is deleted and the following substituted:

**921-1 General.**

*Cement shall conform to the requirements of AASHTO M-85 or AASHTO M-240, as applicable, except as defined below or as specifically restricted in Section 346.*

**921-1.1 Type of Cement:** ~~Cement shall conform to the requirements of the following AASHTO designations except where a particular type of cement is specified on the plans or Specifications, and as specifically restricted in Section 346 C,~~ cement may be Types I, II, II (MH), III, IV, V (AASHTO M-85), or IP, IP (MS), IS (AASHTO M-240). Different brands of cement, cement of the same brand from different facilities, or different types of cement shall be stored separately and shall not be mixed.

**921-1.2 Alkali Content:** Only Portland cement containing a maximum of 0.60% alkali, or less, calculated as Na<sub>2</sub>O (% Na<sub>2</sub>O plus 0.658% K<sub>2</sub>O), may be used with no further testing. When tests performed in accordance with ASTM C-33 X1.3 on coarse and fine aggregate indicate the aggregate to be non-reactive to alkalis, cements exceeding 0.60% alkali is allowed.

**921-1.3 Heat of Hydration:** The cement heat of hydration for Type II (MH) shall be ~~80-88~~ cal/g or less at seven days *when tested* in accordance with ASTM C-186. *For Type II (MH) used in mass concrete, the cement heat of hydration shall be 80- cal/g or less at seven days when tested in accordance with ASTM C-186.*

ARTICLE 921-2 (Pages 845 – 846) is deleted and the following substituted:

**921-2 Terminology.**

The following definitions are applicable to the production and quality control of cement:

Source of Supply - indicates a cement supplier responsible for supplying the final product. Where the supplier has more than one manufacturing facility, the source of supply may be designated as the manufacturer/facility.

Approved Source - indicates a cement supplier, including but not limited to a plant, a terminal, or a transfer facility, that has been qualified by the State Materials Office. A list of Approved Cement Sources will be maintained by the State Materials Office.

Quality Control Plan Status - indicates quality control approval status, for each cement supplier and will be maintained by the State Materials Office in conjunction with the Approved Source List.

Purchaser - The term “purchaser” in the AASHTO Specifications shall be taken as the Department.

Approved Laboratory – indicates a laboratory acceptable to the State Materials Office which has been currently inspected by the Cement and Concrete Reference Laboratory (CCRL), is actively participating in their proficiency program and which has all deficiencies noted at the time of inspection corrected. The laboratory must also authorize CCRL to send copies of final inspection reports to the State Materials Office.

Mill Test Report – indicates a certification from the cement supplier identifying that the cement meets Section 921 ~~and AASHTO M-85~~, the Type, the production period the sample represents and the chemical and physical analyses of the cement, and the silo number(s) where the cement is stored. The mill test report must identify that there is limestone in the cement, if limestone is included. An acceptable mill test report is found in the appendix of AASHTO M-85.