



Florida Department of Transportation

RICK SCOTT
GOVERNOR

605 Suwannee Street
Tallahassee, FL 32399-0450

ANANTH PRASAD, P.E.
SECRETARY

April 2, 2012

Monica Gourdine
Program Operations Engineer
Federal Highway Administration
545 John Knox Road, Suite 200
Tallahassee, Florida 32303

Re: Office of Design, Specifications
Section **921**
Proposed Specification: **921 Portland Cement And Blended Cement.**

Dear Ms. Gourdine:

We are submitting, for your approval, two copies of the above referenced Supplemental Specification.

These changes were 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 review and transmit your comments, if any, within two weeks. Comments should be sent via email to RD967DB or duane.brautigam@dot.state.fl.us.

If you have any questions relating to this specification change, please call Duane Brautigam, Director, Office of Design at 414-4175.

Sincerely,

Duane F. Brautigam., P.E.
Director, Office of Design

DB/cah

Attachment

cc: Florida Transportation Builders' Assoc.
State Construction Engineer

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 Na₂O (% Na₂O plus 0.658% K₂O), 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.

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

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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 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_2O (% Na_2O plus 0.658% K_2O), 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 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.

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Mill Test Report – indicates a certification from the cement supplier identifying that the cement meets Section 921, 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.