

**OFFICE OF STATE AID ROAD CONSTRUCTION
MISSISSIPPI DEPARTMENT OF TRANSPORTATION**

NOTICE TO BIDDERS NO. 12

DATE: **October 19, 1995**

**SUBJECT: RESTRICTION ON TRICALCIUM ALUMINATE CONTENT AND
SOURCE OF FLY ASH**

All references to the term "Portland Cement Concrete" in the Mississippi Standard Specifications for State Aid Road and Bridge Construction, contract plans, documents, and the Standard Operating Procedures shall be deemed to mean a concrete mixture composed of cementitious materials, water, fine and coarse aggregates, and admixtures when specified or permitted.

The Office of State Aid Road Construction has substantiated that for technical reasons concrete mixtures used in certain classes of application must have restrictions on the tricalcium aluminate content and source of fly ash used for replacement of portland cement. The need for the restrictions set forth herein have been documented.

In the event of a written request by interested persons, the documentation will be made available for review at the MDOT's Central Testing Laboratory located at 412 East Woodrow Wilson Avenue, Jackson.

Except for those classes of application which are excluded herein, the tricalcium aluminate content of the portland cement portion of cementitious materials used in stabilization and concrete mixtures shall not exceed eight percent (based on aluminum or aluminum oxide content). At the Contractor's option, the cementitious material may be portland cement (Type I or II), portland cement (Type III when permitted), blended hydraulic cement (Type IP), portland cement combined with ground granulated blast furnace slag or portland cement combined with fly ash.

The addition of fly ash as a replacement for cement will not be permitted in blended hydraulic cement (Type IP), portland cement combined with ground granulated blast furnace slag or portland cement (Type III) when specified in the contract.

The restrictions on tricalcium aluminate content and source of fly ash are not applicable for the following classes of application:

- (a) manufacture of prestressed structure members, concrete pipe, post and right-of-way markers and
- (b) construction of bridge decks, curbs, rails, and intermediate caps.

The replacement of portland cement with fly ash shall not exceed 20 percent and the replacement rate (by weight) shall be one part fly ash for one part cement. The scales for weighing fly ash shall meet the requirements of cement scales as set forth in Mississippi Department of Transportation's Standard Specifications, Subsection 501.03.2.3.

When blended hydraulic cement (Type IP) is incorporated in the work or when portland cement is replaced with ground granulated blast furnace slag or fly ash, cylinder tests shall be used as a guide for the removal of falsework and forms as set forth in Column B of Subsection S-601.09.3 and S-804.19, and concrete pavement shall not be opened to traffic until cylinder tests have attained a compressive strength of 3500 psi or may be opened after a curing period of 28 days.

In addition to meeting the requirements set forth in Subsection S-714.05, the source of fly ash must have been approved for listing in the MDOT's "List of Approved Source of Fly Ash for Concrete Mixtures in Sulfate Areas" prior to its use.