

ARKANSAS DEPARTMENT OF TRANSPORTATION
SUPPLEMENTAL SPECIFICATION
PORTLAND CEMENT CONCRETE PAVEMENT

Division 500 of the Standard Specifications for Highway Construction, Edition of 2014, is hereby amended as follows:

The first and second paragraph of **Subsection 501.02(a), Cement**, are hereby deleted and the following substituted therefor:

(a) Cement. Portland cement, blended cement, fly ash, and slag cement shall be from sources that are listed on the Department's Qualified Products List (QPL) in Division 500 and that have executed a certification agreement with the Department.

The first and second sentence of the third paragraph of **Subsection 501.02(a), Cement**, are hereby deleted and the following substituted therefor:

The total alkalis in the Portland cement or blended cement ($\text{Na}_2\text{O} + 0.658 \text{K}_2\text{O}$) shall not exceed 0.60%. The total alkali content in the cementitious material shall not exceed 5 lb/cu yd (2.4 kg/cu m).

The fifth paragraph of **Subsection 501.02(b), Fine Aggregate**, is hereby deleted.

The sixth paragraph of **Subsection 501.02(c), Coarse Aggregate**, is hereby deleted.

Subsection 501.02(f), Cement Replacements, (1) Fly Ash, is hereby deleted and the following substituted therefor:

(1) Fly Ash. Fly ash for use with Portland cement or blended cement shall comply with the requirements of AASHTO M 295, Class C or Class F. Mixing of Class C or Class F fly ashes will not be permitted.

The sixth through thirteenth paragraphs of **Subsection 501.03 Mix Design. (a), General**, are hereby deleted and the following substituted therefor:

Fly ash may be used as a partial replacement for Portland or blended cement, not exceeding 25% by weight. Substitution shall be made at the rate of one pound (kilogram) of fly ash for each pound (kilogram) of cement replaced. Fly ash will not be allowed as a substitute for high early strength cements.

Slag cement may be used as a partial replacement for Portland or blended cement, not exceeding 25% by weight. Substitution shall be made at a rate of one kilogram (pound) of slag cement for each pound (kilogram) of cement replaced. Slag cement will not be allowed as a substitute for high early strength cements. Ternary mixes (cement, fly ash, and slag cement) are not allowed.

The minimum 28-day compressive strength shall be 4000 psi (28.0 MPa) when tested according to AASHTO T 22. Test specimens will be made and cured according to AASHTO T 23 or T 126 as applicable.

The mixed concrete shall have a uniform consistency with a slump, as determined by AASHTO T 119, not exceeding the tolerances as listed on the mix design. All admixtures shall comply with Subsection 501.02(e).

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Fine and coarse aggregate shall be added only in such proportion that satisfactory plasticity, workability, and consistency of the mix are maintained, with the further provision that the ratio of the fine aggregate to cement, based on dry and rodded measure, shall be not less than 1.5 nor more than 2.5.

The specified water/cement ratio shall not be exceeded, and the minimum compressive strength shall be met.

A minimum of 15 working days prior to the commencement of paving operations, the contractor shall submit to the Engineer of Materials for review and approval the following:

- Certification for the low alkali cement proposed for use OR the results of fine and coarse aggregates Potential Alkali Reactivity test (AASHTO T 303) in accordance with Options 1 or 2 of Subsection 501.02.
- A Job Mix Formula (JMF) that contains sources of all aggregates proposed for use, a composite gradation of all aggregates, and proportions of each aggregate. Individual gradations of each aggregate shall be included. The JMF may only be changed upon written approval of the Engineer. Composite gradations will be calculated using ARDOT Test Method 558.
- A completed ARDOT Concrete Mix Design Submittal form. This form is located on the Materials Division website for download.

The last sentence of the third paragraph of **Subsection 501.05(c), Measuring Materials, (1) General**, is hereby deleted and the following substituted therefor:

The load ticket shall show the following information:

1. Unique ticket number.
2. Identification of the truck.
3. Date and time of batching.
4. Total weights and/or volumes of each component.
5. Total volume of mix.
6. Total quantity of water added after batching.
7. Time of discharge.
8. ARDOT Mix Design ID

The first sentence of **Subsection 501.08, High Early Strength Concrete Pavement**, is hereby deleted and the following substituted therefor:

Cement used in High Early Strength Concrete shall conform to AASHTO M 85, Type III, AASHTO M 240, Table 3, or a Rapid Hardening Hydraulic Cement in compliance with ASTM C1600.