

ARKANSAS DEPARTMENT OF TRANSPORTATION
SUPPLEMENTAL SPECIFICATION
CONCRETE FOR STRUCTURES

Division 800 of the Standard Specifications for Highway Construction, Edition of 2014, is hereby amended as follows:

The first and second paragraph of **Subsection 802.02(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 802.02(a), Cement**, are hereby deleted and the following substituted therefor:

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

The sixth paragraph of **Subsection 802.02(b), Fine Aggregate**, is hereby deleted.

The sixth paragraph of **Subsection 802.02(c), Coarse Aggregate**, is hereby deleted.

Subsection 802.02(e), Admixtures, is hereby deleted and the following substituted therefor:

(e) Admixtures. Admixtures shall be from sources that are listed on the Department's QPL in Division 500. Admixtures will be reviewed and approved during the mix design submittal. Admixtures shall be compatible with each other, as advised by the manufacturer. The admixture dosage rate range as recommended by the manufacturer shall be used. Should the dosage rate for any admixture not yield desirable characteristics in the concrete, the dosage of admixture used shall be based on test results obtained by trial batches.

Admixtures shall be added to the mixing water by means of a mechanical dispenser that will accurately meter the additive throughout the mix water cycle. The dispenser shall be constructed and connected so that the amount of admixture entering the mixing water can be readily determined.

Subsection 802.05(b), Mix Design by the Contractor, is hereby deleted and the following substituted therefor:

(b) Mix Design by the Contractor. The proportions to be used in the mix for each class shall be determined by the Contractor using the absolute volume method. The Contractor may use the procedure provided in the ACI Standard 211.1 or Portland Cement Association "Design and Control of Concrete Mixtures", modified to comply with the minimum compressive strength and maximum water/cement ratio specified for the class of concrete. A minimum of 15 business days prior to the start of production of the concrete mixture, the Contractor shall submit test results and/or certifications for all materials and detailed mix design data to the Engineer of Materials for review and approval. The ARDOT Concrete Mix Design Submittal form is available for download on the Materials Division website and shall be used. The Department will assign a Mix Design ID, and it shall be included on the delivery ticket.

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SUPPLEMENTAL SPECIFICATION
CONCRETE FOR STRUCTURES

The Contractor will submit slump ranges during the mix design process. The Engineer of Materials will determine the allowable tolerances for slump during review of the mix design. 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.

Acceptance of the mix design by the Engineer will be based on apparent conformity to the requirements shown in Table 802-1 and listed herein. If the mix design fails to produce acceptable results or if there is a change in the aggregates, fly ash, or cement being used, a new mix design will be required. It shall remain the Contractor's responsibility during production to produce concrete conforming to the mix design and the minimum acceptance criteria specified. When requested by the Engineer, the Contractor shall submit samples of all materials for verification testing. Production shall not begin until the mix design is accepted by the Engineer.

A mix design submitted for acceptance need not be prepared specifically for this project but may be a previously accepted design that uses the same materials and meets the same design criteria.

Mix designs accepted under this section will become the property of the Department and may be accepted for use on other projects, by other contractors, or by the Department.

In **Table 802-1**, Slump Range for all classes of concrete are hereby deleted.

The first paragraph of **Subsection 802.05(d), Fly Ash**, is 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, in all classes of concrete except Class B. Substitution shall be made at the rate of one pound (kilogram) of fly ash for each pound (kilogram) of cement replaced. The water/cement ratio shall be calculated using the total weight of both cement and fly ash. Fly ash in Class B concrete shall meet the requirements specified in Subsection 802.05(c) and listed herein. Mixtures with fly ash shall meet the same requirements as mixtures without fly ash. Fly ash will not be allowed as a substitute in high early strength mixes. When fly ash is used, the total weight of both cement and fly ash will be used in design calculations.