

STATE OF OHIO  
DEPARTMENT OF TRANSPORTATION  
SUPPLEMENTAL SPECIFICATION 844

HIGH PERFORMANCE CONCRETE FOR STRUCTURES

May 5, 1998

- 844.01 Description
- 844.02 Material
- 844.03 Proportioning
- 844.031 Proportioning, Slipforming
- 844.04 Mix Options
- 844.05 Provisions
- 844.06 Placement Limitations
- 844.07 Equipment for Bridge Decks
- 844.08 Superstructure Deck Curing and Texturing
- 844.09 Curing and Loading
- 844.10 Sealing Joints and Cracks
- 844.11 Chloride Resistance, Drying Shrinkage, and Heat of Hydration Testing
- 844.12 Method of Measurement
- 844.13 Basis of Payment

844.01 **DESCRIPTION.** This item consists of supplying and placing a high performance concrete that is workable, finishable, and when necessary, pumpable.

The probability of higher than normal dosage rates of Type F or G admixtures is likely. The need for chemical admixtures or aggregates or both, different from the Contractor's normal sources is a distinct possibility.

All provisions of Item 511-Class S concrete will remain in effect, except as modified herein.

844.02 **MATERIAL.** The maximum sodium sulfate soundness loss for coarse aggregate will be 10 percent.

Fly ash will meet 705.13 Class C.

Ground granulated blast furnace (GGBF) slag will meet ASTM C 989, grade 100 minimum (manufacturer's certification is required). The one day cube strength results of ASTM C 1073 may be used in lieu of the 7 and 28 day cube strengths required by ASTM C 989.

Only one source of fly ash or GGBF slag will be used in any one structure, unless otherwise authorized by the Engineer. Bulk fly ash or GGBF slag will be stored in waterproof bins.

Micro-silica admixture will meet ASTM C 1240 and be from a source approved by the Office of Materials Management, 1600 W. Broad Street, Columbus, Ohio.

Cement will be Type 1 only (701.04); only one brand, grade or kind shall be used in any given superstructure except upon permission of the Engineer.

High molecular weight methacrylate resin sealer shall meet the requirements of Supplemental Specification 954.

The Contractor will obtain a written statement from the manufacturers of the chemical admixtures verifying the compatibility of the combination of materials and the sequence in which they are combined. The manufacturers will further designate a technical representative from its company or the ready-mix supplier to be in charge of the dispensing of the admixture products. The technical representatives will act in an advisory capacity and will report to the Contractor and the Engineer any operations and procedures which are considered by the representative as being detrimental to the integrity of the placement. The manufacturer's technical representative will be present during concrete placement unless his presence is waived by the Engineer.

844.03 **PROPORTIONING.** The proportioning options of 499.031 will not be permitted.

At least 3 days prior to placing the test slab, the Contractor will submit in writing the specific mix design and batching sequence for the project. This design is for the Engineer's information and review and only subject to approval for meeting the specification proportions.

If any proportioning or batching sequence modifications are needed, the Contractor will submit a revised mix design or batching sequence to the Engineer and perform another test slab at no additional cost to the State. A successful test slab pour, as determined by the Engineer, must be completed before any concrete is placed.

844.031 **PROPORTIONING, SLIPFORMING.** The Contractor is allowed the option of slipforming bridge parapets. A mix will be developed and a 6m (20 foot) section of parapet will be slipformed as a test section. Up to two thirds of the No. 8 Size coarse aggregate may be replaced with No. 57 Size coarse aggregate. The Engineer will approve the test section before any additional parapet concrete is allowed to be slipformed. The approved slipform concrete mix design will be submitted to The Office of Materials Management for record purposes.

Dimensional Tolerances and Acceptance Criteria.

Dimensions will not be in excess of the construction tolerances listed below:

Reinforcing steel cover      -13 (- 1/2 inch) + 13 mm (+ 1/2 inch)