

**STATE OF OHIO  
DEPARTMENT OF TRANSPORTATION  
SUPPLEMENTAL SPECIFICATION 843  
PATCHING CONCRETE STRUCTURES  
WITH TROWELABLE MORTAR**

May 5, 1998

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**843.01 Description.**

This item consists of the removal of all loose and disintegrated concrete, preparation of the surface, and the mixing, placing, finishing and curing of the patches in the areas shown or noted on the plans or as directed by the Engineer. The work shall be performed upon concrete components in accordance with these specifications, and in reasonably close conformity with the plans and the manufacturer's specifications and recommendations.

**843.02 Materials.** The manufacturer will specify whether the product is designed for horizontal, vertical, or overhead patching. All materials shall be prepackaged and stored and incorporated in the work as recommended by the manufacturer. A manufacturer's representative shall be present at the job site until such a time as he and the Engineer are sure that the Contractor is qualified in all aspects of patching concrete structures with the selected materials.

**843.03 Test Requirements and Prequalification.** Trowelable mortar will meet the following test requirements.

Compressive Strength (ASTM C 109 Modified, 50mm [2-inch cubes])	
1 DAY.....	12.3 MPa (1800 psi)
7 DAY.....	37.4 MPa (5500 psi)
28 DAY.....	48.3 MPa (7000 psi)

Splitting Tensile Strength (ASTM C 496 )	
7 DAY.....	3.7 MPa (550 psi)
28 DAY.....	5.2 MPa (750 psi)

Flexural Strength (ASTM C 78)	
7 DAY.....	7.6 MPa (1100 psi)
28 DAY.....	10.2 MPa (1500 psi)

Shrinkage (ASTM C 157) at 1,3,14 and 28 days	
Max %.....	+ 0.3
Min. %.....	0.0

Bond Strength (ASTM C882 modified*)	
28 DAY.....	10.2MPa (1500 psi)
*Mortar scrubbed into substrate or as recommended by the manufacturer.	

Chloride Ion Permeability (AASHTO T 277) ..... 500 Coulombs or less

Modulus of Elasticity .....24.2 - 27.6 GPa ( 3,500,000 - 4,000,000 psi)  
(ASTM C 469 @ 28 DAYS)

The troweable mortar material proposed for use shall be prequalified. Prior to approval, the manufacturer shall submit independent certified test data showing that the material complies with the performance requirements of this specification to the Office of Materials Management - Cement and Concrete Engineer, 1600 West Broad St., Columbus, Ohio 44223. The certified test data shall also state the following physical properties for the troweable mortar:

1. Color
2. Material Components and Proportions
3. Shelf Life
4. Yield
5. Working Time
6. Final Cure Time
7. Pot Life
8. Consistency

The test data shall be developed by an independent testing laboratory approved by the Office of Materials Management.

The following items shall also be submitted to the Office of Materials Management prior to approval:

1. Manufacturer's technical data sheet for each component.
2. Material safety data sheet for each component.
3. Enough component to produce a liter (quart) sample of troweable mortar
4. A one liter (quart) sample of the solvent to be used for cleanup.