

1727 - SHOTCRETE CONCRETE

SECTION 1727

SHOTCRETE CONCRETE

1727.1 DESCRIPTION

This specification covers shotcrete concrete used to repair, reinforce or modify concrete structures.

1727.2 REQUIREMENTS

a. Provide material that complies with the following:

TABLE 1727-1: SHOTCRETE CONCRETE PROPERTIES		
Hardened Properties	Test Method	Requirement
Slant Shear Bond Strength @ 24 hours	ASTM C 882 Modified*	1200 psi, min.
Drying Shrinkage @ 28 days	ASTM C 157 Modified**	0.08%, max.
Rapid Chloride Permeability @ 28 days	ASTM C 1202*** / AASHTO T 277***	750 coulombs, max.
Volume of Permeable Voids @ 7 days	ASTM C 642***	10%, max.
Freeze-Thaw Resistance @ 300 cycles	ASTM C 666, Procedure A	95% RDM, min.
Flexural Strength @ 24 hours	ASTM C 348	650 psi, min.
Compressive Strength @ 24 hours	ASTM C 109	2500 psi, min.

*No epoxy bonding agent used.

** ICRI Guideline No. 03733, "A Guide for Selecting and Specifying Materials for Repair of Concrete Surfaces", 1"x1"x10" prism, air cured

***Either Rapid Chloride Permeability or Volume of Permeable Voids can be used.

b. If the mix is not in bag or tote form (pre-blended in a manufacturer's controlled environment), then provide a mix design with weight quantities of each component for a cubic yard of finished product. All components are required to be prequalified.

c. Provide material with a corrosion inhibitor.

d. Material may contain fibers.

e. Provide material to satisfy application requirements – vertical, overhead, low-pressure spraying, or hand packed.

1727.3 TEST METHODS

Test as specified in **subsection 1727.2a.**

1727.4 PREQUALIFICATION

a. Manufacturers interested in prequalifying material under **subsection 1727.2a.** must submit the following to the Bureau of Construction and Materials:

- (1) A complete description, literature, and set of instructions and recommendations,
- (2) A copy of test results performed in accordance with the tests stated in **subsection 1727.2a.**,
- (3) Certificate stating results comply with **subsection 1727.2a.**, and
- (4) Material Safety Data Sheets (MSDS).

b. The Bureau of Construction and Materials will maintain a list of qualified materials. Products will remain on the list as long as field performance is satisfactory.

1727.5 BASIS OF ACCEPTANCE

Prequalification as specified in **subsection 1727.4.**

Receipt and approval of a Type D certification as specified in **DIVISION 2600.**

Visual inspection by the Field Engineer.