

934 NON-SHRINK GROUT.

(REV 12-20-01) (FA 1-3-02) (7-02)

SECTION 934 (Pages 869 and 870) is deleted and the following substituted:

**SECTION 934
NON-SHRINK GROUT**

934-1 Scope.

This Section covers only prepackaged non-shrink cementitious grout for structural use.

934-2 Type Permitted.

Only non-metallic formulations of grouts are allowed. Gas producing, metal oxidizing and expansive aggregate grouts are not allowed.

934-3 Sampling and Testing Methods.

Perform concrete sampling and testing in accordance with the following methods:

| | |
|--|--------------------------|
| Making and Curing Concrete Test Specimens in the Laboratory | ASTM C 192 [ASTM C 192M] |
| Time of Setting Concrete Mixtures by Penetration Resistance | ASTM C 403 [ASTM C 403M] |
| Determining Low-Levels of Chloride in Concrete and Raw Materials | FM 5-516 |
| Compressive Strength of Hydraulic Cement Mortars | ASTM C 109 [ASTM C 109M] |
| Flow of Grout for Preplaced Aggregate Concrete (Flow Cone Method)..... | ASTM C 939 |
| Measuring Changes in Height of Cylindrical Specimens from Hydraulic Cement Grout..... | ASTM C 1090 |
| Expansion and Bleeding of Freshly Mixed Grout for Preplaced Aggregate Concrete in the Laboratory..... | ASTM C 940 |

934-4 Requirements.

When tested as provided in 934-3, the grout shall meet the following requirements:

| Property | Test Value |
|--|--|
| Compressive strength | |
| one day | 2,500 psi [17 MPa] minimum |
| 3 days | 5,000 psi [35 MPa] minimum |
| Time of set, final | 8 hours maximum |
| Chloride Content | 0.40lb/yd ³ [0.25 kg/m ³] maximum |
| Hardened Height Change @ 1, 3, 14, and 28 Days | 0.0% to 0.3% |
| Hardened Height Change @ 1, 3, and 14 Days | ≤ Height Change @ 28 Days |
| Expansion | ≤ 2.0% @ 3 Hours |
| Bleeding, Final | 0.0% @ 3 Hours |

934-5 Acceptance.

Non-shrink grout shall be one of the products included on the Qualified Products List (QPL). Materials included on the QPL require no additional testing. Materials remaining in storage for more than six months must be retested before use.

934-6 Rejection.

Materials shall be rejected at the point of use if the materials are caked, lumpy, or show any signs of deterioration. Materials shall be rejected if the grout does not achieve the design fluidity or consistency when mixed according to the manufacturer's recommendations.

All broken or open packages shall be rejected.

934-7 Packaging.

Cementitious materials for grouts must be packaged in suitable moisture resistant containers and clearly labeled. Where applicable, manufacturers recommendations, limitations and cautions shall be clearly visible on each label.

934-8 Qualified Products List.

Manufacturers seeking evaluation of non-shrink grout for use on state projects that are not on the QPL shall meet the requirements of 6-1 and this Specification. A unit sample shall be submitted to the Engineer for testing at the State Materials Office. The unit sample submitted for testing shall be a single package of no less than 40 pounds [18 kg]. Materials which fail to meet the requirements of 934-4, when tested for manufacturer's evaluation, will not be included on the QPL.

