

EXPECTED IMPLEMENTATION JULY 2003

934 NON-SHRINK GROUT.

(REV ~~12-20-01~~~~10-9-02~~~~10-21-02~~~~1-15-03~~) (~~FA 1-3-02~~) (~~7-02~~) (FA 1-21-03) (7-03)

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 Certification~~ Product Acceptance on the Project:

EXPECTED IMPLEMENTATION JULY 2003

~~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. The Contractor shall provide certification to the Engineer in accordance with a certification conforming to the requirements of Section 6 from the manufacturer confirming that the requirements of this Section are met.~~

~~Non shrink grout used shall be one of the products listed on the Qualified Products List. Non-shrink grout used shall be one of the products listed on the Qualified Products List. Manufacturers seeking evaluation of their product shall submit an application in accordance with Section 6.~~

~~Acceptance will be made in accordance with the products listed on the Qualified Products List (QPL).~~

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. Non shrink grout used shall be one of the products listed on the Qualified Products List. Manufacturers seeking evaluation of their product shall submit an application in accordance with Section 6.~~