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 C192
- Time of Setting Concrete Mixtures by Penetration Resistance..............................ASTM C403
- Determining Low-Levels of Chloride in Concrete and Raw Materials.............................FM 5-516
- Compressive Strength of Hydraulic Cement Mortars.....................................ASTM C109
- Flow of Grout for Preplaced Aggregate Concrete (Flow Cone Method)..................ASTM C939
- Measuring Changes in Height of Cylindrical Specimens from Hydraulic Cement Grout..............................ASTM C1090
- Expansion and Bleeding of Freshly Mixed Grout for Preplaced Aggregate Concrete in the Laboratory...........ASTM C940

934-4 Requirements.
When tested as provided in 934-3, the grout shall meet the following requirements:

<table>
<thead>
<tr>
<th>Property</th>
<th>Test Value</th>
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<tbody>
<tr>
<td>Compressive strength one day</td>
<td>2,500 psi minimum</td>
</tr>
<tr>
<td>3 days</td>
<td>5,000 psi minimum</td>
</tr>
<tr>
<td>Time of set, final</td>
<td>8 hours maximum</td>
</tr>
<tr>
<td>Chloride Content</td>
<td>0.40lb/yd³ maximum</td>
</tr>
<tr>
<td>Hardened Height Change at 1, 3, 14, and 28 Days</td>
<td>0.0% to 0.3%</td>
</tr>
<tr>
<td>Hardened Height Change at 1, 3, and 14 Days</td>
<td>≤ Height Change @ 28 Days</td>
</tr>
<tr>
<td>Expansion</td>
<td>≤ 2.0% @ 3 Hours</td>
</tr>
<tr>
<td>Bleeding, Final</td>
<td>0.0% @ 3 Hours</td>
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</table>
934-5 Product Acceptance on the Project.
Non-shrink grout used shall be one of the products listed on the Department’s
Approved Product List (APL). 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 APL.

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.