

## 1716 – RAPID-SET CONCRETE PATCHING MATERIAL

### SECTION 1716

#### RAPID-SET CONCRETE PATCHING MATERIAL

##### 1716.1 DESCRIPTION

This specification covers requirements for rapid setting cementitious materials for concrete repairs.

##### 1716.2 REQUIREMENTS

- a. Provide material that complies with ASTM C 928.
- b. Freeze-thaw durability will be determined using ASTM C 666, Procedure B. At the end of 300 freeze-thaw cycles, acceptable products must exhibit expansion of less than 0.10%, and a calculated durability factor of 90.0% minimum.
- c. When allowed in the Contract Documents, extender aggregate may be combined with the neat rapid setting material according to the manufacturer's recommendations. The resulting combined material is subject to the foregoing requirements. Products will be tested neat as received, and also extended to the full amount allowed by the manufacturer, and will be classified as Rapid Hardening (R1), Very Rapid Hardening (R2) or Ultra Rapid Hardening (R3) based on the results. A product may be classified in one category when tested neat as received, and another when tested extended the maximum amount. All extender aggregate used on Contracts must be from a source that has a current Official Quality approval status for Mixed Aggregate per **SECTION 1102**.
- d. Provide material classified as Rapid Hardening, Very Rapid Hardening or Ultra Rapid Hardening as specified in the Contract Documents. Any prequalified higher class of material may be substituted for a lower class specified at no additional cost. If no class is specified, any prequalified product may be supplied.
- e. Provide the same product as prequalified under the AASHTO National Transportation Product Evaluation Program (NTPEP), including water/cement ratio and proportion of aggregate (if applicable). If the product was prequalified using a manufacturer-provided aggregate, then the aggregate may be substituted by using an approved local source at the same proportioning established during prequalification.

##### 1716.3 TEST METHODS

Test material in accordance with the applicable parts of ASTM C 928 and ASTM C 666, Procedure B.

##### 1716.4 PREQUALIFICATION

Supply samples for prequalification to the AASHTO National Transportation Product Evaluation Program (NTPEP). Forward an official copy of the test report to the Bureau Chief of Construction and Materials for evaluation. Include information regarding the soluble chloride content of the material, and the mandatory statement from ASTM C 928 if it exceeds 1 lb/cu yd. Include the metallic iron content and the mandatory statement from ASTM C 928 if it exceeds 1% by mass. Prequalification will be based on satisfactory compliance of NTPEP results with this specification. Products will be classified as Rapid Hardening, Very Rapid Hardening or Ultra Rapid Hardening in both the neat and extended mixes based on the NTPEP results.

If the NTPEP laboratory results comply with **subsection 1716.2** and if, after 300 freeze-thaw cycles, the laboratory test specimens exhibit no cracking and only very slight scaling or spalling (minimum 1/8 inch depth) with no coarse aggregate visible, the name of the product will be placed on a list of prequalified products maintained by the Bureau of Construction and Materials. No rapid setting concrete patch material will be used on KDOT projects unless it has been prequalified.

Manufacturers are required to resubmit their products for testing at intervals stipulated by NTPEP. Failure to resubmit products may be cause for removal from the prequalified listing.

##### 1716.5 BASIS OF ACCEPTANCE

Prequalification as specified in **subsection 1716.4**.

Receipt and acceptance of a Type C certification as specified in **DIVISION 2600**.