



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

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**APPROVAL AND TESTING OF PACKAGED, DRY, RAPID-HARDENING
CEMENTITIOUS MATERIALS FOR CONCRETE REPAIRS**

VERSION: Rev. 0, 20080103

Purpose: This policy describes the approval procedure for packaged, dry, rapid-hardening cementitious materials for concrete repairs.

Submission for Pre-Approval: The manufacturer is required to submit to the Materials and Tests Unit certified reports of tests that show that the product meets the applicable specifications. Tests shall be performed in a laboratory certified by the Cement and Concrete Reference Laboratory of the National Bureau of Standards.

The manufacturer shall submit to the Physical Testing Engineer the following for each product to be approved:

- A. Completed Cementitious Materials for Concrete Repairs Submittal Form.
- B. Current MSDS Sheet
- C. Letter of Compliance stating at a minimum the company name, product name, type of concrete repair material (R1, R2, R3 and concrete or mortar), a statement saying it meets ASTM C928, and will meet the manufacturer's currently published physical properties and performance characteristics.
- D. Certified test data from an independent testing laboratory showing results for the following: 3-hour, 1-day, 7-day, and 28-day compressive strengths; 1-day and 7-day bond strength; length change; consistency; scaling resistance; time of setting; flexural strength; and freeze-thaw – all in accordance with ASTM C928.
- E. Technical data sheet stating at a minimum product description, yield, technical information, mixing directions, finishing directions, curing, clean-up and precautions/limitations.

- F. A sample of the product sufficient in size to make twelve 4"x 8" cylinders for products with aggregates or twelve 2"x 2" cubes for products without aggregate.

Chloride Content Limitation: Repair materials that contain chloride are not permitted. The manufacturer is required to state in writing that no chloride was added during the manufacture of the Product.

Initial Acceptance of the Product: The Physical Test Engineer will review the submittal for completeness; review the certified test data and run verification tests on the sample. If all data is complete and the independent lab data meets the specification the product will be added to the Approved Products List.

Re-Certification: After the product is accepted, the manufacturer is required to submit to the Physical Test Engineer on or prior to February 1st of each year a notarized certification that shows that the material is of the same composition as originally accepted and has not been changed or altered. If the product is changed or altered, approval of the source in accordance with the above requirements is necessary before using the repair material. If the manufacturer fails to submit the re-certification prior to February 1st, the repair material status will be changed to "pending" and will not be allowed for use on NC Department of Transportation projects.

During this annual re-certification it is a good time for the manufacturer to review the approved products list and check for errors and also inform the Department of any products that have been discontinued.

Random Check Samples and Field Performance: The Department may pull a random check sample from a project and deliver it to the Physical Testing Laboratory for evaluation. If any discrepancy exist between the original submittal and the check sample, further investigation will be necessary. If a reason for the discrepancy is not found the product may be removed from the approved product list.

Failure of a product to perform satisfactorily under job conditions is cause for rejection of the source.