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## **Qualified Products List Product Acceptance Criteria : Rapid-Set Concrete Patching Materials for Portland Cement Concrete, September 18, 2009**

Maine Department of Transportation

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**Maine Department of Transportation  
Qualified Products List Product Acceptance Criteria**

**Rapid-Set Concrete Patching Materials for Portland Cement Concrete**

**Sections: 508 – Membrane Waterproofing, 518 – Structural Concrete Repair, &  
535 – Precast, Prestressed Concrete Superstructure**

Material Criteria

Material may be one of three categories:

**Cementitious Concrete** - a dry non-metallic Portland cement based material for rapid-setting repairs of Portland cement concrete pavements and structures.

**Polymer-Modified Concrete** - defined as hydraulic cement combined with organic polymers that are dispersed or re-dispersed in water, with or without aggregates.

**Polymer Concrete** - a composite material formed by polymerization of a monomer and aggregate mixture in which the polymerized monomer acts as the sole binder for the aggregate.

In order to be considered rapid-setting, the product must reach a traffic-loadable condition (1200 psi compression) in less than three hours.

As of July 1, 2006, only products whose test results have been published by the National Transportation Product Evaluation Program (NTPEP) will be considered for inclusion on the Qualified Products List (QPL). All manufacturers are urged to submit their products to the NTPEP for evaluation. NTPEP has introduced partial electronic application for its Rapid Set Concrete Patching Materials program and will accept applications on a rolling basis with pre-established deadline for submitting to the yearly testing cycle. Applications may be submitted anytime, for NTPEP consideration in the next available testing cycle. Deadline for application is June 10th of each year. It is the manufacturer's responsibility to submit application to AASHTO/NTPEP, thus initiating the product evaluation process. Please contact NTPEP at the following address for more information:

**AASHTO/NTPEP  
NTPEP Program Director  
444 North Capitol Street, NW, Suite 249  
Washington, DC 20001  
Website: [www.ntpep.org](http://www.ntpep.org)**

It should be noted that the NTPEP program provides for uniformity and equivalence testing to allow for periodic re-certification of products previously evaluated by NTPEP. After initial NTPEP testing, products listed on the APL should be submitted to NTPEP for re-certification every five years. Failure to do so may precipitate a product's removal from the APL.

The Maine Department of Transportation will review submitted information to assure conformance with the material requirements shown in Table 1. Following a review of submitted information, the Department may request a sample of the product for testing in the Department's laboratory or for trial use in the field.

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Required Document Submissions

1. Completed Preliminary Information for Product Evaluation Form (available on the MaineDOT QPL website).
2. Applicable MSDS information
3. Any other pertinent literature such as technical data sheets and letters of acceptance from other agencies.

Qualification Criteria

All patching material shall be non-reactive with all primers, bridge deck waterproofing membranes, and thin lift polymer overlay systems. All patching materials shall cure for a 72 hour period prior to application or longer if required by manufacturer (see section 508.04). Manufacturers shall notify the Department at the time of product submission if longer cure times (than 72 hours) are required.

Required Testing

Please consult the latest edition of NTPEP's Rapid-Set Concrete Patching Materials Work Plan for the latest test requirements.

**Table 1 –Testing Requirements**

| Initial Set Time (min.) | 3 hour compressive strength (psi) | 1 day compressive strength (psi) | 7 day compressive strength (psi) | Bond Strength by Slant Shear 1 Day (psi) | Bond Strength by Slant Shear 7 Day (psi) | Expansion @ 300 Cycles (%) or at Termination | Durability Factor @ Termination, M=300 Cycles | Linear Shrinkage 3 days (%) | Coefficient of Thermal Expansion (in/in/°F) |
|-------------------------|-----------------------------------|----------------------------------|----------------------------------|--|--|--|---|-----------------------------|---|
| ≤ 30                    | 1200                              | 3000                             | 4000                             | 1000                                     | 1500                                     | ≤ 0.10                                       | ≥ 90.0%                                       | ≤ 0.10                      | (4 to 8) x 10 <sup>-6</sup>                 |

The Department reserves the right to revise these requirements and withdraw product pre-qualification at any time for any reason without notice.

A letter of re-certification for each product is required annually for a product to remain on the Qualified Products List. Failure to comply with this requirement will result in removal from the QPL.

Doug Gayne, Product Evaluation Coordinator, (207) 624-3268