

MaineDOT Qualified Products Acceptance Criteria

Rapid Hardening (Set) Concrete Patching Materials

Overview

Products on the Rapid Set Concrete Patching Materials (RSCP) QPL are required to be tested through AASTHO's Product Evaluation & Audit Solutions (formerly NTPEP). In addition, RSCPs must remain current with AASTHO 's Product Evaluation & Audit Solutions (formerly NTPEP) policy regarding periodic retesting as required by the program. All submittals shall include the AASTHO DataMine testing number.

Criteria

Material may be one of three categories:

Cementitious Product is a dry, cementitious mortar or concrete material.

Polymer Product is 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. Polymer concrete uses a polymer binder in place of Portland cement.

Polymer-Modified Concrete is Portland cement concrete with polymer solutions added to the mix to achieve certain properties. Like Portland cement concrete, the primary curing mechanism for polymer-modified concrete is hydration of the cement binder.

In order to be classified as fast setting, the product must reach a traffic loadable condition (1200 psi compressive strength) in less than three hours.

Concrete substrates shall be cured in accordance with applicable contract requirements; areas where rapid setting patching materials have been placed shall be cured for a minimum of 72 hours, or as recommended by the product 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. Compressive strength at 28 days should be at least that of the substrate concrete.

Some of the products on the list may also be used for vertical and/or overhead applications. Not evaluated by AASTHO Product Evaluation and Audit Solutions for vertical use. Check with the manufacturer for independent test results for this use.

MaineDOT Standard Specification: Current Version, Section(s) 508 – Waterproofing Membrane, 518 – Structural Concrete Repair, 5343- Precast Structural Concrete, 535 – Precast, Pre-stressed Concrete Superstructure, & 712 – Miscellaneous Highway Material

The Maine Department of Transportation will review submitted information to assure conformance with the material requirements shown in the following tables. Following a review

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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.

Table 1: Test Method Requirements

Property	Cementitious Test Methods	Polymer Test Methods	Polymer-Modified Test Methods
Bond Strength by Direct Tension	ASTM C 1583	ASTM C 1583	ASTM C 1583
Bond Strength Using Slant Shear	ASTM C882	ASTM C882	ASTM C882
Chloride Ion Penetration	AASHTO T 277	AASHTO T 277	AASHTO T 277
Surface Resistivity	AASHTO T 358	Not Applicable	AASHTO T 358
Compressive Strength Neat	AASHTO T 106	ASTM C 579	AASHTO T 106
Compressive Strength Extended	AASHTO T 22	ASTM C 579	AASHTO T 22
Gel Time (Pot Life)	Not Applicable	ASTM C 881	Not Applicable
Length Change	AASHTO T 160	Not Applicable	AASHTO T 160
Linear Shrinkage and Coefficient of Thermal Expansion	Not Applicable	ASTM C 531	Not Applicable
Resistance to Freeze/Thaw	AASHTO T 161	Not Applicable	AASHTO T 161
Tensile Strength	AASHTO T 198	Not Applicable	Not Applicable
Thermal Compatibility	Not Applicable	ASTM C 884	ASTM C 884
Time of Setting by Vicat Needle	AASHTO T 131	Not Applicable	Not Applicable
Time of Setting by Penetration Resistance	ASTM C 403	ASTM C 403	ASTM C 403
Chloride Ion Content	AASHTO T 260	-Not Applicable	AASHTO T 260

Table 2: Performance Requirements, there may not be a requirement for all tests listed in Table 1, compressive strengths listed are for neat or extended products.

Property	Cementitious Requirement	Polymer Requirements	Polymer-Modified Requirements
Bond Strength by Direct Tension (psi), 7 days	Not Applicable	200	Not Applicable
Bond Strength by Direct Tension (psi), 28 days	Not Applicable	300	Not Applicable
Bond Strength Using Slant Shear (psi), 1 day	1000	1000	1000
Bond Strength Using Slant Shear (psi), 7 days	1500	1500	1500
Surface Resistivity	Informational	Not Applicable	Informational
Compressive Strength (psi), 1 hour	Not Applicable	2500	Not Applicable
Compressive Strength (psi), 3 hours	1200	Not Applicable	1200
Compressive Strength (psi), 1 day	3000	3500	3000
Compressive Strength (psi), 7 days	4000	Not Applicable	4000
Compressive Strength (psi), 28 days	Not Applicable	5000	Not Applicable
Gel Time (Pot Life)	Not Applicable	10 minutes	Not Applicable

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Allowable length change increase after 28 days in H ₂ O	+ 0.15	Not Applicable	+ 0.15
Allowable length change decrease after 28 days in air	-0.15	Not Applicable	-0.15
Linear Shrinkage and Coefficient of Thermal Expansion	Not Applicable	ASTM C 531	Not Applicable
Resistance to Freeze/Thaw (Procedure A)	DF > 90 @ 300 cycles	Not Applicable	DF > 90 @ 300 cycles
Resistance to Freeze/Thaw (Procedure B)	DF > 80 @ 300 cycles	Not Applicable	DF > 80 @ 300 cycles

PRODUCT CONFORMITY: At the discretion of MaineDOT, any shipment of product to a MaineDOT location may be tested, such as by infrared or gas chromatography, for compliance with the SDS and uniformity with the formulation of the approved product (where applicable).

NOTE: MaineDOT may require a field evaluation before final acceptance and inclusion on the Qualified Products List (QPL).

A vendor who wishes to have products preapproved for future use should contact MaineDOT's Product Evaluation Coordinator via email at NewProducts.MaineDOT@maine.gov or by calling (207) 557-1788. More information can also be found on our website, including our electronic submittal and recertification forms.

Submittals

Product Submittal Packets shall include the following information:

- [Electronic New Product Submittal](#) form
- Current Technical Data Sheet
- Current Safety Data Sheet (SDS)
- Third Party, Independent Test Results OR AASTHO Product Evaluation & Audit Solutions (formerly NTPEP) testing ID for those products requiring this testing

Incomplete submittals will not be evaluated for inclusion on MaineDOT's Product Lists.

All reports shall be issued and signed by an authorized laboratory representative. The report shall include date of testing, product name, and the physical and/or chemical requirements stated herein.

Product Changes

Any change in a product, such as formulation, shall require re-testing (through AASTHO Product Evaluation & Audit Solutions (formerly NTPEP) if required) or independent, third-party lab

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Manufacturers shall notify MaineDOT of products changes and resubmit as a new product for re-evaluation, failure to do so may result in removal of product from MaineDOT's QPL.

Manufacturers shall submit, for re-evaluation, an updated independent analytical laboratory report (or AASTHO Product Evaluation & Audit Solutions (formerly NTPEP) testing ID) prior to approval or purchase by MaineDOT.

Recertifications

MaineDOT requires re-certification by all manufacturers every five years (except for electrodes used for field welding which are recertified every year) to ensure that product names and formulations have remained the same since the product was originally placed on this list and that products are still relevant and in production. Where applicable, this shall include the most recent AASTHO Product Evaluation & Audit Solutions (formerly NTPEP) testing ID. Additionally, AASTHO Product Evaluation & Audit Solutions (formerly NTPEP) provides for retesting products. A lapse of AASTHO Product Evaluation & Audit Solutions (formerly NTPEP) testing/audit schedule as set forth in the associated workplan shall result in disqualification of the product.

Manufacturers of any products requiring MASH testing must contact MaineDOT Product Evaluation Program of any changes to their products. Manufacturers are responsible for tracking their recertification dates, reminders will not be sent. Failure to recertify products may result in removal from the QPL. Recertifications can be completed using the [Electronic Certificate of Compliance](#) found on our website.

Other Information

The Department continues to evaluate its Acceptance Criteria and reserves the right to revise the criteria and/or withdraw product qualification at any time for any reason without notice.

Furthermore, the ability of a product to meet these requirements does not necessarily guarantee addition to the Qualified Products List. Reminder that, products once placed on the Qualified Products List are to be considered prequalified for use only, meaning that they have undergone preliminary review for compliance with MaineDOT, and AASHTO specifications. As with all products, final approval rests with the Designer, Project Manager, Supplier and/or Resident to determine if a product best suits the need of a particular project.

If you are experiencing difficulties reading or printing this page, or have questions regarding the Qualified Products List website, please contact the Product Evaluation Program Coordinator at (207) 557-1788 or by email at: NewProducts.MaineDOT@maine.gov