

MaineDOT Qualified Products Acceptance Criteria

Asphaltic Plug Joints

Overview

This document establishes MaineDOT's requirements for nonmodular, expansion devices otherwise known as asphaltic plug joints. The asphaltic plug joints shall consist of a system including bridge joint binder material, aggregate, backer rod, bridging plate, elastomeric concrete header material, and polysulfide joint sealant conforming to the details and dimensions shown on the Plans, in accordance with these Specifications, and as directed by the Resident.

Criteria

The following are materials which are incorporated in or used in conjunction with approved asphaltic plug joint systems.

1. Asphaltic Binder: Binder shall meet or exceed requirements as noted below and consist of a hot applied, thermoplastic polymeric modified asphalt with the properties listed below when tested in accordance with the following ASTM methods.

PROPERTY	REQUIREMENT	TEST METHOD
Softening Point	180 °C (206.6 °F) Minimum	ASTM D36
Tensile Adhesion @ 77 °F (25 °C)	700% Minimum	ASTM D3583
Ductility @ 77 °F (25 °C), cm	40 cm Minimum	ASTM D113
Penetration, 1 mm		
77°F (25°C), 150 g, 5 seconds	75 Maximum	ASTM D3407
0°F, 200 g, 60 seconds	10 Minimum	
Flow 5 hrs. @ 140°F, mm	3.0 Maximum	ASTM D3407
Bond @ 20°F	pass 3 cycles	ASTM D3407
Resilience @ 77°F (25 °C)	40 to 70%	ASTM D3407
Asphalt Compatibility @ 140 °F (60 °C)	Pass	ASTM D3407
Recommended Pouring Temperature	380 to 390 °F	
Safe Heating Temperature	400 °F Minimum	

2. Backer Rod: Backer rod shall be a cylindrical closed cell expanded polyethylene foam rod, with a diameter of 150 percent of joint opening width, capable of withstanding the temperature of the hot binder materials and having the following properties.

PROPERTY	REQUIREMENT	TEST METHOD
Density, lb/ft ³	2.0 min.	ASTM D1622
Tensile Strength, psi	20 min.	ASTM D1623
Water Absorption, percent of weight.	1.0 max.	ASTM C1016

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3. Bridging Plate: Bridging plate shall be ASTM A36 steel, minimum of 1/4 inch thick and galvanized. Holes for the centering nails shall be approximately 1-foot center to center along the centerline of plates.
4. Centering Nail: Nail shall be 16d or larger and hot dip galvanized in accordance with ASTM A153.
5. Aggregates: Aggregate shall be crushed, double-washed and dried granite or basalt, and meet the ASTM C33 Size No. 6 gradation. This aggregate shall also be used for top dressing on the finished joints.
6. Plastic Compound: Plastic compound used for repairing overcuts in bituminous concrete overlays shall be a two-component liquid with a synthetic resin base. It shall have a minimum viscosity of 3,500 cps at 77°F and a maximum viscosity of 65,000 cps at 25°F. The plastic compound shall be cured by the addition of a specific hardener. Sufficient hardener shall be used to cure the plastic compound in approximately 30 minutes at 77°F. It shall have sufficient strength and resiliency to withstand stresses set up by vibration, expansion, and contraction due to temperature changes. It shall also be resistant to most chemicals and solvents, including most salts, acids, and hydrocarbons.

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

Submittals

Product Submittal Packets shall include a COMPLETETED:

- New Product Evaluation 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.

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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. 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.

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.

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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