QCML Criteria

Concrete Penetrant Sealer

For Concrete Sealers to be listed on the Qualified Construction Materials List (QCML), a product must meet the requirements of Subsection M9.15.0 of MassDOT's Standard Specifications. This includes a requirement for a product to be evaluated by AASHTO's National Transportation Product Evaluation Program (NTPEP).

NTPEP Testing

MassDOT Research & Materials (RMS) shall evaluate the NTPEP data. The following criteria must be met as part of the product submission:

- NTPEP testing shall be performed in accordance with the Concrete Coating Systems (CCS) workplan.

MassDOT Requirements and Testing

Manufacturers may request MassDOT evaluation once the NTPEP testing cycle is complete. The following criteria must be met as part of the product submission:

- The manufacturer of the Concrete Sealer must certify that the product is in accordance with M9.15.0.
- NTPEP test data shall demonstrate that the concrete sealer meets the criteria in the table below when tested in accordance with AASHTO T 384.
- A 1-quart sample shall be sent in for FTIR testing to:

  MassDOT Research and Materials
  Attn: QCML
  5 Macadam Rd.
  Hopkinton, MA 01748

Product Listing, Expiration, and Re-Approval

Once approved, the Concrete Sealer will be listed on the MassDOT QCML. The product shall remain on the approved list for five (5) years unless one of the following occurs:

- If the manufacturer does not have the product reevaluated by NTPEP in accordance with the NTPEP CCS workplan.
- If the product's technology changes.
  - If the product formulation or technology changes, the manufacturer shall notify MassDOT RMS.
  - Manufacturers must resubmit products to NTPEP for testing upon any reformulation of the product.
- MassDOT RMS determines that the product no longer meets the minimum requirements.

A written request for re-approval must be submitted to the Department at least 60 days prior to the expiration date for the product to remain on the QCML.

PROPERTY	REQUIREMENTS
Moisture Vapor Transmission, DRC	≥ 80 %
Waterproofing Performance/Saltwater Immersion, SAR	≥ 90 %
Chloride Permeability	≥ 90 % reduction
Total Chloride Ingress	≥ 85 % reduction in chloride absorbed
Alkali Resistance	≥ 90 % reduction
Depth of Penetration	6.35 mm, minimum
Coating Thickness	User Specifications
Coating Bond Strength/Adhesion	≥ 85 % retention of bond strength pre-exposure
Weathering/Saltwater Resistance	≥ 85 % of non-weathered
Skid Resistance vs. untreated Weathered	 ≥ 85 % of non-weathered and/or ≥ 90 % BPN before treatment
Drying Time: Gel Time Tack-Free Time Final Set	User Specifications
Abrasion Resistance	≥ 85 %
Freeze Thaw	No visible cracking, spalling, or powdering. FTR ≥ 90 %
Saltwater Absorption post Freeze Thaw	≥ 85 % of non-freeze thaw exposed
Testing shall be in accordance with AASHTO T 384.	