

MnDOT Membrane Waterproofing System Approval Procedure
MnDOT 3757
September 22, 2005

This Specification covers a membrane waterproofing system to be used for waterproofing below-grade joints in concrete structures, tunnels and other below grade applications on concrete structures.

1. Send a personalized submittal package to:

Allen Gallistel
MnDOT Office of Materials and Road Research
Chemical Lab Director
1400 Gervais Ave.
Maplewood, MN 55109

Telephone: 651-366-5545
allen.gallistel@state.mn.us

2. Submittal package should include:

- Manufacturer contact name, address, phone number and email address
- Submittal letter naming primer, rubberized asphalt membrane on a cross-laminated polyethylene carrier film, mastic and protection layer.
- Product Data Sheets on all components including application directions
- Material Safety Data Sheets on all components
- Performance History References in a cold climate.
- One foot square piece of membrane and Infrared Spectra of membrane and carrier film.
- Certification that products meet MnDOT 3757, EPA and MPCA requirements for heavy metals and VOC
- Provide independent lab testing on the membrane waterproofing components Specific Requirements listed below:

Specific Requirements

1. Primer- The primer shall be a solvent-based primer specially formulated for use with approved waterproofing system. The primer shall meet EPA VOC Standards for Architectural Coatings.
2. Membrane

Property	Specification	Test Method
Thickness, mils	56+	ASTM 3767-Method A
Tensile Strength, MPa (PSI)	1.7 (250)+	ASTM D-412 Die C
Elongation, %	300+	ASTM D-412 Die C
Composition	Rubber Asphalt	Infrared Scan

3. Carrier Film

Property	Specification	Test Method
Thickness, mils	4+	ASTM 3767-Method A
Composition	Polyethylene	Infrared Scan

4. Composite Membrane

Property	Specification	Test Method
Pliability, 180° bend, 1” mandrel @ -25 °F (-32 °C)	Unaffected	ASTM 146
Permeance, Perms	.05 -	ASTM E96, B
Peel Adhesion, lbs/lin inch	5+	ASTM D 903 Modified
Water Absorption, %	0.1-, 72 hours	ASTM 1970

- Upon successful performance of the lab evaluation, the submitted membrane waterproofing system will be placed on MnDOT’s Approved Products List.
- Any un-approved change to system formulation will result in removal from the Approved Products List.

State of Minnesota
Department of Transportation
New Product Preliminary Information Form

INSTRUCTIONS: Answer ALL questions. Where a question is not applicable enter "N/A".
Attach additional sheet(s) as required with reference to item number.

Date: _____

1. Trade Name _____

Manufacturer _____

Phone No. (_____) _____

Address _____ City _____ State _____ Zip _____

Patent pending Yes ____ No ____ Patent No. _____

2. Local Distributor _____ Phone No. (_____) _____

Address _____ City _____ State _____ Zip _____

3. Recommended Primary
Use: _____

4. Describe product, material equipment or process:

5. Describe any limitations or use restrictions:

6. Material composition (attach laboratory test results, storage requirement, shelf life,
Material Safety Data Sheet and disposal procedure):

7. Outstanding feature or advantage claimed:

8. Date introduced on market _____. Alternate for what existing product?

9. a. Total Estimated Cost Per Unit Material (including delivery) _____
b. Total Estimated Cost Per Unit Furnished and Installed _____

10. Does product meet requirements of any of the following specifications?
(Give specific number.)
AASHTO _____ ASTM _____ Fed. Spec. _____ Mn/DOT _____
Others (state and attach specifications) _____

11. Indicate whether this product has been evaluated by a national or regional product
evaluation program? (Attach any results.)
_____ HITEC _____ NTPEP _____ Others (specify)

12. Cite use by other agencies and persons to be contacted concerning experience with use,
including how many years used, and whether use has been experimental or routine (list
names, titles, mailing address and phones):

13. Note here and attach any test results, reports, etc., from the organizations above:

14. Is a documented quality control process available for this product?

15. Who has been contacted within Mn/DOT about this product? _____

Has this person been sent a copy of this form? _____

16. Additional comments: _____

Name and Title of person completing this form:

Address, State, Zip:

Date: _____ Phone: (_____) _____

Email Address: _____

_____ Manufacturer _____ Representative

Mn/DOT Office of Environmental Services
Hazardous Evaluation Process

The Mn/DOT Office of Environmental Services developed the Hazard Evaluation Process (HEP) as a tool to determine potential environmental impacts that could result from use of a product and consequently, if the product is acceptable for use on Mn/DOT infrastructure. The following information must be submitted by the vendor in order for Mn/DOT to complete the HEP:

1. Vendor information
 - a. Name of Company
 - b. Address
 - c. Technical Contact Name and Telephone Number
 - d. Application Date
 - e. Product Trade Name
 - f. Product Chemical Name
 - g. Product Data Sheet
2. Provide Material Safety Data Sheets for all chemicals in the product/waste material.
3. Regulatory Approvals & Status:
 - a. Licenses
 - b. Approval
 - c. Permits
 - d. TSCA Listing
4. Chemical Status:
 - a. Provide Individual Chemical & Physical Properties (OECD¹ Methods 102, 103, 104, 105, 111, 112, 113, 117, 121);
 - b. Identify chemicals with molecular weights greater than 1000 Daltons (OECD Methods 118, 120 or equivalent);
 - c. Certification that final product would not be considered a hazardous waste under Minnesota Rules Chapter 7045 if disposed of unused;
 - d. Names and Chemical Abstract Numbers (CAS numbers) of the reportable substances in the product (40 CFR 302);

The following product-specific information must be submitted if known. If information for a representative test is unknown it must be stated as such.

EPA SW-846 test method information can be found at:

<http://www.epa.gov/epaoswer/hazwaste/test/main.htm>

OECD product test method information can be found at:

<http://www.oecd-ilibrary.org/>

U.S. EPA Office of Prevention, Pesticides and Toxic Substances Harmonized Test Guidelines can be found at: <http://www.epa.gov/ocspp/pubs/frs/home/guidelin.htm>

- a. Leach test results (EPA Method 1311 and OECD Method 312 with subsequent analysis for test substance or equivalent method);
- b. Biodegradation (OECD Method 301C, 301D, 302C, 304A, 307, 309 or equivalent method);
- c. Ecotoxicity to include three trophic levels (OECD Method 201, 207, 208, 210, 211 or equivalent method, OPPTS Method 850.5400, 850.1300, 850.6200, 850.4100, 850.4150, 850.1400 or equivalent method);
- d. Other available test data that provide individual chemical fate, exposure and pathway information.

¹ Organization for Economic Co-operation and Development methodology for product testing is preferred but equivalent methods may be acceptable.

Questions regarding the Mn/DOT Hazard Evaluation Process can be sent to:

Robert.Edstrom@state.mn.us