



Minnesota Department of Transportation
Approved Epoxy Program
August 28, 2008

The Minnesota Department of Transportation (Mn/DOT) will only accept epoxies from the Mn/DOT Approved Products List. This applies to all epoxy sold to contractors for use on Mn/DOT projects.

For an epoxy to be approved by Mn/DOT, a Manufacturer must demonstrate an ability to manufacture epoxies meeting the requirements of ASTM C881 for the type, grade, and class of material needed to meet the conditions at the time of placement.

The contractor or other purchaser and subsequently the inspector shall verify that the epoxy is adequate for the use intended. Details of surface preparation, mode of application, and grades of dry and clean silica sand used in conjunction with them should be obtained by the project engineer from the Concrete Office prior to starting the epoxy operation.

Epoxies Categories:

Epoxy Bonding Agents

- 1) Used to bond fresh concrete to old concrete

Epoxy crack sealers

- 1) Used for crack sealing in non-load bearing applications
- 2) Used for crack sealing in load bearing applications

Epoxy Penetrant Sealers

- 1) Used to seal concrete surfaces which have received moderate rain damage or have a weak surface.

Epoxy Patching Compounds

- 1) Used to repair concrete surfaces which have received heavy rain damage and for filling low spots.
- 2) Moisture insensitive epoxies should be used when moisture is present

Protective epoxy coatings for bridge seats

- 1) Color shall be light gray, clear or neutral. Moisture compatible.

The Manufacturer must comply with the following:

A. Testing

The supplier must provide test results from an independent laboratory verifying the epoxy meets ASTM C881.

B. Reference Samples

Manufacturer shall submit a small sample for approval to the Mn/DOT Materials Lab along with an infrared spectrum (IR) of the epoxy. Also include a Materials Safety Data Sheet (MSDS) and a Technical Data Information Sheet.

C. Field Acceptance

If the above criteria are met successfully, the epoxy will be given tentative approval, contingent upon satisfactory performance in the field.

D. Environmental Acceptance

The product will be evaluated by the Mn/DOT Office of Environmental Services using the Hazard Evaluation Process (HEP) to determine any potential impacts that could result from use of the product. See the attached HEP for information that must be submitted before the product will be evaluated.

E. Non-Compliance

If future samples of these materials do not meet Mn/DOT specifications, the product may be removed from the approved product list.

Please also note that it is the manufacturer's responsibility to immediately notify Mn/DOT if any product is changed or modified, or if the product is no longer being produced.

The list of approved products may be found on the Mn/DOT Concrete website at <http://www.dot.state.mn.us/products/index.html>

Reference materials and certification shall be sent to:

Minnesota DOT
Attention: Mn/DOT Concrete Engineering Unit
1400 Gervais Ave.
Maplewood MN 55109

Tel. (651) 366-5575
Fax (651) 366-5530

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.org/home/> or http://www.oecd.org/document/23/0,2340,en_2649_34379_1948503_1_1_1_1,00.html. U.S. EPA Office of Prevention, Pesticides and Toxic Substances Harmonized Test Guidelines can be found at: <http://www.epa.gov/opptsfrs/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@dot.state.mn.us