

MnDOT Traffic Signal Pole Duplex Paint Qualification Procedure

1. Send a personalized submittal package to:

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

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

2. Submittal package should include:

- Completed New Products Application Form (Attached)
- Manufacturer contact name, address, phone number and email address Submittal letter naming intermediate and finish coat trade names Product Data Sheets on all components
- Material Safety Data Sheets
- References from other public agencies that have used the submitted system
- Certification that products meet Minnesota Statute 115A.9651 requirements for heavy metals
- Pint of each component for Infrared Spectrum matching. Any un-approved change to system formulation will result in removal from the Approved Products List. These Infrared Scans will be used as references for Quality Assurance Testing.
- AASHTO R-31 Performance Testing Results by an MnDOT approved testing facility
- Completed MnDOT Office of Environmental Services Hazardous Evaluation Process
- Documentation (attached)

3. AASHTO R-31 Performance Testing –

Test Panels shall be prepared according to AASHTO R31- Standard Practice for Evaluation of Coating Systems with Zinc-Rich Primers except 6 – 4” x 6” x ¼” steel test panels (3 Duplex coating, 3- Control) shall be fabricated of the same alloy used in the signal pole manufacture. The panels shall be galvanized per MnDOT specification and coated according to manufacturer’s instructions. Description of surface preparation and a mill test report verifying the metal alloy shall be included in submittal package. For testing purposes the color of the final topcoat shall conform to Federal Standard No. 595, Color Chip No. 14062 (green). Report containing test data and photos shall be sent directly to MnDOT.

Tests to be performed are Test 3 – ASTM D 5894 Cyclic Weathering Resistance Test, Test 5 – Adhesion Test, and Test 6 – Freeze-Thaw Test listed in AASHTO R31 along with ASTM D 522 – Mandrel Test. The three control test panels shall be coated with a control zinc rich primer / epoxy intermediate / polyurethane topcoat system.

- Test 3 – ASTM D 5894 Cyclic Weathering Resistance Test shall be ran for 6 - 336 hour cycles for a minimum of 2016 hours of exposure. Photos should be taken of each panel after each cycle. Blistering and rust creep at the scribe shall be reported per AASHTO R31. Coating shall receive a rating of 10, no blistering and an average maximum rust scribe value of less than 1mm. Color change measured in delta E (CIE Lab 1976) and gloss retention shall be reported.
 - Test 5 – Adhesion Test shall be run per AASHTO R31.
 - Test 6 – Freeze-Thaw Test shall be run per AASHTO R31.
 - ASTM D 522 – use method B, one inch (1”) mandrel
4. Manufacturer contact will be notified of approval status upon completion of the review of submittal package.
 5. Upon meeting acceptance criteria, the submitted paint system will be placed on MnDOT’s 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