



*****GENERAL REWRITE – PLEASE READ CAREFULLY.*****

**INSPECTION & ACCEPTANCE
EPOXY RESINS**

GENERAL

Epoxy resins shall meet the requirements of the applicable Iowa Department of Transportation Specifications.

ACCEPTANCE

Acceptance of epoxy resins for use of Department of Transportation projects will be on the basis of manufacturer and brand name approval.

Approved manufacturers and brands names for three different types of applications are listed in Appendixes A, B and C.

Appendix A lists the approved manufacturers and brand names of epoxy injection resins for delaminated bridge deck repair. Appendix B lists the approved manufacturer and brand names of epoxy injection resins for crack repair, which are intended for repair work on cracked concrete structures such as abutments, wing walls, piers, etc. Appendix C lists the approved manufacturers and brand names of epoxy resins for sealing the ends of pre-stressed concrete beams.

MANUFACTURER & BRAND NAME APPROVAL

To obtain approval for epoxy resins under Appendixes A, B and C, the manufacturer shall submit the following items to the Office of Materials in Ames, Iowa:

- Product identification including brand name and product number
- Current Material Safety Data Sheet (MSDS)
- Complete manufacturer recommendations for usage
- A representative sample of approximately 1 gallon (3.8 liters)

TEST EVALUATIONS FOR APPROVAL

The laboratory evaluation for approval under Appendixes A and B shall consist of the following tests:

- Pot Life: AASHTO T 237-73, Sec. 3 and 4, -- 12 minutes, minimum
100 grams of mixed epoxy in a 250 ml polypropylene plastic beaker
- Viscosity: AASHTO T 237-73, Sec. 8-10, except that a Brookfield viscometer, Model LV or LVF, may be used, -- 10 poises maximum.

- Salt Resistance Test: A specimen made from the mixed components and cured for 21 days at room temperature shall be immersed in a 10% NaCl solution for 28 days. Any evidence of softening of the specimen shall constitute failure.
- Bond Strength (Slant Shear): ASTM C 882 – 2-day moist cure: 1000 psi, minimum, as required by ASTM C 881.
 - (1) Soaked two concrete sections in water for 24 hours, removed all water by shaking, and allow to air dry for 15 minutes.
 - (2) Thoroughly mix components of epoxy in the proportion recommended by manufacturer. A mixing time of 3 minutes should be sufficient.
 - (3) Carefully align and bond two concrete sections. Make sure the joint is entirely filled. Keep the bonded joint for 48 hours in laboratory air condition.
 - (4) Cure the prepared joint specimens in the moist room for 48 hours
 - (5) Test the specimens according to ASTM C 39.

The laboratory evaluation for approval under Appendix C shall consist of the following tests:

- Bonding Strength (Slant Shear): ASTM C 882 – 2-day moist cure: 1000 psi, minimum.

The test result from an independent laboratory is acceptable.

Approval of epoxy resins may be withdrawn because of deficient monitor test results, product changes made after original approval, or unsatisfactory field performance.

CERTIFICATION

The manufacturer shall file a certification at the beginning of each calendar year stating that the material supplied during that year shall be identical with the formulation previously tested and approved by the Office of Materials.

MONITOR SAMPLING & TESTING

The Office of Materials may sample and test epoxy resins at any time to verify compliance with specification requirements.