Epoxy and Resin Based Adhesive Bonding Systems (ERB)

Product Acceptance Criteria
Maine Department of Transportation

Manufacturers/suppliers submitting an epoxy-based anchoring system to MaineDOT shall include, in addition to the standard product submittal documents, signed and witnessed certified test reports from an independent testing lab along with a signed and witnessed statement on the manufacturer's letterhead verifying compliance with the following criteria:

That these products meet the requirements of AASHTO M 235, Type IV, Grade 2 or 3.

Products shall be classified as 100% solids and be a standard two part (A+B) type epoxy. Mixing ratios shall be clearly stated in the product submission as well as estimated working or open times.

Physical Requirements

Viscosity	
Grade 2: Medium viscosity	20 P, min.
Consistency	
Grade 3: Non-sagging consistency	¼-inch, max.
Gel Time	
When automatic proportioning, mixing and dispensing equipment are used.	30 minutes max.
When bulk materials are used.	30 minutes min.
Bond Strength, 14 days (moist cure)	1,500 psi, min.
Water Absorption, 24 hours	1 percent, max.
Heat Deflection Temperature, 7 days	120ºF, min.
Linear coefficient of shrinkage on cure	0.005 inches / inch max.
Compressive Yield Strength	10,000 psi, min.
Compressive Modulus	200,000 psi, min.
Tensile strength, 7 days (not req. for Grade 3 systems)	7,000 psi, min.
Elongation at break	1 percent, min.

Epoxy systems are further characterized by “Class” indicating temperature range of the surface of the hardened concrete to which the anchoring system is to be applied (see table below). This temperature may be considerably different from that of the air. Where unusual curing rates are desired, it is possible to use a class of bonding agent at a temperature other than that for which it is normally intended. For example, a "Class A" system will cure rapidly at room temperature. Manufacturer shall clearly state in their product submission which temperature class(s) their product meets. Products may meet the requirements of one or more temperature class.

Class A	For use below 40ºF.
Class B	For use between 40ºF and 60ºF.
Class C	For use above 60ºF.

Epoxy and Resin Based Adhesive Bonding Systems (ERB)

Product Acceptance Criteria

Maine Department of Transportation

Anchoring adhesives may be un-pigmented, or gray in color when mixed.

Field and laboratory testing may be required to be performed as a prerequisite to acceptance at the time of product submittal, or may be required prior to use of the product on a project to demonstrate pull-out resistance. Pull out tests when required shall be performed in accordance with the requirements of ASTM E488.

When required, due to specific project needs, for example: anchors under constant tension, creep tests shall be performed according to (AC58) Acceptance Criteria for Adhesive Anchors in Masonry Elements as set forth by the ICC Evaluation Service, Inc.

The ability of a product to meet these requirements does not necessarily guarantee addition to the Qualified Product List. Further, products once placed on the Qualified Products List are not to be considered "Approved for Use" but rather, "Prequalified for Use" meaning that they have undergone preliminary review for compliance with MaineDOT and AASHTO specifications. Final approval rests with the Designer, Project Manager, and Resident to determine if a product best suits the need of a particular project. All products on our Qualified Products List of Chemical Anchoring Products must be re-certified by the manufacturer each year to remain on the List, failure to do so will result it its removal.

Project personnel are encouraged to perform field verification testing prior to use on their project. Failure of any product on the Qualified Products List to perform as stated will be grounds for removal from the List. Project personnel are encouraged to fill out the Product Evaluation form, available on the QPL website to provide valuable feedback on how products have performed in the field.

Last updated: June 27, 2016