EPIWELD® 300

Auto-Mix cartridge two-part high mod gel epoxy

Advantages:

- Simple cartridge mixing, no worries about mixing ratios or extra tools.
- All accessories are disposable.
- No equipment to clean.
- High modulus
- High strength
- Excellent flow
- Moisture insensitive
- V.O.C. compliant
- Fast setting

Coverage:

- DUAL CARTRIDGE: One cartridge yields 21.2 fl.oz. (627ml)

See Coverage section for full details

Packaging:

Case lots only

- DUAL CARTRIDGE: 12 Cartridge Sets/Units per case

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Revision: February 2009
Supersedes all previous publications

Product Description

EPIWELD® 300 is a 100% solids, rapid setting epoxy system designed to achieve the strongest anchoring possible in solid concrete, hollow block, and masonry. Unlike many other chemical epoxy systems EPIWELD® 300 uses the latest polymer technology; it has no strong offensive odor, is environmentally gentle, and is considered non-carcinogenic. It does not contain styrene that is hazardous to the environment (ozone layer) and your health, or any volatile chemicals. It is not flammable and is safe to handle. EPIWELD® 300 has a high modulus of elasticity that allows it to perform well when exposed to vibrations or shocks, and allows structural bonding to dry and damp concrete surfaces that are free of standing water or hydrostatic water pressure.

EPIWELD® 300 is packaged in a pre-measured, 21.2 fluid ounces (627 ml), dual cartridge set which dispenses the epoxy from a specially made caulking type dispensing gun at a 1:1 ratio. Cartridge sets are molded with the strongest plastics available to help ensure that you will not experience leaking problems or broken sets. Inside diameters have extremely tight tolerances to ensure a positive seal between the cartridge and the plastic plungers. The cartridge sets are translucent allowing you to see how much epoxy is remaining. As the epoxy flows through a 5/8-inch (15.9mm) mixing nozzle both components are thoroughly mixed. The mixing nozzles are designed with 18 mixing elements to thoroughly combine the components of the dual cartridge automatically. This process allows partial use of a cartridge, since the components are housed separately until they pass into the mixing nozzle. The EPIWELD® DISPENSING GUN (sold separately) is made of heavy gauge steel for heavy-duty use and designed with a torque screw system with stabilizing rods to exert pressure equally to both chambers of the dual cartridge system.

Basic uses of EPIWELD® 300 include: anchoring bolts, dowels, pins and rods in concrete, bonding fresh concrete to hardened concrete, steel, or other materials, and bonding hardened concrete to hardened concrete or other materials.

Installation

Before using this product, please refer to the Material Safety Data Sheet for additional information. Proper handling precautions MUST be followed. The conditions of use, handling, and application of this product and information (whether verbal or written), including any suggested formulations and recommendations, are beyond Lambert Corporation's control. Therefore, it is imperative that testing be performed to determine satisfaction and suitability for intended use and health, safety, and environmental issues. The following information is meant as a guideline of best industry practices. While Lambert Corporation does suggest adherence to these guidelines, unforeseeable variables and/or developed successful installer practices may cause variation in methods and/or results.

Surface Preparation-Concrete

The success of any adhesive application is directly proportional to the extent of substrate preparation and the care in application. Surface must be clean and structurally sound. All concrete surfaces to be bonded, coated, or repaired should be dry for best results; however, a damp, surface-dry condition is acceptable. Concrete must be free of standing water. Mechanical scarifying to remove laitance and expose sound, coarse aggregate will result in optimum bond. Non-porous, dense or glassy type concrete surfaces must be roughened by sandblasting or etched with a solution of muriatic acid and neutralized. New concrete must be permitted to age before an epoxy is applied. Adequate aging or curing time is generally 28 days or more.

Surface Preparation-Steel

Exposed rebar, anchor bolts, etc. to be bonded must be free of rust, paint, oil, and dirt.

Metals should be sanded or sandblasted to a commercial blast finish. If mechanical cleaning is impractical, chemical cleaning should be used, such as a 10% solution of muriatic acid followed by a water rinse and neutralization. A lightly abraded surface gives a better mechanical key.

Application

Prior to using the EPIWELD® 300 remove retaining nut, remove plugs, install static mixing head and secure firmly with retaining nut. Cut off tip at desired opening. Dispense small quantity of EPIWELD® 300 in a separate container to ensure the flow and color is uniform-no streaks. Be sure both sides flow evenly. For ease of dispensing at temperatures below 70°F (21.1°C), warming is necessary. Use LAMBERT EPIWELD® DISPENSING GUN for cartridge epoxy dispensing. When finished dispensing, RELEASE THE PRESSURE AND REMOVE NUT AND STATIC MIXING HEAD. Replace correct plugs in A & B and replace the holding nut. Allow a minimum of 8 to 24 hours for full cure of the epoxy.

Limitations

Condition EPIWELD® 300 components to 70°F (21.1°C) prior to use. Epoxies stored below 70°F (21.1°C) will cause the epoxy to thicken substantially making it difficult to blend the two materials and obtain the proper mating of resin and hardener. If the epoxy is below 70°F (21.1°) at time of dispensing the epoxy becomes much thicker. When this occurs the epoxy will not properly flow. The tubes may rupture or the epoxy may flow out of the bottom of the set rather than the nozzle. The dispensing gun rods may also be damaged by the excessive force needed to start the epoxy flow. EPIWELD® 300 may be heated by the sun, heat gun, truck heater, or engine hood. Be careful not to melt the plastic tubes.

Gel-time of mixed EPIWELD® 300 on a substrate temperature of 78°F (25.6°C) is about 8-10 minutes. Gel-time is dependent upon material and substrate temperatures and the quantity catalyzed. The greater the mass, the shorter the gel-time. Increased mass and temperature results in higher exothermic and shorter gel-time. Higher temperatures decrease gel-time, lower temperatures lengthen gel-time.

EPIWELD® 300 should not be used at temperatures below 40°F (4.4°C) or over 100°F (37.8°C). During cold periods, temperatures should be 40°F (4.4°C) and rising at time of application. New concrete or other materials being bonded should be placed while EPIWELD® 300 is still tacky. If it dries, a fresh coat must be applied. Do not apply to wet, “puddled” areas. New concrete surfaces being bonded must be cured a minimum of 28 days which reduces substrate shrinkage and bond failure.

Due to many variables in bonding to damp or dry surfaces, be certain to test application under the same conditions as the full-scale work. When bonding to damp or slightly wet surfaces, be certain to test if dampness or moisture is caused by hydrostatic pressure prevalent in, on, or below grade application. Moisture passing through the substrate by pressure during application and curing of epoxy will cause bond failures.

Structural Adhesive

Apply the EPIWELD® 300 to mating or non-mating prepared substrates. Thoroughly work into the substrate for positive adhesion. Secure the bonded unit firmly into place until the adhesive is cured. Glue line should not exceed 1/4-inch (6.4 mm) in thickness..

Anchoring Bolts, Rebar, Dowels, Pins

For efficient transfer of stress, the hole should be no greater in diameter than 1/4-inch (6.35mm) larger than the bolt, rebar, dowel, pin to be embedded. Depth of embedment is 10 to 15 times the bolt, rebar, anchor diameter.

Hole Preparation:

Holes should be clean and free of debris. Air or water flushed rotary percussive drilling equipment is recommended. Holes should be brushed with a nylon or wire brush to dislodge drilling debris. Use compressed air to clean out the hole. Diamond drilled holes are not recommended as they do not provide a rough hole profile which establishes the epoxy anchorage. Concrete should be 28 days or older.

Bolt Placement:

Fill hole from bottom 5/8 to 3/4 full of epoxy. After placing EPIWELD® 300 in the hole, insert the bolt, rebar, etc. with a twist action for maximum contact between EPIWELD® 300 and hardware and expulsion of air voids. Position hardware with wedges, jigs, etc. until initial cure.

Technical Data

Applicable Standards

- Florida Dept. of Transportation Specification Epoxy Compounds Section 937
- Georgia Dept. of Transportation Section 886, Type III
- EPIWELD® 300 meets and exceeds ASTM C881, Type I, II and V, Grade 3, Class B and C. Also meets the ICC and ICBO

Properties

Mixing Properties (Parts)		1 A to 1 B by volume
Color:	Part A Resin	White
	Part B Hardener	Gray/Black
	Mixed color	Concrete Gray
Viscosity :		Gel 180,000 CP
Gel Time:	8-10 min. @ 80°F (26.7°C) with a 20 gram mass.	
Minimum Load Time:		4 hours @80°F (26.7°C)
Compressive Strength:	@ 77°F (25°C) Neat Epoxy ASTM D - 695 14 days 13,000 PSI (89.6MPa)	
Tensile Properties:		ASTM E - 488
	14 days Tensile Strength 8,500 PSI (58.6 MPa) Elongation at Break - 2.5%	
Hardness, Shore-D:		85
Water Absorption, 24 hours:		0.17%

Pull Out Test of Anchors: ASTM E - 488

Anchor Dia. (In)	Type Failure	Ultimate Load At Failure *
3/8"(9.5 mm)	Concrete	9,334 lbs (4233.8kg)
1/2"(12.7 mm)	Concrete	14,500 lbs (6577.1kg)
5/8"(15.9 mm)	Concrete	21,804 lbs (9890.1kg)
3/4"(19.1 mm)	Concrete	29,109 lbs (13,203.6kg)
7/8"(22.2 mm)	Concrete	37,769 lbs (17,131.7kg)
1" (25.4 mm)	Concrete	46,430 lbs (21,060.3kg)

72 hours Cure Time - 3000 PSI (20.7 MPa) Concrete

* Values shown are average ultimate values and are offered only as a guide and are not guaranteed in any way. A safety factor of 4:1 or 25% is generally accepted as a safe working load. Refer to applicable codes for the specific safe working ratio. These results were witnessed by an independent testing lab and meet all ASTM E-488 test methods for testing anchors in concrete. GRADE B 7 (A 193) threaded rod was used with no failures during tensile tests.

Coverage

- DUAL CARTRIDGE: One cartridge yields 21.2 fl.oz. (627ml)

Clean-Up & First Aid

Clean-Up

Clean all tools and equipment immediately after use with lacquer thinner. Do not allow epoxy to harden on tools or equipment. Soap and hot water may be used in some cases.

First Aid

Avoid breathing possible fumes, mists and vapors that can cause severe respiratory damage. Use of NIOSH approved breathing apparatus is required for more than minimal exposure. Always work in areas with adequate ventilation to allow dissipation of amines and other chemical fumes, and where applicable, solvent fumes. Use of goggles, protective garments, rubber gloves, protective creams is required. If material gets into eyes, flush thoroughly with clean water for (20) minutes; then seek medical treatment. Avoid skin contact. Material can cause contact dermatitis. Always wash exposed areas immediately, using warm water and soap, followed by rinsing with clean water. Observe all safety precautions. It is important when using solvent-based materials or solvents to keep away from open flame or ignition source.

KEEP OUT OF REACH OF CHILDREN.
FOR INDUSTRIAL USE ONLY.