



TECHNICAL DATA SHEET

DURAL® FAST SET EPOXY GEL, DURAL® FAST SET EPOXY LV

Rapid Setting, High Strength, Epoxy Adhesive Binder

03930

CONCRETE REHABILITATION
CONCRETE

TAMMS INDUSTRIES
FEBRUARY 2003 (Replaces 4/02)

1. **DESCRIPTION:** DURAL FAST SET EPOXY GEL and DURAL FAST SET EPOXY LV are two part, 100% solids, moisture insensitive epoxy resin compounds available in pre-packaged dual component cartridge kits.

FEATURES AND BENEFITS

- *Convenient cartridge kits*
- *Rapid Setting*
- *High Modulus*
- *High Strength*
- *Virtually No Odor*
- *1:1 Mix Ratio*
- *Moisture Insensitive*

APPLICATIONS

- *Fast Turn-Around Epoxy Injection*
- *Anchor Bolt Grouting*
- *Seal Cracks*
- *Concrete Repair*
- *Concrete Adhesive*
- *Low Temperature Applications*

2. **COMPLIANCE:** DURAL FAST SET EPOXY GEL and LV comply with the requirements of ASTM C881, Type I and IV.

3. **SURFACE PREPARATION:** Concrete must be clean, dry and structurally sound. The substrate must also be free of curing compounds, form release agents and any other contaminants. Surface laitance must be removed. The preferred method of surface preparation is abrasive blasting or other mechanical means. After cleaning, remove defective concrete, honeycombs, cavities, joint crack voids and other defects by routing to sound material. For grouting applications, ensure that the hole is free of any debris or standing water. Steel must be free of oils, greases, dirt, old coatings or chemical contaminants. Surfaces should be blasted to a white metal finish using clean dry aggregate.

4. **MIXING INSTRUCTIONS:** Place the dual component cartridge kit in a dual plunger manual or powered dispensing gun and remove end caps from both sides of the cartridge. Attach a static mixer nozzle using the reusable threaded retaining nut. Keep cartridge upright until use. Bleed off any air inside cartridge by slightly squeezing handle. Dispense the resins by working the trigger of the gun. Dispense and discard into a waste container a small amount (2 to 4 trigger pulls) to start the material mixing. Proceed with application. Do not point mixer upward after material is flowing. To stop dispensing, release pressure by pressing the lever on the gun and pulling back the plungers. When application is complete remove the used static mixer and dispose of properly. Bleed off a few drops of material to clear away any mixed product. Clean the threaded area and openings and replace the end caps on the cartridge. Loosely replace the locking nut.

Material Properties at 75°F		
	DURAL FAST SET EPOXY	
	LV	Gel
Viscosity: Mixed, cps	500	Gel
Gel Time, mins.	6-8	6-8
Thin Film Set, hrs		
@ 20 mils	1.5-2.0	1.5-2.0
@ 1/8"	1.0	1.0
ASTM D638, 7 Day		
Tensile Strength, psi	7,100	7,000
Tensile Elongation, %	2-4	2-4
ASTM D695, 7 Day		
Compressive Strength, psi	10,940	10,150
Compressive Modulus, psi	375,000	300,000
ASTM C882		
Bond Strength		
Hardened to Hardened	2,800	3,000
ASTM D570, 7 Day, 2 Hr. Boil		
Total Water Absorption, %	0.4	0.4

Data presented are typical laboratory values

5. **APPLICATION TECHNIQUES:** Application temperatures for DURAL FAST SET EPOXY GEL and DURAL FAST SET EPOXY LV must be at least 35°F and rising.

Hardened to hardened concrete: Spread mixed DURAL FAST SET EPOXY GEL with a spatula, brush, or trowel. Ensure the surfaces to be joined are uniformly coated with DURAL FAST SET EPOXY GEL. Join surfaces together and hold or clamp firmly until adhesive hardens or gels. Excess adhesive should squeeze out from the sides.

Anchor Bolt Grouting: For vertical anchor bolts use DURAL FAST SET EPOXY LV. For horizontal anchor bolts use DURAL FAST SET EPOXY GEL. Before grouting, the anchor bolt hole must be free of all debris. Fill the hole with enough material so that when the bolt is inserted excess material will come to the surface. Push the bolt into the hole using a twisting motion to ensure there are no air voids in the hole. The optimum hole diameter is 1/4" larger than the bolt diameter. For additional information on anchor bolt grouting, consult "Anchor Bolt Grouting Guidelines", available from Tamms Industries.

Pressure Grouting: A) Vertical Cracks: Install injection ports at appropriate intervals using DURAL FAST SET EPOXY GEL. Seal surface cracks with DURAL FAST SET EPOXY GEL. Pump DURAL FAST SET EPOXY LV starting at the bottom and working up. Cracks should be clean and dry prior to injection of the DURAL FAST SET EPOXY LV.

B) Horizontal Cracks: "Vee" out cracks. Cracks must be free of all debris before filling. Pressure injection method is the same as for vertical cracks. For gravity feed, place DURAL FAST SET EPOXY LV until cracks are filled.

TAMMS INDUSTRIES
FEBRUARY 2003 (Replaces 4/02)

CONCRETE REHABILITATION
CONCRETE

03930

6. **COVERAGE:** Coverage rates are approximate and for estimating purposes only. Surface temperature, porosity, anchors, hole size variations, and texture will determine actual material requirements.

ANCHORING

Rebar Size No.	Hole Size (Inches)	Embed Depth (Inches)	Theoretical # Holes Anchored Per 22 oz Cartridge
4	5/8	4-1/2	79
5	3/4	5-5/8	52
6	7/8	6-3/4	37
7	1	7-7/8	27
8	1-1/8	9	21
9	1-3/8	10	8
10	1-1/2	11-1/4	6.5
11	1-5/8	12-3/8	5.5
12	1-3/4	14	4

7. **CLEAN UP:** Clean tools and equipment immediately following use with methyl ethyl ketone or xylene. Clean drips and over spray while still wet with the same solvent. Dried epoxy materials require mechanical abrasion for removal.

8. **CAUTIONS:** Do not apply at temperatures below 35°F. Do not thin with any foreign material. Do not aerate materials during mixing. For critical grouting applications, the concrete should be cured a minimum of 28 days.

9. **PACKAGING & STORAGE:** DURAL FAST SET EPOXY GEL and DURAL FAST SET EPOXY LV are available in 22 oz (600 ml.) dual component cartridges, 4 gallon cases and 10 gallon units.
Storage: Store at between 50°-90°F. Protect from moisture.
Shelf life: 2 years in unopened containers and in protected storage.

10. **ENVIRONMENTAL AND SAFETY PRECAUTIONS:**
Component A contains epoxy resin. Vapors can cause respiratory irritation. Contact may cause skin or eye irritation. Can cause sensitization after prolonged or repeated exposure. Use safety goggles and chemical resistant gloves. Use only with adequate ventilation. **Component B is corrosive and contains amines.** Contact with eyes and skin may cause severe burns. Can cause sensitization after prolonged or repeated use. Use of safety goggles and chemical resistant gloves is highly recommended. Use only with adequate ventilation.
First Aid: In case of skin contact, wash immediately and thoroughly with soap and water. For eye contact, flush immediately with water for 15 minutes and consult a physician immediately. For respiratory problems, remove person immediately to fresh air.
Disposal: Collect with absorbent material. Dispose of in accordance with current local, state and federal regulations. READ MATERIAL SAFETY DATA SHEET BEFORE USING. MATERIAL IS FOR INDUSTRIAL USE ONLY. KEEP AWAY FROM CHILDREN. EMERGENCY RESPONSE PHONE NUMBERS ARE (800) 862-2667 TAMMS OR (800) 424-9300 CHEMTREC.

11. **TECHNICAL SERVICE:** For application procedures, surface conditions or other questions not answered please contact:

TAMMS INDUSTRIES
 3835 State Route 72 Kirkland, IL 60146
 Phone: 800-862-2667 Fax: 815-522-2323
 www.tamms.com

12. **WARRANTY:** Seller warrants that its products do not infringe upon any copyright, patent, trademark, or trade secret nor violate the proprietary information rights of any third party. Seller warrants that its products will conform to and perform in accordance with the product's specifications. THE FOREGOING WARRANTIES ARE IN LIEU OF ALL OTHER WARRANTIES EXPRESSED OR IMPLIED INCLUDING BUT NOT LIMITED TO THOSE CONCERNING MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. Because of the difficulty of ascertaining and measuring damages hereunder, it is agreed that except for claims for bodily injury, the seller's liability to the buyer or any other third party for any losses or damages, whether direct or otherwise, arising out of the purchase of the product from the seller by the buyer shall not exceed total amount billed and billable to the buyer for the product. **IN NO EVENT WILL THE SELLER BE LIABLE FOR ANY LOSS OF PROFITS OR OTHER SPECIAL OR CONSEQUENTIAL DAMAGES, EVEN IF SELLER HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.**