



TECHNICAL DATA SHEET

DURALCRETE®

High Modulus Epoxy Bonding Adhesive

03930

CONCRETE REHABILITATION
CONCRETE

- DESCRIPTION:** DURALCRETE is a multi-purpose, 2 component, 100% solids, moisture tolerant epoxy resin compound for load bearing applications.

FEATURES AND BENEFITS

- *High Strength*
- *High Modulus*
- *Provides Load Transfer*
- *Virtually No Odor*
- *1:1 Mix Ratio*
- *Outstanding Adhesion to Concrete*
- *Medium Viscosity*

APPLICATIONS

- *Bond Fresh Concrete (Plastic) to Hardened Concrete*
- *Vertical Anchor Bolt, Dowel Bar & Re-Bar Adhesive*
- *Hardened Concrete to Hardened Concrete Adhesive*
- *Mortar to Repair Concrete Defects*

- COMPLIANCE:** DURALCRETE meets or exceeds the following standards:

ASTM C881-90, Type I, II, IV & V
Grade 2, Class B & C
AASHTO M-235

- SURFACE PREPARATION: Concrete:** The surface must be structurally sound, dry, free of grease, oils, coatings, dust, curing compounds and other contaminants. Surface laitance must be removed. The preferred method of surface preparation is abrasive blasting or other mechanical means. Oil contaminated surfaces should be degreased. Remove defective concrete, honeycombs, cavities, joint cracks, voids and other defects by routing to sound material. Following surface preparation, the cleaned surface should pull concrete when tested with a pull tester, or an elcometer (ASTM D4541).

Steel: All oils, greases, dirt, old coatings and chemical contaminants must be removed. The surface should be blasted to a near white metal finish (SSPC SP10) using clean dry aggregate.

- MIXING INSTRUCTIONS:** Premix Part A and B with a slow speed motor and "Jiffy" mixer. Pour one part by volume of Part A and one part by volume of Part B into a clean, dry container and mechanically mix for

3-5 minutes. Scrape the sides and bottom of mixing container while mixing. Do not whip or aerate while mixing. **DURALCRETE Mortar:** Gradually add clean, dry 20/40 mesh silica sand to mixed binder. Blend thoroughly. The mix ratio of aggregate to binder is approximately 3:1 by volume but may vary depending upon the desired consistency of the mortar.

MATERIAL PROPERTIES

75°F

Color, Part A	Lt. Gray
Color, Part B	Tan
Color (Mixed)	Lt. Gray
Solids, %	100
Mixing Ratio (Parts A:B) by volume	1:1
Pot Life, (2 gal unit), mins	15-25
Gel Time, mins	30
Viscosity (Mixed), cps	4,250-4,750
Compressive Strength (ASTM D695), psi	
1 Day (neat resin)	8,000
7 Days (neat resin)	10,500
Compressive Modulus	330,000
Compressive Strength (ASTM C109), psi	
7 Days (mortar)	11,000
Tensile Properties (ASTM D638)	
Ultimate Strength @ 14 days, psi	7,200
Elongation at break, %	2.5
Modulus, psi	439,782
Bond Strength (ASTM C882), psi	
Hardened to Hardened Concrete	
2 Day (moist cure)	2075
14 Days (moist cure)	2385
14 Days (dry cure)	3100
Fresh Concrete to Hardened Concrete	
2 Day (moist cure)	2015
14 Day (moist cure)	2465
Heat Deflection Temp. (ASTM D648)	124°F
Linear Coefficient of Shrinkage	0.003
Water Absorption (ASTM D570)	
7 day, 24 hour immersion, %	0.23
Flexural Properties (ASTM D790), psi	
Strength, 14 days	5,700
Tangent Modulus	1x10 ⁶

Data presented are typical laboratory values.

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5. **APPLICATION TECHNIQUES:** Application and surface temperatures should be at least 40°F and rising.
- Bonding Fresh Concrete (Plastic) to Hardened Concrete:** Apply by brush spray or roller to hardened concrete surface. Place fresh concrete to DURALCRETE while it is still tacky or within the open time. The open time is typically 3-4 hours at 75°F. The open time is reduced at warmer temperatures. If the DURALCRETE loses tackiness or exceeds open time, abrade the surface of the epoxy and re-apply DURALCRETE and proceed.
- Bonding hardened to hardened concrete:** Apply mixed DURALCRETE by spatula, brush or trowel. Ensure the surfaces to be joined have uniform coatings of DURALCRETE. For optimum results the bond line should not exceed 1/8". Join surfaces and hold or clamp firmly until adhesive gels. Ideally a small amount of adhesive should exude from the joint. Surfaces must be mated while the adhesive is still tacky.
- Bonding anchor bolts, dowels, pins:** DURALCRETE can be used to anchor vertical bolts. The anchor bolt hole should be free of all debris before grouting. The optimum hole size is 1/4" larger diameter than the bar for a 1/8" annular space.
- Patching Horizontal (DURALCRETE Mortar):** Prime surface with neat DURALCRETE. While the prime coat is still tacky, trowel the Duralcrete Mortar to the primed surface.
6. **COVERAGE:** For anchoring, 1 neat gallon yields 231 cu.in. of grout. 1 gallon of neat DURALCRETE mixed with 3 gallons of dry 20/40 mesh silica sand will yield approximately 650 cu. in. of mortar. As a bonding agent coverage is about 60-80 square feet per gallon. Coverage will vary depending on surface texture, porosity and temperature.
7. **CLEAN-UP INSTRUCTIONS:** Clean tools and application equipment immediately after use with methyl ethyl ketone, or xylene. Clean overspray or drips while still wet with solvent. Dried DURALCRETE will require mechanical abrasion for removal.
8. **PACKAGING:** 4 gallon case, 10 gal unit.
Storage: 50°-90°F (10°-32.2°C), protected from moisture.
Shelf Life: 2 years, unopened, proper storage.
9. **ENVIRONMENTAL SAFETY PRECAUTIONS:** (Industrial Use Only) **Component "A":** Contains epoxy resin. Vapors can cause respiratory irritation. Skin and eye irritant. Can cause sensitization after prolonged or repeated exposure. Use of safety goggles and chemical resistant gloves is recommended. Use only with adequate ventilation.
Component "B": Is corrosive. Contains amines. Contact with eyes or 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 plenty of water for at least 15 minutes. Consult physician immediately. For respiratory problems, remove person to fresh air.
Disposal: Collect with absorbent material. Dispose of in accordance with current local, state and federal regulations.
10. **TECHNICAL SERVICE:** For application procedures or surface conditions not specified above, please contact:
- TAMMS INDUSTRIES
3835 State Route 72, Kirkland IL 60146
800-862-2667; FAX: 815-522-3257
www.tamms.com
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