

DURALCRETE®

HIGH MODULUS EPOXY BONDING ADHESIVE

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DESCRIPTION

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

PRIMARY 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

FEATURES/BENEFITS

- High strength
- High modulus
- Provides load transfer
- Virtually no odor
- 1:1 mix ratio
- Outstanding adhesion to concrete
- Medium viscosity
- Can contribute to LEED points.

TECHNICAL INFORMATION

Material Properties 75°F (24°C)

Solids, %	100
Mixing ratio (parts A:B) by volume.....	1:1
Pot life , (2 gal unit), mins	15 to 25
Gel time , mins	30
Viscosity (mixed), cps.....	4,250 to 4,750
Compressive Strength (ASTM D 695), psi (MPa)	
1 day (neat resin)	8,000 (55.2)
7 days (neat resin)	10,500 (72.4)
Compressive Modulus	330,000 (2275)
Compressive Strength (ASTM C 109),psi (MPa)	
7 days (mortar).....	11,000 (75.8)
Tensile Properties (ASTM D 638)	
Ultimate strength @ 14 days, psi (MPa)	7,200 (49.6)
Elongation at break, %.....	2.5
Modulus, psi (MPa).....	439,782 (3032)
Appearance:	
Color, Part A	Lt. Gray
Color, Part B	Tan
Color (Mixed).....	Lt. Gray

Bond Strength (ASTM C 882), psi (MPa)

Hardened to hardened concrete	
2 Day (moist cure).....	2,075 (14.3)
14 days (moist cure)	2,385 (16.4)
14 days (dry cure)	3,100 (21.37)
Fresh concrete to hardened concrete	
2 day (moist cure)	2,015 (13.9)
14 day (moist cure)	2,465 (17.0)
Heat Deflection Temp. (ASTM D 648) . 124°F(57°C)	
Linear Coefficient of Shrinkage	0.003
Water Absorption (ASTM D 570)	
7 day, 24 hour immersion, %	0.23
Flexural Properties (ASTM D 790), psi (MPa)	
Strength, 14 days.....	5,700 (39.3)
Tangent Modulus.....	1x10 ⁶

Data presented are typical laboratory values.

PACKAGING

DURALCRETE is packaged in 10 gal (37.85 L) and 4 gal (15.15 L) cases.

SHELF LIFE

2 years in original, unopened package.

SPECIFICATIONS/COMPLIANCES

- ASTM C 881-90, Type I, II, IV & V Grade 2, Class B & C
- AASHTO M 235



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COVERAGE/TIELD

For anchoring, one neat gal yields 231 in³ of grout. One gal of neat DURALCRETE mixed with 3 gal (11.4 L) of dry 20/40 mesh silica sand will yield approximately 650 in³ of mortar. As a bonding agent coverage is about 60 to 80 ft²/gal (1.47 to 1.96 m²/L). Coverage will vary depending on surface texture, porosity and temperature.

DIRECTIONS FOR USE

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 D 4541). **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: 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 to 5 minutes. Scrape the sides and bottom of mixing container while mixing. Do not whip or aerate while mixing. **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.

Application: Application and surface temperatures should be at least 40°F (4°C) 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 to 4 hours at 75°F (24°C). 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" (3.2 mm). 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" (6.4 mm) larger diameter than the bar for a 1/8" (3.2 mm) 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.

CLEAN-UP

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.

PRECAUTIONS/LIMITATIONS

- Store at temperatures between 50°F to 90°F (10°C to 32°C).
- Protect from moisture.
- In all cases, consult the Material Safety Data Sheet before use.