Devcon®

Technical Data Sheet

7/8/2004

Ceramic Repair Putty

Description: A high performance, trowelable, ceramic-filled epoxy for rebuilding worn or damaged equipment.

Intended Use: Rebuild worn pump casings and suction plates; repair tube sheets, heat exchangers and other circulating water equipment; restore worn chutes and hoppers; repair and rebuild butterfly and gate valves

Product features:
Excellent chemical resistance
Corrosion-, cavitation-, erosion-resistant
Non-sagging putty, creamy paste

Limitations: None

Typical Physical Properties:

Technical data should be considered representative or typical only and should not be used for specification purposes.

Cured 7 days @ 75° F

Color	Dark Blue
Mix Ratio by Volume	4.3:1
Mix Ratio by Weight	7:1
% Solids by Volume	100
Pot Life @ 75F	25 min.
Specific Volume	16.4 in.(3)/lb.
Cured Shrinkage	0.0022 in./in.
Specific Gravity	1.69 gm/cc
Temperature Resistance	Wet 150°F; Dry 350°F
Coverage/lb	66 sq.in./lb.@1/4"
Cured Hardness	90D
Dielectric Strength	370 volts/mil.
Dielectric Constant	41.0
Adhesive Tensile Shear	2,000psi
Compressive Strength	12,700psi
Modulus of Elasticity	9.0 psi x 10(5) in.
Flexural Strength	6,475 psi
Coefficient of Thermal Expansion	9.0 [(in.)(in). x °F)] x 10(-6)
Thermal Conductivity	1.88 [(cal x cm) / (sec x cm(2) x °C)] x 10(-3)
Cure Time	16 hrs.
Recoat Time	2-4 hrs.
Mixed Viscosity	Putty

TESTS CONDUCTED

Adhesive Tensile Shear ASTM D 1002
Cure Shrinkage ASTM D 2566
Dielectric Strength, volts/mil ASTM D 149
Dielectric Constant ASTM D 150
Modulus of Elasticity ASTM D 638
Compressive Strength ASTM D 695
Cured Hardness Shore D ASTM D 2240
Coef. of Thermal Expansion ASTM D 696
Flexural Strength ASTM D 790
Thermal Conductivity ASTM C 177

Surface Preparation:

1. Thoroughly clean the surface with Devcon® Cleaner Blend 300 to remove all oil, grease, and dirt.

2. Grit blast surface area with 8-40 mesh grit, or grind with a coarse wheel or abrasive disc pad, to create increased surface area for better adhesion (Caution: An abrasive disc pad can only be used provided white mesh is revealed). Desired profile is 3-5mil, including defined edges (do not 'feather-edge" epoxy).

Note: For metals exposed to sea water or other salt solution, grit-blast and high-pressure-water-blast the area, then leave overnight to allow any salts in the metal to "sweat" to the surface. Repeat blasting to "sweat out" all soluble salts. Perform chloride contamination test to determine soluble salt content (should be no more than 40ppm).

3. Clean surface again with Cleaner Blend 300 to remove all traces of oil, grease, dust, or other foreign substances from the grit blasting.

4. Repair surface as soon as possible to eliminate any changes or surface contaminants.

WORKING CONDITIONS: Ideal application temperature is 55°F to 90°F. In cold working conditions, heat repair area to 100-110°F immediately prior to applying epoxy to dry off any moisture, contamination, or solvents, as well as to assist epoxy in achieving maximum adhesion properties.

Mixing Instructions:

---- It is strongly recommended that full units be mixed, as ratios are pre-measured. ----

1. Add hardener to resin
2. Mix thoroughly with screwdriver or similar tool (continuously scrape material away from sides and bottom of container) until a uniform, streak-free consistency is obtained.

INTERMEDIATE SIZES (1,2,3 lb. units): Place resin and hardener on a flat, disposable surface such as cardboard, plywood, or plastic sheet). Use a trowel or wide-blade tool to mix the material as in Step 2 above.

LARGE SIZES: (25 lb., 30 lb., 50 lb. buckets): Use a T-shaped mixing paddle or a propeller-type Jiffy Mixer Model ES on an electric drill. Thoroughly fold putty by vigorously moving paddle/propeller up and down until a homogenous mix of resin and hardener is attained.

Application Instructions:

Spread mixed material on repair area and work firmly into substrate to ensure maximum surface contact. Ceramic Repair Putty fully cures in 16 hours, at which time it can be machined, drilled, or painted.

FOR BRIDGING LARGE GAPS OR HOLES
Place fiberglass sheet, expanded metal, or mechanical fasteners between repair area and Ceramic Repair Putty prior to application.

FOR VERTICAL SURFACE APPLICATIONS
Ceramic Repair Putty can be troweled up to ½" thick without sagging. Chemical immersion is possible after 24 hours.

FOR MAXIMUM PHYSICAL PROPERTIES
Cure at room temperature for 2.5 hours, then heat cure for 4 hours @ 200°F.

FOR ± 70°F APPLICATIONS
Applying epoxy at temperatures below 70°F lengthens functional cure and pot life times. Conversely, applying above 70°F shortens functional cure and pot life.

Storage:

Store at room temperature.

Compliances:

Qualifies under DOD-C-24176B SH

Chemical Resistance:

Chemical resistance is calculated with a 7 day, room temp. cure (30 days immersion) @ 75°F)

1,1,1-Trichloroethane	Excellent	Nitric 50%	Poor
Aluminum Sulfate 10%	Excellent	Phosphoric 10%	Very good
Benzene	Excellent	Potassium Hydroxide 40%	Excellent
Chlorinated Solvent	Excellent	Sodium Hydroxide 10%	Excellent
Gasoline (Unleaded)	Excellent	Sodium Hydroxide 50%	Excellent
Hydrochloric 36%	Fair	Sodium Hydroxide 50%	Excellent
Kerosene	Excellent	Sulfuric 10%	Very good
Mineral Spirits	Excellent	Sulfuric 50%	Fair

Precautions:

Please refer to the appropriate material safety data sheet (MSDS) prior to using this product.

For technical assistance, please call 1-800-933-8266

FOR INDUSTRIAL USE ONLY

Warranty:

Devcon will replace any material found to be defective. Because the storage, handling and application of this material is beyond our control, we can accept no liability for the results obtained.

Disclaimer:

All information on this data sheet is based on laboratory testing and is not intended for design purposes. ITW Devcon makes no representations or warranties of any kind concerning this data.

Order Information:

11700 3 lb.