Technical Data Sheet
Version 2. 04/2023

Ceramic Repair Putty

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

Intended Use: Industrial use: To 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.

Features: **Excellent chemical resistance, Corrosion-, cavitation-, erosion-resistant, Non-sagging putty, creamy paste**

Limitations: Suitability of product is determined by the end user for their application and process.

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 (24°C)	Typical Values	Standard Tests
Adhesive Tensile Shear (GBS)	2,000 psi (13.8 MPa)	Coeff. of Thermal Exp. ASTM D 696
Coefficient of Thermal Expansion (x10-6)	23.8 in/in.°F (42.8 cm/cm.°C)	Compressive Strength ASTM D 695
Compressive Strength	12,700 psi (87.5 MPa)	Cured Shrinkage ASTM D 2566
Cured Shrinkage	0.0022 in/in (cm/cm)	Dielectric constant ASTM D 150
Dielectric Constant	4.1 @ 1 MHz	Dielectric strengthASTM D149
Dielectric Strength	370 volts/mil (14.6 kV/mm)	Flexural StrengthASTM D 790
Flexural Strength	6,475 psi (44.7 MPa)	Hardness Shore D ASTM D 2240
Hardness	86 Shore D	Thermal Conductivity ASTM C 177
Solids by Volume	100%	Tensile Shear ASTM D1002
Temp. Resistance	Wet 150°F (65°C); Dry 350°F (177°C)	
Thermal Conductivity (x10-3)	1.88 cal/(sec.°C.cm)	

Uncured Properties @ 72°F (23°C)	
Color	Dark Blue
Coverage (1/4" / 6.35mm)	66 in2/lb (939 cm2/kg)
Functional Cure	16 hrs.
Max.Thickness without Sag	1/2" (12.7 mm)
Mix Ratio by Volume	4.3:1
Mix Ratio by Weight	7:1
Mixed Viscosity	Putty
Pot life@75F (24C)	25 min.
Recoat Time	2-4 hours
Recommended Thickness	1/4" (6.35 mm)
Specific Gravity	14.1 lb/gal (1.69 g/cm3)
Specific Volume	16.4 in3/lb (0.59 cm3/g)

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 metal 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 40 ppm).

3. Clean surface again with Devcon® 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 to 90°F (13-32°C). In cold working conditions, directly heat repair area to 100-110°F (38-43°C) prior to applying epoxy and maintain at this temperature during product cure to dry off any moisture, contamination or solvents, as well as to achieve maximum performance properties.

Homogenous mixing of resin and hardener is essential for the curing and development of stated strengths.

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 the container) until a uniform, streak-free consistency is obtained.

INTERMEDIATE SIZES: (1, 2 & 3 lb / 0.5, 0.9, & 1.4 Kg) containers. 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, 30 & 50 lb / 11.4, 13.6, & 22.7 Kg) 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 at a minimum thickness of ¼" (6.35 mm). Work firmly into substrate to ensure maximum surface contact. Ceramic Repair Compound functionally cured 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 Compound. prior to application.

FOR VERTICAL SURFACE APPLICATIONS
Ceramic Repair Cmpound can be troweled up to 1/2" (13 mm) thick without sagging.

FOR MAXIMUM PHYSICAL PROPERTIES
Cure at room temperature for 2.5 hours, then heat cure for 4 hours @ 200°F (93°C).

FOR ± 70°F (21°C) APPLICATIONS
Applying epoxy at temperatures below 70°F (21°C) lengthens functional cure and pot lifetimes. Conversely, applying
Can withstand processing forces
Do not drop, shock load, or heavily load

Storage:

Shelf life 3 yrs from manufacture. See package label. Store at room temperature, 70°F (21°C)

Compliances:

None

Chemical Resistance:

Chemical resistance is calculated with a 7 day, room temp. cure (30 days immersion) @ 75°F (24°C)

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

Precautions:

FOR INDUSTRIAL USE ONLY: Please refer to the appropriate **S**afety **D**ata **S**heet prior to using this product.

Warranty:

ITW Performance Polymers 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.

Order Information:

Item No.	**Package Size**
11700	3 lb. (1.4 kg)

Contacts:

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