



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)

Adhesive Tensile Shear (GBS)
Coefficient of Thermal Expansion (x10-6)
Compressive Strength
Cured Shrinkage
Dielectric Constant
Dielectric Strength
Flexural Strength
Hardness
Solids by Volume
Temp. Resistance
Thermal Conductivity (x10-3)

Typical Values

2,000 psi (13.8 MPa)
23.8 in/in.°F (42.8 cm/cm.°C)
12,700 psi (87.5 MPa)
0.0022 in/in (cm/cm)
4.1 @ 1 MHz
370 volts/mil (14.6 kV/mm)
6,475 psi (44.7 MPa)
86 Shore D
100%
Wet 150°F (65°C); Dry 350°F (177°C)
1.88 cal/(sec.°C.cm)

Standard Tests

Coeff. of Thermal Exp. ASTM D 696
Compressive Strength ASTM D 695
Cured Shrinkage ASTM D 2566
Dielectric constant ASTM D 150
Dielectric strength ASTM D149
Flexural Strength ASTM D 790
Hardness Shore D ASTM D 2240
Thermal Conductivity ASTM C 177
Tensile Shear ASTM D1002

Uncured Properties @ 72°F (23°C)

Color
Coverage (1/4" / 6.35mm)
Functional Cure
Max. Thickness without Sag
Mix Ratio by Volume
Mix Ratio by Weight
Mixed Viscosity
Pot life @ 75F (24C)
Recoat Time
Recommended Thickness
Specific Gravity
Specific Volume

Dark Blue
66 in2/lb (939 cm2/kg)
16 hrs.
1/2" (12.7 mm)
4.3:1
7:1
Putty
25 min.
2-4 hours
1/4" (6.35 mm)
14.1 lb/gal (1.69 g/cm3)
16.4 in3/lb (0.59 cm3/g)

Surface Preparation:

1. Thoroughly clean the surface with a solvent such as Isopropanol Alcohol or Acetone 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 a solvent such as Isopropanol Alcohol or Acetone 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 1/4" (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 Compound 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 |
| Aluminum Sulfate 10% | Excellent |
| Benzene | Excellent |
| Chlorinated Solvent | Excellent |
| Gasoline (unleaded) | Excellent |
| Hydrochloric 10% | Excellent |
| Kerosene | Excellent |
| Mineral Spirits | Excellent |

| | |
|-------------------------|-----------|
| Nitric Acid 10% | Poor |
| Phosphoric 10% | Very good |
| Potassium Hydroxide 40% | Excellent |
| Sodium Hydroxide 50% | Excellent |
| Sodium Hypochlorite | Excellent |
| Sulfuric 10% | Very good |
| Sulfuric 50% | Fair |
| Toluene | Excellent |

Precautions:

FOR INDUSTRIAL USE ONLY: Please refer to the appropriate Safety Data Sheet prior to using this product.

Warranty:

ITW Polymers & Fluids 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:

| <u>Item No.</u> | <u>Package Size</u> |
|-----------------|---------------------|
| D11705 | 500gm |
| D11700 | 1.5kg |

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Disclaimer:

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