Technical Data Sheet
Version 2. 04/2023

Carbide Putty

Description: Silicon carbide-filled epoxy putty for economical protection against wear and abrasion

Intended Use: Applications involving particulate less than 1/16" (1.6 mm): pipe elbows, pulverizers and slurry lines, cyclones and exhauster fans, chutes.

Features: Non-sagging, Extremely Wear resistant and Room Temperature Cure

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	1,350 psi / 9.3 MPa	Adhesive Tensile Shear ASTM D 1002
Coefficient of Thermal Expansion (x10-6)	14 in/in°F (25.2 cm/cm/°C)	Coef. of Thermal Expansion ASTM D 696
Compressive Strength	8,160 psi / 56.3 MPa	Compressive Strength ASTM D 695
Cured Shrinkage	0.0009 in/in (0.0009 cm/cm)	Cured Hardness Shore D ASTM D 2240
Dielectric Constant	25	Cure Shrinkage ASTM D 2566
Flexural Strength	5,480 psi (37.8 MPa)	Dielectric Constant ASTM D 150
Hardness	85 Shore D	Flexural Strength ASTM D 790
Solids by Volume	100%	
Temperature Resistance	Wet: 120°F (49°C) Dry: 250°F (121°C)	
Tensile Strength	2,640 psi / 18.2 MPa	

Uncured Properties @ 72°F (23°C)	
Color	Grey
Coverage (1/4" / 6.35mm)	64 in^2 /lb (910 cm^2/Kg)
Funtional Cure	16 hrs.
Mix Ratio by Volume	4:1
Mix Ratio by Weight	8:1
Mixed Viscosity	Putty
Pot Life @ 75F	50 min
Recoat Time	3-6 hrs.
Specific Gravity	14.6 lb/gal (1.75 g/cm3)
Volume	15.9 in3/lb (0.574 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 40ppm).

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°F to 90°F (13°C - 32°C). In cold working conditions, repair area to 100-110°F (38°C - 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.

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

Mixing Instructions:

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 (3 lb, 4 lb, 25 lb): Use a propeller-type Jiffy Mixer on an electric drill. Use model HS-1 for 3 lb and 4 lb kits. Use model ES for 25 lb kit. Mix until color is uniform and consistent.

Application Instructions:

ADDITIONAL SURFACE PREPARATION INFORMATION:
If grit blasting is not possible, and expandable metal cannot be used, apply Devcon Brushable Ceramic at 11-18 mils to prime the metal

surface. Allow to cure for approximately 2 hours, or until a fingernail can almost depress the primed surface. Immediately apply Carbide putty to the surface. DO NOT let the "prime coat" fully cure before applying Carbide Putty.

Spread mixed material on repair area at a minimum thickness of ¼" (6.35 mm). Work firmly into substrate to ensure maximum surface Immediately apply contact. Carbide 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 Carbide Putty prior to application.

FOR VERTICAL SURFACE APPLICATIONS
Carbide Putty can be troweled up to 3/4" (19 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 life times. Conversely, applying above 70°F (21°C) shortens functional cure and pot life.

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	Very good
Ammonia	Very good
Gasoline (Unleaded)	Very good
Hydrochloric 10%	Fair
Methanol	Poor
Methyl Ethyl Ketone	Poor
Methylene Chloride	Poor
Nitric 10%	Fair

Phosphoric 10%	Fair
Potassium Hydroxide 40%	Very good
Sodium Hydroxide 50%	Very good
Sodium Hypochlorite	Very good
Sulfuric 10%	Fair
Toluene	Very good
Trisodium Phosphate	Very good

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
10050	**3 lb. kit**
10080	**20 lb. kit**

Contacts:

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Disclaimer:

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