Devcon®

A brand of ITW Polymers Adhesives North America

Technical Data Sheet

1/26/2012

Underwater Repair Putty (UW)

Description: Makes (effective) repairs to metal, concrete, wood surfaces in wet and dry environments.

Intended Use: Repairing and refitting pipes, valves, pumps, and tanks. Repair concrete vessels and piping in wet environments. This product will bond to a wet or damp surface.

Product features:

Bonds to aluminum, concrete, and many other metals
Bonds to ferrous and non-ferrous metals
Non-rusting
Bonds to wet surfaces
Bonds, patches, and seals metals
Non-sagging

Limitations:

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	
Adhesive Tensile Shear	2,685 psi
Coefficient of Thermal Expansion	18[(in.)/(in). x °F)] x 10(3)
Color	Grey
Compresive Strength	5,625 psi
Coverage/lb	68 sq.in./lb. @ 1/4"
Cured Hardness	82 Shore D
Cured Shrinkage	0.0020 in./in.
Dielectric Constant	8.6
Dielectric Strength	150 volts/mils
Flexural Strength	4,990 psi
Functional Cure	24 hours
Mix Ratio by Volume	1:1
Mix Ratio by Weight	1.4:1
Mixed Viscosity	Putty
Modulus of Elasticity	7.5 psi x 10(5)
Pot Life @ 75F	45 min.
Recoat Time	10-12 hours
Solids by Volume	100
Specific Gravity	1.4 gm/cc(2)
Specific Volume	17 in.(3)/lb.
Temperature Resistance	Wet: 120°F; Dry: 250°F

TESTS CONDUCTED

Adhesive Tensile Shear ASTM D 1002
Compressive Strength ASTM D 695
Cure Shrinkage ASTM D 2566
Cured Hardness Shore D ASTM D 2240
Flexural Strength ASTM D 790

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. In cold working conditions, directly heat repair area to100-110°F 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.

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. Underwater Repair Putty fully cures in 16 hours, at which time it can be machined, drilled, or painted
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.

For Underwater or submerged repairs consider the following:
- Remove all dirt, barnacles, flaking paint, and algae/seaweed from the substrate.
- Wipe area with a clean cloth to remove any film on the surface. Obviously you cannot degrease underwater, but wiping and turning a clean cloth often will remove any film on the surface.
- Abrade the surface if possible. (Use mechanical means or a file to accomplish.)
- The oxidation can be removed by mechanical means, such as water, grit-blasting, or by chemical means.
- Make the repair as soon as possible to avoid surface contamination.

Storage: Store at room temperature, 70 °F.

Compliances: None

Chemical Resistance:

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

Ammonia	Very good
Chlorinated Solvent	Poor
Hydrochloric 10%	Fair
Kerosene	Very good
Methanol	Poor
Sodium Hydroxide 10%	Very good
Sulfuric 10%	Fair
Toluene	Very good

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: **11800 1 lb. kit**