



Combo Wear FC

- Description:** High-tech, epoxy compound for quickly repairing processing equipment and returning to service in as little as 1.5 hours
- Intended Use:** Repair large cracks in large coal fuel lines; protect pipe elbows, exhauster fans and housings; repair chippers, bins, and hoppers
- Features:** Bonds to wet surfaces, Excellent adhesion to metal, ceramic, and concrete, Reinforced with two bead sizes and silicon carbide
- 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 Lap Shear (GBS)	1,450 psi (10.0 MPa)	Adhesive Tensile Shear ASTM D 1002
Tensile Strength	4,300 psi (29.7 MPa)	
Compressive Strength	11,000 psi (76 MPa)	Compressive Strength ASTM D 695
Dielectric Strength	41 volts/mil (1.6 kV/mm)	Dielectric Strength ASTM D 149
Flexural Strength	7,140 psi (49.2 MPa)	Flexural Strength ASTM D 790
Service Temperature	Wet, 140°F (60°C) Dry, 300°F(149°C)	
Shore Hardness	87 Shore D	Cured Hardness Shore D ASTM D 2240
Coeff. of Thermal Expansion (x10-6)	34 in/in°F (61.2 mm/mm°C)	Coef. of Thermal Expansion ASTM D 696
Cured Shrinkage	0.0008 in/in (cm/cm)	Cure Shrinkage ASTM D 2566

Uncured Properties @ 72°F (23°C)

Color	Grey
Working Time	7 minute
Functional Cure	1.5-3 hrs.
Full Cure	8 hours
Recoat Time	1-2 hrs.
Mix Ratio by Volume	2:1
Mix Ratio by Weight	2:1
Mixed Viscosity	Non-sag putty
Solids by Vol.	100%
Specific Gravity	17 lb/Gal (2.04 g/cm3)
Specific Volume	13.6 in3/lb (0.491 cm3/g)
Coverage (1/4" / 6.35mm)	54 in2/lb (773 cm2/Kg)

- 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 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 to 90°F (12-32°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.

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:

ADDITIONAL SURFACE PREPARATION INFORMATION:

If grit blasting is not possible, and expandable metal cannot be used, apply Devcon Brushable Ceramic at 11-18 mils (0.28-0.46 mm) to prime the metal surface. Allow to cure for approximately 2 hours, or until a fingernail can almost depress the primed surface. Immediately apply Combo Wear FC to the surface. DO NOT let the "prime coat" fully cure before applying Combo Wear FC.

Spread mixed material on repair area at a minimum thickness of 1/4". Work firmly into substrate to ensure maximum surface contact. Combo Wear FC 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 Combo Wear FC prior to application.

FOR VERTICAL SURFACE APPLICATIONS

Combo Wear FC can be troweled up to 3/4" (19mm) 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 at higher temperatures shortens cure time and potlife.

Storage:

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	Nitric Acid 10%	Fair
Acetic (Dilute) 10%	Poor	Phosphoric 10%	Fair
Benzene	Very good	Potassium Hydroxide 40%	Excellent
Gasoline (Unleaded)	Fair	Sodium Hydroxide 50%	Excellent
Hydrochloric 10%	Very good	Sodium Hypochlorite	Very good
Methanol	Poor	Sulfuric 10%	Very good
Methyl Ethyl Keton	Very good	Toluene	Excellent
Methylene Chloride	Poor	Trisodium Phosphate	Very good

Precations:

FOR INDUSTRIAL USE ONLY: Please refer to the appropriate Safety Data Sheet 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. 11450
Package Size 9 lb.

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