



## TECHNICAL DATA SHEET – WEAR GUARD HIGH TEMP 450

Revised: 03/2017

### PRODUCT INFORMATION

**STOCK NO.:** 11480

**PACKAGE SIZE:** 30lb (13.6Kg)

### DESCRIPTION

Ceramic bead filled epoxy system with outstanding abrasion resistance for high temperature service conditions.

### RECOMMENDED APPLICATIONS

- Repairs to ash handling systems and scrubbers
- Extends equipment operating life
- Prevents wear on metal surfaces that are exposed to abrasion and erosion such as chutes and launders
- Non sag formulation
- Protecting flanges and elbows
- Lining bins and hoppers

### PRODUCT DATA

#### TYPICAL PHYSICAL PROPERTIES

COLOUR	Grey
MIX RATIO BY VOLUME	Resin 6: Hardener 1
MIX RATIO BY WEIGHT	Resin 13.7: Hardener 1
% SOLIDS BY VOLUME	100
POT LIFE AT 25°C / MINUTES	120
SPECIFIC VOLUME CC/KG	515
SPECIFIC GRAVITY	1.94
TEMPERATURE RESISTANCE / °C	Wet 150°C Dry 230°C
COVERAGE	0.103m <sup>2</sup> /Kg @ 5mm
CURED SHRINKAGE CM/CM	0.001
CURED HARDNESS / SHORE D	87 D
DIELECTRIC STRENGTH KV/MM	12
ADHESIVE TENSILE SHEAR MPA	15.85
COEFFICIENT OF THERMAL EXPANSION X10 <sup>-6</sup> CM/CM/°C	34
THICKNESS PER COAT / MM	As Required
FUNCTIONAL CURE TIME / HOURS	16*
RECOAT TIME / HOURS	2-4
MIXED VISCOSITY / CPS	Thixotropic Putty

\*(high temperature applications should follow the recommended heat cure regime)

# WEAR GUARD HIGH TEMP 450

## CHEMICAL RESISTANCE - 7 DAYS ROOM TEMPERATURE CURE (30 DAYS) - TESTING CARRIED OUT 30 DAYS IMMERSION AT 21°C

	POOR	FAIR	VERY GOOD	EXCELLENT
UNLEADED PETROL				•
HYDROCHLORIC ACID 10%				•
SODIUM HYDROXIDE 50%				•
PHOSPHORIC ACID 10%			•	
HYDROCHLORIC ACID 37%				•
SULPHURIC ACID 10%				•
NITRIC ACID 10%			•	
METHANOL		•		
SODIUM HYPOCHLORITE				•
POTASSIUM HYDROXIDE 40%				•

Excellent = +/- 1% weight change, Very Good = +/- 1-10% weight change, Fair = +/- 10-20% weight change, Poor = > 20% weight change

## APPLICATION INFORMATION

### CURE

A 5mm thick section of Wear Guard High Temp 450 will harden at 25°C in 2-3 hours. The material will be fully cured in 16 hours. The actual cure time of epoxy is determined by the mass used and the temperature at the time of repair.

### SURFACE PREPARATION

Proper surface preparation is essential to a successful application. The following procedures should be considered:

- All surfaces must be dry, clean and ideally roughened or abrasive blasted to create a profile.
- If surface is oily or greasy use MEK or similar solvent to degrease the surface.
- Remove all paint, rust and grime from the surface by abrasive blasting or other mechanical techniques.
- Aluminium repairs: Oxidation of aluminium surfaces will reduce the adhesion of an epoxy to a surface. This film must be removed before repairing the surface, by mechanical means such as grit-blasting or chemical means.
- Provide a "profile" on the metal surface by roughening the surface. This should be done ideally by grit blasting (8-40 mesh grit), or by grinding with a coarse wheel or abrasive disc pad. An abrasive disc may be used provided white metal is revealed. Do not 'feather edge' epoxy materials. Epoxy material must be 'locked in' by defined edges and a good 3-5 mil profile.
- Metal that has been handling sea water or other salt solutions should be grit blasted and high pressure water blasted and left overnight to allow any salts in the metal to 'sweat' to the surface. Repeat blasting may be required to 'sweat out' all the soluble salts. A test for chloride contamination should be performed prior to any epoxy application. The maximum soluble salts left on the substrate should be no more than 40 p.p.m. (parts per million).
- Chemical cleaning with MEK or similar solvent should follow all abrasive preparation. This will help to remove all traces of sandblasting, grit, oil, grease, dust or other foreign substances.

- Under cold working conditions, heating the repair area to 38°C-43° C immediately before applying any of Devcon Epoxies is recommended. This procedure dries off any moisture, contamination or solvents and assists the epoxy in achieving maximum adhesion to the substrate.
- Always try to make the repair as soon as possible after cleaning the substrate, to avoid oxidation or flash rusting. If this is not practical, a general application of FL-10 Primer will keep metal surfaces from flash rusting.

### MIXING

For the Wear Guard High Temp, add the hardener to the resin then mix thoroughly using a suitable mixing paddle or suitable size jiffy mixer. Mix in such a fashion that the material is thoroughly dispersed from top to bottom of the container until homogenous.

### APPLICATION

Spread the material over the prepared surface with a putty knife or spatula pressing firmly into all cracks and voids to ensure maximum surface contact and avoid trapping air. A film of up to 20 mm can be applied in one coat if required even onto vertical surfaces without sagging. It is preferable, where a thick layer is required, to first apply a 5~mm coat and then a second coat just before the first is cured to get the main build to the desired thickness.

Where high temperature duty is desired the following heat cure regime should be followed; material should be cured at room temperature for 2.5 hours followed by 4 hours at 90°C.

### SHELF LIFE & STORAGE

A shelf life of 3 years from date of manufacture can be expected when stored at room temperature (22°C) in their original containers

### PRECAUTION

For complete safety and handling information, please refer to Material Safety Data Sheets (MSDS) prior to using this product.

### WARRANTY

ITW Engineered Polymers will replace any material found to be defective. As storage, handling and application of this material is beyond our control we can accept no liability for the results obtained.

### DISCLAIMER

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