



# TECHNICAL DATA

## Wear Guard High Impact

### Ceramic Bead Filled Epoxy

#### Description

Wear Guard High Impact is a high density, micro alumina ceramic bead-filled epoxy system with urethane acrylate, for superior impact abrasion, that protects equipment against tremendous impact and flex.

#### Areas of application

- High Impact applications
  - Pumps
  - Scrubbers
  - Screens
  - Chutes
  - Handling equipment
  - Screw conveyors

#### Features

- Non-sagging, creamy paste
- Extremely wear resistant
- Service temperatures to 150°C
- High compression and impact strength

#### Chemical Resistance

(Chemical resistance is calculated with a 7 day, room temperature cure (30 days immersion) @ 24°C)

1,1,1 Trichloroethane	Very good	Nitric Acid10%	Fair
Ammonia	Excellent	Phosphoric Acid10%	Fair
Benzene	Very good	Potassium Hydroxide 40%	Excellent
Petrol (Unleaded)	Excellent	Sodium Hydroxide 50%	Excellent
Hydrochloric Acid 10%	Very good	Sulphuric Acid 10%	Very good
Methanol	Poor	Toluene	Excellent
Methyl Ethyl Ketone	Poor	Trisodium Phosphate	Very Good
Methylene Chloride	Poor		

The information contained in this Technical Bulletin is as up to date and correct as possible as at the time of issue. The data provided should be used as a guide only as the performance of the product will vary depending on differing operating conditions and application methods.

The sale of any product described in this Technical Bulletin will be in accordance with ITW Polymers & Fluids Conditions Of Sale, a copy of which is available on request. To the extent permitted by law, ITW Polymers & Fluids excludes all other warranties in relation to this product.

## Technical Data

### Typical Physical Properties: Cured 7 days @ 24°C

		Test Method
Colour	Dark grey	
Mix Ratio (Resin to Hardener)	Weight 2.5:1 Volume 2.5:1	
Mixed Viscosity	Non-sag putty	
Work Time of 500gms minutes @ 24°C	45	
Cure Time	16 hours	
Recoat Time	12-20 hours	
% Solids by Volume	100	
Specific Volume	448cm <sup>3</sup> /kg	
Specific Gravity	2.23 gm/cm <sup>3</sup>	
Cure Shrinkage	0.0006 cm/cm	ASTM D2566
Hardness Shore D	85	ASTM D2240
Adhesive Tensile Shear	17.7 MPa	ASTM D1002
Compressive Strength	50MPa	ASTM D695
Modulus of Elasticity	2316 MPa	ASTM D638
Co-efficient of Thermal Expansion	62 x 10 <sup>-6</sup> °C <sup>-1</sup>	ASTM D696
Thermal Conductivity	1.81 x 10 <sup>-3</sup> cal.cm/sec/cm <sup>2</sup> .°C	ASTM C177
Dielectric Strength	13385 volts/mm	ASTM D149
Dielectric Constant	46	ASTM D150
Flexural Strength	42.4 MPa	ASTM D790
Maximum Operating Temperature	Wet: 60°C, Dry: 150°C	
Coverage	752cm <sup>2</sup> /kg @ 6mm	

## Directions for use

### Surface Preparation

Proper surface preparation is essential to the success of any epoxy application. In all cases the surface should be clean, dry, free from oils, and rough.

1. Remove all oils, dirt and grease by means of a strong cleaner/degreaser (**Devcon® Surface Cleaner/Cleaner Blend 300** is suitable for this process).
2. Roughen the surface by grit blasting (8-40 mesh grit) or grinding. A 75-125 micron profile is desired for most applications, 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. All abrasive preparation should be followed by another cleaning to remove any remnants from that process.
4. Repair surface as soon as possible to eliminate any changes or surface contaminants.
5. Note: Large surface areas or equipment subjected to thermal shock, impact or constant vibration should have expanded metal tack welded to the surface. The expanded metal should be solvent wiped, grit blasted, solvent wiped again to remove oil, grease and dust. The expanded metal should be raised at least 1.6mm off the surface to ensure that Wear Guard will get in between and under the expanded metal.

## Mixing

Ideal application temperature is 13°C - 32°C. Under cold conditions, heating the repair area to 38°C - 43°C is recommended to dry off any moisture, contamination, or solvents, as well as to assist epoxy in achieving maximum adhesion properties.

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### AUSTRALIA

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### NEW ZEALAND

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Unit 2, 38 Trugood Drive  
East Tamaki 2013, Auckland  
Phone (09) 272 1945 Fax (09) 273 6489

## Mix Ratio – Resin to hardener: Weight 2.5:1, Volume 2.5:1

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

1. Add hardener to resin.
2. Mix thoroughly with a putty knife or similar tool (continuously scrape material away from sides and bottom of container) until a uniform, streak free consistency is obtained.

INTERMEDIATE SIZES (4kg Units): Place resin and hardener on a flat, disposable surface such as cardboard, plywood, or a plastic sheet). Use a trowel or wide blade tool to mix in the material as in Step 2 above.

LARGE SIZES (10kg Units): 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 homogeneous mix of resin and hardener is attained.

### Application

If grit blasting is not possible, and expanded metal cannot be used, apply **Devcon Brushable Ceramic** at 280 - 460 microns to prime the metal surface. Allow to cure for approximately 2 hours, or until a fingernail can almost depress the primed surface. Immediately apply **Wear Guard High Impact** to the surface. DO NOT let the "prime coat" fully cure before applying **Wear Guard High Impact**.

Using a putty knife, trowel or spatula, a very light coat should be applied to "wet out" the surface, allowing for 100% contact and further thickness build up. Then continue to build up a desired thickness. Wear Guard can be trowelled to a smooth finish with water or by warming the trowel with a torch and lightly trowelling over the uncured wear system.

### Cure

**Wear Guard High Impact** fully cures in 16 hours at 21°C at 12.5mm, at which time it can be machined, drilled, or painted. Working time is 45 minutes.

### For Bridging Large Gaps or Holes

Place fibreglass sheet, expanded metal or mechanical fasteners between repair area and **Wear Guard High Impact** prior to application.

### For Vertical Surface Applications

**Wear Guard High Impact** can be troweled up to 19mm thick without sagging.

### For Maximum Physical Properties

Cure at room temperature for 2 ½ hours, then heat cure for 4 hours @ 65°C. This can be done with a hot box, heat lamps or other heat source. Never expose this system to a direct flame.

### For ±24°C Applications

Applying epoxy at temperatures below 24°C lengthens functional cure and pot life times. Conversely, applying above 24°C shortens functional cure and pot life.

### Compliances: None

### Storage and Shelf Life

Store in dry conditions between 10°C and 40°C, away from sources of heat and naked flames. Protect from frost. When stored in original sealed containers, the minimum shelf life is five (5) years.

### Packaging

**Wear Guard High Impact** is available in 4 kg and 10 kg kits.

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## Ordering Information:

4 Kg Kit	#D11464
10 Kg Kit	#D11460

## Health & Safety Information

The product is hazardous. A Material Safety Data Sheet is available from the ITW Polymers & Fluids Technical Department upon request or available on our website [www.itw-devcon.com.au](http://www.itw-devcon.com.au).

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