ThistleBond www.thistlebond.com

TECHNICAL DATA SHEET

High Temperature Ceramic Carbide Compound

ThistleBond 'High Temperature Ceramic Carbide Compound' is a high performance fluid grade engineering resurfacing compound specifically developed for high temperature immersion conditions and is ideal for resurfacing pumps, impellers, valves, tube sheets, water boxes, heat exchangers.

ThistleBond 'High Temperature Ceramic Carbide Compound' is based on a complex blend of phenolic epoxy resins and a special polyamino-amide curing system reinforced with carbide and ceramic particles to produce a coating with a high level of temperature, abrasion and adhesion properties combined with optimum physical and mechanical strength.

Before proceeding, please read the following information carefully to ensure that the correct application procedure is fully understood.

SURFACE PREPARATION

All dirt and loose material should be scraped away. Oil and grease should be removed with **ThistleBond 'Cleaner'**. Surfaces should then be abrasive blast cleaned to a minimum Sa2½ BS7079 Part A1 1989 or equivalent with a minimum blast profile of 75 microns (3 mil) corresponding to 'Medium' in BS7079 Part C3/ ISO8503/1. All loose abrasive dust and debris must be blown clear or vacuum cleaned away.

Existing steel surfaces which have corroded in a chemical environment may be contaminated by soluble iron salts within corrosion pits. To prepare these surfaces it is recommended that one of the following treatments be carried out prior to final dry abrasive blasting to the specified standard.

a) Blasting with a mixture of clean water and abrasive.

b) Initial dry blast cleaning to remove corrosion and surface coatings followed by high pressure clean water jetting (minimum 1000 psi/66 bar).

On sections of repairs which are not required to bond to the **ThistleBond 'High Temperature Ceramic Carbide Compound'** these surfaces should be treated with **ThistleBond Release 'Agent'.**

MIXING

ThistleBond 'High Temperature Ceramic Carbide Compound' is a two component solvent free product supplied as a resin component and an hardener component which must be mixed together prior to use.

Mix the entire contents of the resin and hardener containers.

Alternatively measure four volumes of resin component and one volume of hardener into a clean container. The two components should be thoroughly mixed until completely streak free.

The mixed material should be used within 60 minutes of mixing at 68°F. This time will be reduced at higher temperatures and extended at lower temperatures.

APPLICATION

The mixed material should be applied to the prepared area using a clean brush or squeegee. Application should be carried out as soon as possible after surface preparation is complete, and certainly the same day, otherwise flash blasting will be necessary before application.

Where necessary a reinforcing tape should be stippled in to the mixed product and further material applied over the tape, ensuring the edges of the tape are overlapped.

Machining of **ThistleBond 'High Temperature Ceramic Carbide Compound'** will cause excessive tool wear so care should be taken to finish the repair to the required size or dimensions. Formers treated with **ThistleBond 'Release Agent'** can be used to minimise machining.

All equipment must be cleaned IMMEDIATELY after use with **ThistleBond 'Cleaner'.**

Theoretical Coverage Rate
0.80 m² / kilo at 750 microns dft (8.50 ft² per kilo at 30 mils)

Volume Capacity
555cc (38.1 cu ins) per kilo

Recommended Film Thickness
Wet 750 microns (30 mils)
Dry 750 microns (30 mils)

PHYSICAL CONSTANTS

Mixing Ratio	**Resin**	**Hardener**	
	100	12	By weight
	4	1	By volume
Appearance	Resin	Dark Grey/Black Paste	
	Hardener	Amber Liquid	

Drying & Cure times

at 20°C (68°F)	Usable Life	60 minutes
	Initial Set	6 hours
	Minimum Overcoating	6 hours
	Maximum Overcoating	24 hours

Allow to cure for at least 24 hours above 20°C before putting into service. The product is designed to post cure in service.

The ultimate heat distortion temperature of the material will be determined by the in service post curing conditions.

Volume Solids 100%

V.O.C. Nil

Shelf Life Use within 5 years of purchase. Store in original sealed containers at temperatures between 5°C (40°F) and 30°C (86°F).

Operating Temperature

	Maximum	**Continuous**
Dry Heat	250°C (482°F)	170°C (338°F)
Wet Heat	180°C (356°F)	150°C (302°F)

PHYSICAL PROPERTIES

Abrasion Resistance ASTM D4060	0.065 ml loss per 1000 cycles - 1 kg load/CS17 wheel
Compressive Strength ASTM D695	915 kg/cm³ (13000 psi)
Corrosion Resistance ASTM B117	5000 hours
Flexural Strength ASTM D790	635 kg/cm² (9000 psi)
Heat Distortion Temperature ASTM D648	146°C (295°F) (Post Cured at 120°C for 6 hours)
Tensile Shear Adhesion ASTM D1002	195 kg/cm² (2800 psi) (Grit Blasted Steel)

HEALTH AND SAFETY

As long as normal good practice is observed **ThistleBond 'High Temperature Ceramic Carbide Compound'** can be safely used.

Protective gloves should be worn.

A fully detailed **Material Safety Data Sheet** is either included with the material or is available on request.

PACKAGING

Supplied in 3kg packs.

FOR FURTHER INFORMATION PLEASE CONTACT

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