

### TILEBOND 402

Flexible impact resistant epoxy adhesive

#### Description

Tilebond is a flexible, heat resistant epoxy adhesive for permanently bonding surfaces subject to impact, vibration and deflection.

**High Degree of Flexibility:** - Impacts and vibration are absorbed and dissipated along the bond line. This means the adhesive and tiles won't crack or be dislodged.

**Toughness & Resilience:** - The adhesive will recover to its normal state after shock loading and forced deformation.

**High Temperature Exposure:** - Exposure to temperatures up to 150°C (302°F) increases the adhesives flexibility unlike conventional epoxy adhesives which become more rigid.

**Adhesion:** - An adhesion promoter increases the bond strength to a variety of substrates.

Tilebond has proven to be highly successful in bonding fusion cast high alumina ceramic tiles for protection against the abrasive effects of transporting fuel, coal and shale. It has proven track record in both coal preparation plants and coal fired power stations.

#### Typical Properties

<b>Colour</b>	Light Grey
<b>Mixed Specific Gravity (ASTM D4659)</b>	1.42
<b>Permanent Volume Solids (BS 3900 A10, ASTM D2697)</b>	100%
<b>Pot Life (ISO 10364) (usable life after mixing)</b>	4.5 h at 10°C (50°F) 2.0 h at 20°C (68°F) 1.3 h at 30°C (86°F)
<b>Initial (Serviceable) Cure</b>	18 h at 20°C (68°F)
<b>Full Cure</b>	5 d at 20°C (68°F)
<b>Glass Transition Temperature (by differential scanning caloimetry)</b>	0°C (32°F)
<b>Typical Substrates</b>	Steel, Concrete
<b>Typical Adherents</b>	Ceramic, Alumina, Basalt, Glass etc.

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<b>Brookfield RVT Viscosity (Spindle No.7/2.5 rpm) (BS 5350: Part B8)</b>	2000 poise, 20°C (68°F)
<b>Max, Service Temperature</b>	150°C (302°F) Continuous (occasional excursions to 180°C (356°F) permissible for periods of up to 24hrs).
<b>Mechanical Properties</b>	Typical Values at 20°C (68°F)
<b>Impact Strength (ASTM D950-82)</b>	17.3 kJ/m <sup>2</sup>
<b>Vibrational Fatigue Strength (ASTM D3166-73 (79))</b>	6.0 M/mm <sup>2</sup> at 10 <sup>7</sup> cycles
<b>Lap Shear Strength (BS5350, Part C5)</b>	8.5 N/mm <sup>2</sup> (1230 psi), 18h 9.0 N/mm <sup>2</sup> (1300 psi), 24h 12.5 N/mm <sup>2</sup> (1810 psi), 5d
<b>Lap Shear Strength (Heat Cured, 1 hr 120°C/248°F) (BS5350, Part C5)</b>	6.2 N/mm <sup>2</sup> (900 psi)
<b>Lap Shear Strength after 14 days continuous heat soaking at 150°C(302°F) (BS5350, Part C5)</b>	6.0 N/mm <sup>2</sup> (870 psi)
<b>Torque Adhesion Strength (CEGB Midland Region Spec SM 85/2926)</b>	57 Nm (42.5 1bf.ft), 24h 74 Nm (55.0 1bf.ft), 5 d
<b>Torque Adhesion Strength after continuous heat soaking at 125°C (257°F) (CEGB Midland Region Spec SM 85/2926)</b>	52 Nm (38.5 1bf.ft)
<b>Tensile Strength (BS2782, 320C)</b>	15.0 N/mm <sup>2</sup> (2170 psi)
<b>Elongation at break (BS2782, 320C)</b>	8%
<b>Elastic Modulus (BS 2782, 320C)</b>	1350 N/mm <sup>2</sup>
<b>Flexural strength (BS 2782, 320C)</b>	22.0 N/mm <sup>2</sup> (3190 psi)
<b>Compression Yield Strength (BS2782, 345A)</b>	21.5 N/mm <sup>2</sup> (3120 psi)
<b>Shore D Hardness (ASTM D1484/ISO R868)</b>	72

### Instructions for use

#### Surface Protection

Steel or concrete surfaces may need to be mechanically abraded and/or degreased to achieve a clean sound substrate, free from loose rust, laitance, dust etc. Sandblasting, grinding and wire brushing are acceptable methods of abrasive cleaning. New concrete surfaces should be first allowed to cure for up to 14-28 days depending on ambient conditions. Tilebond may be applied to steel or concrete which has a sound protective coating. A light grit-blast or emery paper treatment should then provide an adequate mechanical key, but an adhesion test is always recommended.

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### Mixing and Application

The mixing ratio for base: hardener is 1:1 by volume (1.68:1 by weight). An automatic dispenser is recommended to achieve accurate proportioning in large scale applications or for frequent small scale use. The material should be mixed until a smooth uniform appearance is obtained. Application can be via a notched trowel or palette knife to achieve the desired film thickness, which may vary according to the conformity of the surface. The substrate temperature should be at least 3°C (5.4°F) higher than the dew point for given ambient temperature and humidity conditions, to prevent surface condensation occurring. The application temperature should be in the range of 5°C to 40°C (41°F to 104°F).

### Material Compatibility

Since the adhesive is solvent free, wet and dry thickness will be equal, therefore 1 litre of mixed material will cover 1 square meter at 1mm thickness, without allowing for wastage etc. Typical film builds are in the range of 0.5mm to 5.0mm.

### Cleaning

Suitable solvents are: cellulose thinners or acetone. Refer to solvent suppliers for safe handling information.

### Handling and Safety Properties

#### Hardener

Please see product safety data sheet for more information.

#### Base

Please see product safety data sheet for more information.

*When cured the product is not classified as Hazardous*

Tilebond 402 should be stored in temperatures between 5°C and 25°C (41°F to 77°F).

### Packages

Please contact our sales department for details.

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