

PRODUCT SPECIFICATION SHEET

BELZONA 1814

FN10238



GENERAL INFORMATION

Product Description:

A three component system (comprising base, solidifier and aggregate) for repairing and protecting surfaces against abrasive attack. The product is based on high molecular weight polymers and oligomers incorporating abrasion resistant ceramic aggregates. This material may be applied up to 12.7 mm (0.5 inch) thickness onto horizontal and vertical surfaces.

Application Areas:

The system protects the substrate from abrasive attack and is ideally suited for application to:

- Pipe elbows
- Screw conveyors
- Chutes and hoppers
- Centrifuges
- Agitators
- Slurry pumps

APPLICATION INFORMATION

Working Life

Will vary according to the temperature. Consult IFU for details. At 20°C (68°F) the usable life of mixed material will typically be 60 minutes.

Cure Time

The cure time is dependent on ambient conditions. Allow to cure for the times shown in the Belzona IFU before subjecting it to the conditions indicated.

Coverage Rate

When applied at 3 mm (0.12 inch) thickness, the theoretical coverage rate will be 4.27 sq.m. (46 sq.ft.) per 30kg unit.

When applied at 6 mm (0.25 inch) thickness, the theoretical coverage rate will be 2.14 sq.m. (23.03 sq.ft.) per 30kg unit.

Volume Capacity

427 cm³/kg

Base Component

Appearance Opaque thixotropic paste
Colour White
Density 1.19-1.23 g/cm³
Gel strength 290-310 g/cm

Solidifier Component

Appearance Clear liquid
Colour Amber
Density 1.00 - 1.02 g/cm³
Viscosity 3.6-3.9 Poise at 25°C (77°F)

Aggregate Component

Appearance Pre-wetted granular powder
Colour Black
Density (bulk) 1.93-1.98 g/cm³

Mixed Properties

Mixing Ratio by Weight (Base : Solidifier: Aggregate) 2.40 : 1 : 9.65
Mixing Ratio by Volume (Base : Solidifier : Aggregate) 2 : 1 : 5
Mixed Density 2.34 g/cm³

Slump Resistance

> 12.7 mm (0.5 inch)
VOC content (ASTM D2369 / EPA ref.24) 0.03% / 0.81 g/L

The above application information serves as introductory guide only. For full application details including the recommended application procedure/technique, refer to the Belzona IFU which is enclosed with each packaged product.

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ABRASION

Taber

The Taber abrasion resistance determined in accordance with ASTM D4060 with 1 kg load is typically:

H10 Wheels (Wet)

107 mm³ loss per 1000 cycles (20°C / 68°F cure & test)
73 mm³ loss per 1000 cycles (90°C / 194°F cure & 20°C / 68°F test)

CS17 Wheels (Dry)

11 mm³ loss per 1000 cycles (20°C / 68°F cure & test)

Grit impact

Direct impact of 2kg of G34 chilled iron grit at 80 psi and 90° angle, will typically result in volume loss of:

17 mm³ (20°C / 68°F cure & test)
16 mm³ (90°C / 194°F cure & 20°C / 68°F test)

ADHESION

Pull off adhesion

The PosiTest Dolly Pull Off strength on 10 mm thick grit blasted mild steel, as determined in accordance with ASTM D4541 and ISO 4624, will typically be:

10.2 MPa / 1480 psi (20°C / 68°F cure & test)
26.0 MPa / 3760 psi (90°C / 194°F cure & 20°C / 68°F test)

Tensile Shear

The tensile shear adhesion on grit blasted mild steel as determined in accordance with ASTM D1002, typical values will be:

6.6 MPa / 960 psi (20°C / 68°F cure & test)
17.2 MPa / 2490 psi (90°C / 194°F cure & 20°C / 68°F test)

Cleavage Adhesion

The cleavage adhesion on grit blasted mild steel substrate, as determined in accordance with ASTM D1062, will typically be:

190 N/mm / 1100 pli (20°C / 68°F cure & test)
330 N/mm / 1910 pli (90°C / 194°F cure & 20°C / 68°F test)

COMPRESSIVE PROPERTIES

When determined in accordance with ASTM D695, typical values will be:

Compressive Strength

74.4 MPa / 10790 psi (20°C / 68°F cure & test)
118.7 MPa / 17215 psi (90°C / 194°F cure & 20°C / 68°F test)

Proportional Limit

67.9 MPa / 9840 psi (20°C / 68°F cure & test)
81.8 MPa / 11870 psi (90°C / 194°F cure & 20°C / 68°F test)

Compressive Modulus

1610.2 MPa (2.30 x 10⁵ psi) (20°C / 68°F cure & test)
1480.4 MPa (2.10 x 10⁵ psi) (90°C / 194°F cure & 20°C / 68°F test)

FLEXURAL PROPERTIES

When determined in accordance with ASTM D790, typical values will be:

Flexural Strength

10.7 MPa / 1550 psi (20°C / 68°F cure & test)
46.7 MPa / 6760 psi (90°C / 194°F cure & 20°C / 68°F test)

Flexural modulus

4555 MPa / 6.60 x 10⁵ psi (20°C / 68°F cure & test)
4760 MPa / 6.90 x 10⁵ psi (90°C / 194°F cure & 20°C / 68°F test)

IMPACT RESISTANCE

Izod Pendulum

Izod impact strength when determined in accordance with ASTM D256, will typically be:

Un-notched:

1.7 kJ/m² (20°C / 68°F cure & test)
3.3 kJ/m² (90°C / 194°F cure & 20°C / 68°F test)

Notched:

1.6 kJ/m² (20°C / 68°F cure & test)
2.7 kJ/m² (90°C / 194°F cure & 20°C / 68°F test)

HEAT RESISTANCE

Heat Distortion Temperature (HDT)

The HDT when determined in accordance with ASTM D648, following a 7 day cure period, will typically be:

Cure temperature	HDT
10°C / 50°F	34°C / 93°F
20°C / 68°F	43°C / 109°F
40°C / 104°F	66°C / 151°F
90°C / 194°F	75°C / 167°F

Wet (Slurry) Service Temperature

For many typical wet (slurry) service applications, the product is suitable down from -40°C (-40°F) up to 60°C (140°F).

Dry Service Temperature

For many typical dry service applications, the product is suitable down from -40°C (-40°F) up to 75°C (167°F).

Dry Heat Resistance

The indicated degradation temperature in air based on Differential Scanning Calorimetry (DSC) operated in accordance with ISO11357 is typically 230°C (446°F).

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CHEMICAL RESISTANCE

While specifically designed for abrasion resistance, **Belzona 1814** exhibits excellent chemical resistance to a range of commonly found chemical substances including weak inorganic acids and bases.

SHELF LIFE

Separate base and solidifier components shall have a shelf life of 5 years from date of manufacture when stored in their original unopened containers between 5°C (41°F) and 30°C (86°F).

WARRANTY

This product will meet the performance claims stated herein when material is stored and used as instructed in the Belzona Information For Use leaflet. Belzona ensures that all its products are carefully manufactured to ensure the highest quality possible and are tested strictly in accordance with universally recognized standards (ASTM, ANSI, BS, DIN, ISO, etc.). Since Belzona has no control over the use of the product described herein, no warranty for any application can be given.

AVAILABILITY AND COST

Belzona 1814 is available from a network of Belzona Distributors throughout the world for prompt delivery to the application site. For information, consult the Belzona Distributor in your area.

MANUFACTURER / SUPPLIER

Belzona Limited,
Claro Road, Harrogate,
HG1 4DS, UK

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HEALTH AND SAFETY

Prior to using this material, please consult the relevant Safety Data Sheets.

TECHNICAL SERVICE

Complete technical assistance is available and includes fully trained Technical Consultants, technical service personnel and fully staffed research, development and quality control laboratories.

The technical data contained herein is based on the results of long term tests carried out in our laboratories and to the best of our knowledge is true and accurate on the date of publication. It is however subject to change without prior notice and the user should contact Belzona to verify the technical data is correct before specifying or ordering. No guarantee of accuracy is given or implied. We assume no responsibility for rates of coverage, performance or injury resulting from use. Liability, if any, is limited to the replacement of products. No other warranty or guarantee of any kind is made by Belzona, express or implied, whether statutory, by operation of law or otherwise, including merchantability or fitness for a particular purpose.

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