

# PRODUCT SPECIFICATION SHEET

## BELZONA 1814

FN10200



### 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 0.5 inch (12.7 mm) 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 68°F (20°C) 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 0.12 inch (3 mm) thickness, the theoretical coverage rate will be

46 sq.ft. (4.27 sq.m.) per 30kg unit.

When applied at 0.25 inch (6 mm) thickness, the theoretical coverage rate will be

23.03 sq.ft. (2.14 sq.m.) per 30kg unit.

**Volume Capacity**

427 cm<sup>3</sup>/ kg

**Base Component**

Appearance	Opaque thixotropic paste
Color	White
Density	1.19-1.21 g/cm <sup>3</sup>
Gel strength	140-155 g/cm

**Solidifier Component**

Appearance	Clear liquid
Color	Amber
Density	1.00 - 1.02 g/cm <sup>3</sup>
Viscosity	3.6-3.9 Poise at 77°F (25°C)

**Aggregate Component**

Appearance	Pre-wetted granular powder
Color	Black
Density (bulk)	1.93-1.98 g/cm <sup>3</sup>

**Mixed Properties**

Mixing Ratio by Weight (Base : Solidifier: Aggregate)	2.36 : 1 : 9.65
Mixing Ratio by Volume (Base : Solidifier : Aggregate)	2 : 1 : 5
Mixed Density	2.34 g/cm <sup>3</sup>

**Slump Resistance**

VOC content (ASTM D2369 / EPA ref.24)	> 0.5 inch (12.7 mm) 0.21% / 4.85 g/L
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*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)

51 mm<sup>3</sup> loss per 1000 cycles (68°F / 20°C cure)  
43 mm<sup>3</sup> loss per 1000 cycles (194°F / 90°C cure)

#### CS17 Wheels (Dry)

7 mm<sup>3</sup> loss per 1000 cycles (68°F / 20°C cure)

#### Grit impact

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

10 mm<sup>3</sup> (68°F / 20°C cure)  
8 mm<sup>3</sup> (194°F / 90°C cure)

### 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:

2745 psi / 18.9 MPa (68°F / 20°C cure & test)  
3870 psi / 26.7 MPa (194°F / 90°C cure & 68°F / 20°C test)

#### Tensile Shear

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

1370 psi / 9.5 MPa (68°F / 20°C cure & test)  
1685 psi / 11.6 MPa (194°F / 90°C cure & 68°F / 20°C test)

#### Cleavage Adhesion

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

775 pli / 136 N/mm (68°F / 20°C cure & test)  
1180 pli / 207 N/mm (194°F / 90°C cure & 68°F / 20°C test)

### COMPRESSIVE PROPERTIES

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

#### Compressive Yield

8515 psi / 58.7 MPa (68°F / 20°C cure & test)  
16920 psi / 116.7 MPa (194°F / 90°C cure & 68°F / 20°C test)

#### Limited Elasticity

7005 psi / 48.3 MPa (68°F / 20°C cure & test)  
14490 psi / 99.9 MPa (194°F / 90°C cure & 68°F / 20°C test)

#### Compressive Modulus

2.20 x 10<sup>5</sup> psi (1521.1 MPa) (68°F / 20°C cure & test)  
2.02 x 10<sup>5</sup> psi (1393.8 MPa) (194°F / 90°C cure & 68°F / 20°C test)

### FLEXURAL PROPERTIES

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

#### Flexural Strength

3490 psi / 24.1 MPa (68°F / 20°C cure & test)  
7035 psi / 48.5 MPa (194°F / 90°C cure & 68°F / 20°C test)

#### Flexural modulus

9.99 x 10<sup>5</sup> psi / 6890 MPa (68°F / 20°C cure & test)  
8.24 x 10<sup>5</sup> psi / 5683 MPa (194°F / 90°C cure & 68°F / 20°C test)

### IMPACT RESISTANCE

#### Izod Pendulum

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

#### Un-notched:

1.12 kJ/m<sup>2</sup> (68°F / 20°C cure)  
2.75 kJ/m<sup>2</sup> (194°F / 90°C cure)

#### Notched:

1.16 kJ/m<sup>2</sup> (68°F / 20°C cure)  
2.63 kJ/m<sup>2</sup> (194°F / 90°C cure)

### 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
50°F / 10°C	90°F / (32°C)
68°F / 20°C	109°F / (43°C)
104°F / 40°C	149°F / (65°C)
194°F / 90°C	176°F / (80°C)

#### Dry Heat Resistance

The indicated degradation temperature in air based on Differential Scanning Calorimetry (DSC) operated in accordance with ISO11357 is typically 437°F (225°C).

For many typical applications the product is suitable down from -40°F (-40°C) to 158°F (70°C).

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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 41°F (5°C) and 86°F (30°C).

### 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 Polymerics Ltd.  
Claro Road, Harrogate,  
HG1 4DS, UK

Belzona Inc.  
14300 NW 60<sup>th</sup> Ave,  
Miami Lakes, FL, 33014, USA

### 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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