

# PRODUCT SPECIFICATION SHEET

## BELZONA 1812

FN10040



### GENERAL INFORMATION

**Product Description:**

A two component system 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 from 1/8 inch (3 mm) to unlimited thickness onto horizontal or vertical surfaces.

**Application Areas:**

When mixed and applied as detailed in the Belzona Instructions for Use (IFU), the system protects the substrate from abrasive attack and is ideally suited for application to the following:

- Pipe bends
- Chutes and hoppers
- Deflector screens
- Wear plates
- Centrifuges
- Mixing bowls

### APPLICATION INFORMATION

**Working Life**

Will vary according to temperature. At 77°F (25°C) the usable life of mixed material is 20 minutes.

**Coverage Rate:**

Each 1 kg applied at 1/8 inch (3 mm) thickness will cover approximately 1.60 sq.ft. (0.149 sq.m.).

**Cure Time**

Cure times will vary depending on the ambient conditions and will be reduced for thicker sections and extended for thinner applications. At a thickness of approximately 1/4 in. (6 mm), allow to solidify for the times shown in the Belzona IFU before subjecting it to the conditions indicated.

**Volume Capacity**

26.85 cu.ins. (440 cc)/kg.  
53.7 cu.ins. (880 cc)/2kg unit.  
537 cu.ins. (8.8 litre)/20kg unit.

**Base Component**

Appearance Granular thixotropic paste  
Color Grey  
Density 2.2 - 2.4 g/cm<sup>3</sup>

**Solidifier Component**

Appearance Granular thixotropic paste  
Color Red  
Density 2.0 - 2.1 g/cm<sup>3</sup>

**Mixed Properties**

Mixing Ratio by Weight (Base : Solidifier)	4.5 : 1
Mixing Ratio by Volume (Base : Solidifier)	4 : 1
Mixed Density	2.27 g/cm <sup>3</sup>
Useable Life	
	at 70°F (22°C) 20-25 mins
	at 50°F (10°C) 45-60 mins
Tack Free Time	
	at 71°F (22°C) 4½ hours
	at 50°F (10°C) 8 hours
Slump Resistance	nil at 0.5 inch (12.7 mm)

*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.*

# PRODUCT SPECIFICATION SHEET

## BELZONA 1812

FN10040



### 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

#### Impact Abrasion

Test consists of firing 2 kg of G34 chilled iron grit at 75 psi and 90° angle:

**Belzona 1812** volume loss 8 mm<sup>3</sup>

### ADHESION

#### Tensile Shear

When tested in accordance with ASTM D1002 typical values will be:  
1950 psi (13.4 MPa)

### CHEMICAL ANALYSIS

The mixed **Belzona 1812** has been independently analyzed for halogens, heavy metals, and other corrosion-causing impurities, with the following typical results:

Analyte	Total Concentration (ppm)
Fluoride	159
Chloride	559
Bromide	ND (<12)
Sulfur	824
Nitrite	ND (<6)
Nitrate	ND (<6)
Lead	15.2
Zinc, Antimony, Arsenic, Bismuth, Cadmium, Tin, Silver, Mercury, Gallium and Indium	ND (<3.0)

ND : Not Detected

### CHEMICAL RESISTANCE

While specifically designed for dry heat abrasion resistance, **Belzona 1812** exhibits excellent chemical resistance to most commonly found chemical substances including inorganic acids and bases.

### COMPRESSIVE PROPERTIES

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

#### Compressive Yield Strength

14600 psi (100.6 MPa) 7 day cure  
10850 psi (74.9 MPa) 24 hour cure  
17000 psi (117.2 MPa) 24 hour 100°C post cure

### FLEXURAL PROPERTIES

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

#### Flexural Strength

7000 psi (48.2 MPa) 68°F (20°C) cure  
9250 psi (63.8 MPa) 212°F (100°C) cure

### HEAT RESISTANCE

#### Heat Distortion Temperature (HDT)

Tested to ASTM D648 (264 psi fiber stress), typical values obtained will be:

122°F (50°C) 68°F (20°C) cure  
208°F (98°C) 212°F (100°C) cure

#### Dry Heat Resistance

The indicated degradation temperature in air based on Differential Scanning Calorimetry (DSC) operated in accordance with ISO11357 is typically 392°F (200°C).

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

For many typical applications of dry abrasion, the product is suitable up to 300°F (150°C).

### IMPACT RESISTANCE

#### Izod Impact Resistance

Tested to ASTM D256 using notched test pieces is typically :  
1.85 kJ/m<sup>2</sup> 68°F (20°C) cure  
3.04 kJ/m<sup>2</sup> 212°F (100°C) cure

### 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 32°F (0°C) and 86°F (30°C).

# PRODUCT SPECIFICATION SHEET

## BELZONA 1812

FN10040



### WARRANTY

Belzona guarantees 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 further guarantees that all its products are carefully manufactured to ensure the highest quality possible and tested strictly in accordance with universally recognised 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 1812** 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.

### HEALTH AND SAFETY

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

### MANUFACTURER

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

Belzona Inc.  
2000 N.W. 88<sup>th</sup> Court,  
Miami, Florida, USA, 33172

### 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.

Nothing in the foregoing statement shall exclude or limit any liability of Belzona to the extent such liability cannot by law be excluded or limited.

Copyright © 2016 Belzona International Limited. Belzona® is a registered trademark.

*Belzona products are  
manufactured under an  
ISO 9001 Registered  
Quality Management System*

