

# PRODUCT SPECIFICATION SHEET

## BELZONA 4181

FN10079



### GENERAL INFORMATION

#### Product Description:

A heat or acid resistant trowelable system for repair and protection of concrete, stone and other rigid substrates subject to impact and abrasion. Designed for resistance to Inorganic acids, **Belzona 4181** uses a complex acid catalysable hybrid resin system incorporating closely packed acid resistant fillers. The product is supplied as a 3 component system, Base, Solidifier and Aggregate, that when combined, forms a trowelable consistency to rebuild damaged surfaces or to provide an impact and abrasion resistant surface.

#### Application Areas:

Ideally suited for horizontal surfaces, the system may be applied on vertical surfaces up to ¼" (6mm) thickness. Having outstanding adhesion, strength, hardness and acid resistance, **Belzona 4181** is ideally suited for :-

- Chemical drains and channels
- Gulleys
- Bunds
- Chemical transfer and holding areas
- Tank pads
- Pump bases
- Ovens

### APPLICATION INFORMATION

#### Working Life

Will vary according to temperature. At 77°F (25°C), use all mixed material within 30 minutes.

#### Coverage Rate

Each 15 kg unit applied at the minimum recommended film thickness of ¼ inch will cover approximately 10.67 sq.ft. (1.05 m<sup>2</sup> at a thickness of 6mm).

#### Cure Time

Will be reduced for thicker sections and extended for thinner applications. Allow to solidify for the times shown in the IFU before subjecting it to the conditions indicated.

#### Volume Capacity

384 cu.ins. (6300 cm<sup>3</sup>) per 15 kg unit.

#### Base Component

Appearance Clear Liquid  
Colour Light amber  
Viscosity 40 - 50 poise at 77°F (25°C)  
Density 1.17 - 1.19 g/cm<sup>3</sup>

#### Solidifier Component

Appearance Clear Liquid  
Color Amber  
Viscosity 3 - 6 cPs at 77°F (25°C)  
Density 1.05 - 1.07 g/cm<sup>3</sup>

#### Aggregate Component

Appearance Pre-wetted, fine granular powder  
Color Red  
Density 2.5 - 2.7 g/cm<sup>3</sup>

#### Mixing Ratio

For mixing small quantities the mixing ratio by weight of the component is:-  
(Base : Solidifier : Aggregate) 100 : 30 : 1000

*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**  
When tested in accordance with ASTM D4060 using H10 wheels wet, 1 kg load, typical loss per 1,000 cycles is 395 mm<sup>3</sup>

### ADHESION

**Tensile Shear**  
The tensile shear adhesion to steel of the polymeric binder, when tested in accordance with ASTM D1002 is typically 2,400 psi (16.5 MPa).

**Elcometer**  
Dry concrete 600 psi (4.14 MPa)\*

\* Cohesive failure of substrate

### CHEMICAL ANALYSIS

The mixed **Belzona 4181** has been independently analyzed for halogens, heavy metals, and other corrosion-causing impurities, with the following typical results:

Analyte	Total Concentration (ppm)
Fluoride	ND (<10)
Chloride	15
Bromide	ND (<10)
Sulfur	3
Nitrite	ND (<8)
Nitrate	ND (<8)
Tin	10.4
Arsenic	8
Antimony, Bismuth, Cadmium, Lead, Zinc, Silver, Mercury, Gallium and Indium	ND (<3.0)

ND : Not Detected

### CHEMICAL RESISTANCE

The material offers good resistance to a broad range of chemicals, particularly inorganic acids.

\* For a more detailed description of chemical resistance properties, refer to relevant Chemical Resistance chart.

### COMPRESSIVE PROPERTIES

**Compressive Strength**  
When tested in accordance with ASTM D695 the compressive strength is typically 9,150 psi (63.1 MPa).

### FLEXURAL PROPERTIES

**Flexural Strength**  
The flexural strength of the material (binder/ aggregate matrix), when tested to ASTM D790 is typically:

6,444 psi (44.4 MPa).

### HEAT RESISTANCE

**Heat Distortion Temperature (HDT)**  
The heat distortion temperature when tested to ASTM D648 is typically:

Ambient cure	129°F (54°C).
Post cure @ 100°C	365°F (186°C)
Post cure @ 150°C	420°F (216°C)

**Heat Resistance**  
For many typical applications involving impact or abrasion, the product is suitable up to 300°F (150°C). The material is not recommended for chemical immersion at elevated temperatures.

### 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).

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### 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 4181** 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 Safety Data Sheets.

### 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

### 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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