

# PRODUCT SPECIFICATION SHEET

## BELZONA 4141FR

FN10199



### GENERAL INFORMATION

#### Product Description:

A three-component system containing high molecular weight polymer, filled with low density, non-metallic aggregate. This material is a lightweight, fire resistant repair compound specifically designed for rebuilding severely damaged or worn vertical/overhead concrete and stone surfaces. This high build product can be applied on vertical surface and overhead surface with minimal support during application. To ensure excellent adhesion to the substrate, a primer **Belzona 4911** (Magma TX Conditioner), is used with the product.

#### Application Areas:

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

- Spalled concrete
- Archways
- Bridges
- Underground/Multi-story car parks
- Tunnels
- Stairwells
- Walls
- Cosmetic repairs

### APPLICATION INFORMATION

#### Working Life

Will vary according to temperature. At 20°C (68°F), use all mixed material within 50 minutes.

#### Cure Time

Allow to solidify for the times shown in the Belzona IFU before subjecting it to the conditions indicated.

#### Coverage Rate

When applied at 25mm thick, the theoretical coverage rate will be 0.2m<sup>2</sup> (2.1 sq ft.) per 3 kg unit.

#### Volume Capacity

5,450 cm<sup>3</sup> (333 in<sup>3</sup>) per 3 kg unit.

#### Base Component

Appearance Clear mobile liquid  
Colour Clear  
Density 1.12 g/cm<sup>3</sup>

#### Solidifier Component

Appearance Clear mobile liquid  
Colour Amber  
Density 1.18 g/cm<sup>3</sup>

#### Aggregate Component

Appearance Dust free aggregate  
Colour Light Grey  
Density 0.45 g/cm<sup>3</sup>

#### Mixed Properties

Cured Density 0.55 g/cm<sup>3</sup>  
Mixing Ratio (Base : Solidifier : Aggregate) by Weight 2.84 : 1 : 30

#### Unsupported Thickness Limits (per layer)

Vertical >50mm  
Overhead >25mm

*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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### ADHESION

#### Positest Dolly Pull-Off (ASTM D4541)

When tested in accordance with ASTM D4541, the pull off strength on concrete will typically be:

20mm Diameter Dollies

Dry concrete 1.00 Mpa (145 psi)\*

Wet concrete 1.03 MPa (149 psi)\*

50mm Diameter Dollies

Dry concrete 1.55 Mpa (225 psi)\*

Wet concrete 1.49 MPa (216 psi)\*

\*Cohesive failure within Belzona 4141FR.

### COMPRESSIVE PROPERTIES

#### Compressive Strength

Tested in accordance with ASTM D695, the compressive strength is typically 7.31 MPa (1,060 psi).

#### Compressive Modulus

Tested in accordance with EN 12190, the compressive modulus is typically 207 MPa (30,025 psi).

### CYCLIC TESTING

When tested in accordance with EN 13687-1, the thermal compatibility is  $\geq 2.0$  MPa (290 psi).

### FIRE RESISTANCE

When tested in accordance with ISO 11925-2 (SFI) and EN 13823 (SBI) and certified in accordance with EN 13501-1, the system achieved a classification of B s1 d0.

### FLEXURAL PROPERTIES

#### Flexural Strength

Tested in accordance with ASTM D790, the flexural strength is typically 3.67 MPa (532 psi).

#### Flexural Modulus

Tested in accordance with ASTM D790, the flexural modulus is typically 450 MPa (65,271 psi).

### HEAT RESISTANCE

#### Heat Resistance

During fire testing the product was exposed to temperatures greater than 1,900°C (3,450°F) for periods of 30 minutes, with no damage or loss of material from the surface.

Following 1-hour exposure in a furnace at 850°C (1562°F), the product will retain its form with a typical mass loss of 15%.

For typical applications, the product will be thermally stable down to -40°C (-40°F).

### IMPACT RESISTANCE

#### Izod Impact Strength

Tested to ASTM D256 using notched test pieces, the Izod impact strength is typically 0.36 kJ/m<sup>2</sup>.

### SMOKE DENSITY

When tested in accordance with BS 6853, the smoke density values will typically be:

Ao (on Max.)	Ao (off)
2.81	4.8

### TOXIC FUME

When tested in accordance with BS 6853, the toxic fume values will typically be:

Species	Mass Generated by 1m <sup>2</sup> burn sample (g)	London Underground Reference Value	London Underground Calculated R values
Carbon dioxide	1421.25	14000	0.10
Carbon monoxide	20.1	280	0.07
Hydrogen fluoride	0.25	4.9	0.05
Hydrogen chloride	0.5	15	0.03
Hydrogen bromide	0	20	0.00
Hydrogen cyanide	1.23	11	0.11
Nitrogen dioxide	6.6	7.6	0.87
Sulfur dioxide	0.0	53	0.00

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### THERMAL PROPERTIES

#### Thermal Conductivity

When determined using the Lee's Disc method, the thermal conductivity will typically be:

0.11 W.m<sup>-1</sup>.K<sup>-1</sup>

### SHELF LIFE

Separate base, solidifier and aggregate components shall have a shelf life of 3 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 4141FR** 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 60th 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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