

# PRODUCT SPECIFICATION SHEET

## BELZONA 5821

FN10182



### GENERAL INFORMATION

**Product Description:**

A two-component ceramic filled, solvent free coating system applied by brush or spray for protection of metallic and non-metallic surfaces operating under immersion conditions in contact with aqueous solutions. Exhibits excellent erosion-corrosion resistance.

**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:

- Cooling tower pans
- Submersible pumps
- Effluent tanks and channels
- Marine buoys
- Storage tanks
- Water boxes
- Manholes
- Internal and external pipework
- Steel and concrete piling
- Water inlet screens
- Chemical containment areas
- Sludge digesters
- Buried pipework and structures

### APPLICATION INFORMATION

**Working Life**

Will vary according to temperature. At 68°F (20°C) the usable life of mixed material is 1 hour and 45 minutes.

**Coverage Rate**

The **Belzona 5821** should be applied in 2 coats to achieve a minimum thickness of 16 mils (400 microns). The theoretical coverage rate at 16 mils (400 microns) is 27ft<sup>2</sup> (2.5m<sup>2</sup>)/liter. Refer to the Instructions for Use for practical coverage rate guidelines.

**Cure Time**

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

**Base Component**

Appearance Viscous liquid  
Color Yellow or Slate Grey  
Density 1.67 - 1.71 g/cm<sup>3</sup>

**Solidifier Component**

Appearance Clear mobile liquid  
Color Dark brown  
Density 1.00 - 1.04 g/cm<sup>3</sup>

**Mixed Properties**

Mixing Ratio by Weight (Base : Solidifier) 5 : 1  
Mixing Ratio by Volume (Base : Solidifier) 3 : 1  
Mixed Density 1.46 - 1.50 g/cm<sup>3</sup>  
VOC content (ASTM D2369/EPA ref. 24) 2.52%/37.3 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.*

# PRODUCT SPECIFICATION SHEET

## BELZONA 5821

FN10182



### ADHESION

#### Tensile Shear

When tested in accordance with ASTM D1002, using metal substrates, grit blasted to a 3-4 mil (75-100 micron) profile, typical values will be:

Aluminum	2,770 psi (19.1 MPa)	7 day cure at 72°F (22°C)
Brass	2,880 psi (19.9 MPa)	7 day cure at 72°F (22°C)
Mild steel	3,020 psi (20.8 MPa)	7 day cure at 72°F (22°C)
Copper	2,960 psi (20.4 MPa)	7 day cure at 72°F (22°C)
Stainless Steel	3,000 psi (20.7 MPa)	7 day cure at 72°F (22°C)

#### Pull Off Adhesion

When tested in accordance with ASTM D 4541/ ISO 4624, the pull off strength from grit blasted steel will be typically:  
5,290 psi (36.5 MPa) 7 day cure at 72°F (22°C)

### ABRASION

#### Taber

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

Wet (H10 wheels)	402 mm <sup>3</sup> loss per 1000 cycles
Dry (CS17 wheels)	86 mm <sup>3</sup> loss per 1000 cycles

7 day cure at 72°F (22°C)

### HEAT RESISTANCE

#### Heat Resistance

For many typical applications the material is suitable for continuous immersion in aqueous solutions up to 122°F (50°C). Please consult Belzona TKL for additional advice where immersed applications will operate close to 122°F (50°C).

#### Dry Heat Resistance

The indicated degradation temperature in air based on Differential Scanning Calorimetry (DSC) operated in accordance with ISO11357 is typically 320 °F (160°C).  
For many applications, the product is suitable down to -40°F (-40°C).

### COMPRESSIVE STRENGTH

#### Compressive yield strength

When tested in accordance with ASTM D695, typical values obtained will be:  
5,780 psi (39.9 MPa) 7 day cure at 72°F (22°C)

### FLEXURAL PROPERTIES

#### Flexural Strength

When tested to ASTM D790 typical values obtained will be:  
5,530 psi (38.1 MPa) 7 day cure at 72°F (22°C)

#### Flexural Modulus

When tested to ASTM D790 typical values obtained will be:  
3.3 x 10<sup>5</sup> psi (2275 MPa) 7 day cure at 72°F (22°C)

### HARDNESS

#### Shore D

The Shore D hardness of the material when tested to ASTM D2240 is typically:  
81 7 day cure at 72°F (22°C)

#### Koenig Pendulum

When tested to ISO 1522 the Koenig damping time of the coating is typically:  
104 seconds 7 day cure at 72°F (22°C)

#### Barcol

When tested to ASTM D2583 the Barcol hardness, Model No.935, will typically be:  
75 7 day cure at 72°F (22°C)

### CHEMICAL RESISTANCE

The material will demonstrate excellent resistance to a broad range of chemicals.

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

### IMMERSION RESISTANCE

#### Atlas Cell

When tested in accordance with NACE TM 0174 the coating will exhibit no rusting (ASTM D610 rating 10) or blistering (ASTM D714 rating 10) after 6 months immersion in de-ionized water at 104°F (40°C).

#### Seawater Immersion

When tested in accordance with ISO 2812-2, no blistering, rusting, cracking or delamination was observed after 6 months immersion in seawater at 104°F (40°C).

# PRODUCT SPECIFICATION SHEET

## BELZONA 5821

FN10182



### IMPACT STRENGTH

The Izod impact strength (notched) of the material when tested in accordance with ASTM D256 is typically:  
3.14 ft.lb./in<sup>2</sup> (6.6 KJ/m<sup>2</sup>)      7 day cure at 72°F (22°C)

### 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).

### TENSILE PROPERTIES

When determined in accordance with ASTM D638, typical values will be:

<b>Tensile Strength (Maximum)</b>	3,150 psi (21.7 MPa)	7 day cure at 72°F (22°C)
<b>Tensile Strength (Yield)</b>	1,850 psi (12.8 MPa)	7 day cure at 72°F (22°C)
<b>Elongation</b>	1.3 %	7 day cure at 72°F (22°C)
<b>Young's Modulus</b>	2.4 10 <sup>5</sup> psi (1655 MPa)	7 day cure at 72°F (22°C)

### 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 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 5821** 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

Belzona Polymeric Ltd.  
Claro Road  
Harrogate HG1 4DS  
United Kingdom

Belzona Inc.  
14300 N.W. 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.

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 © 2017 Belzona International Limited. Belzona® is a registered trademark.

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

