

# PRODUCT SPECIFICATION SHEET

## BELZONA 5831

FN10102



### GENERAL INFORMATION

**Product Description:**

A two component solvent free system applied by brush for protection of metallic surfaces in contact with aqueous solutions.

**Application Areas:**

When mixed and applied as detailed in the Belzona Instructions for Use (IFU), the system is specifically designed for applications where water or oil contamination cannot be effectively removed including splash zones and underwater.

### APPLICATION INFORMATION

**Working Life**

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

**Coverage Rate**

Applied at a thickness of 12mil (300 microns), a theoretical coverage rate of 35.5 sq.ft./liter (3.3 sq.m./liter) per coat should be achieved.

In practice many factors influence the exact coverage rate achieved. Application at low temperatures will reduce coverage rates. On rough surfaces such as pitted steel the coverage rate achieved may be reduced by up to 20%.

Application under water will reduce coverage rates further.

**Cure Time**

The **Belzona 5831** system will cure under cold, wet conditions down to 41°F (5°C). Allow to solidify for the times shown in the Belzona IFU before subjecting it to the conditions indicated.

**Base Component**

Appearance	Viscous liquid
Color	White
Density	2.19 - 2.25 g/cm <sup>3</sup>

**Solidifier Component**

Appearance	Thixotropic liquid
Color	Black or Brown
Density	1.23 - 1.29 g/cm <sup>3</sup>

**Mixed Properties**

Mixing Ratio by Weight (Base : Solidifier)	1.75 : 1
Mixing Ratio by Volume (Base : Solidifier)	1 : 1
Mixed Density	1.75 g/cm <sup>3</sup>

*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

#### Tensile Shear

When tested in accordance with ASTM D1002, using mild steel substrates:

Clean and dry	1770 psi (12.2 MPa)	Ground Blasted
	1920 psi (13.2 MPa)	
Underwater	1540 psi (10.6 MPa)	Ground Blasted
	1090 psi (7.5 MPa)	
Oil contaminated	1810 psi (12.5 MPa)	Ground Blasted
	2010 psi (13.8 MPa)	

### ATLAS CELL TESTING

When tested in accordance with NACE standard TM0174 in contact with de-ionized water at 104°F (40°C) no blistering is observed in the immersed portion or vapor phase after 1,000 hours immersion.

### CATHODIC DISBONDMENT

When tested in accordance with ASTM G8, the disbondment diameter is typically: 0.3 in. (7.6mm)

### CHEMICAL ANALYSIS

The mixed **Belzona 5831** has been independently analyzed for halogens, heavy metals, and other corrosion-causing impurities, with the following typical results:

Analyte	Total Concentration (ppm)
Fluoride	283
Chloride	1392
Bromide	ND (<10)
Sulfur	9979
Nitrite	12
Nitrate	15
Zinc	6
Antimony	44.7
Lead	3.6
Arsenic, Bismuth, Cadmium, Tin, Silver, Mercury, Gallium and Indium	ND (<3.0)
	ND : Not Detected

### COMPRESSIVE STRENGTH

When tested in accordance with ASTM D695, typical value obtained is: 3070 psi (21.2 MPa)

### ELECTRICAL PROPERTIES

When tested in accordance with ASTM D149, method A, with voltage rise of 2kV/s, typical value will be:  
Dielectric strength 30.9 kV/mm

### FLEXURAL STRENGTH

#### Flexural Strength

When tested to ASTM D790 typical values obtained are:

2780 psi (19.2 MPa) ambient cure

### HARDNESS

#### Shore D

The Shore D hardness of the material when tested to ASTM D2240 is typically: 72

### HEAT RESISTANCE

#### Wet Heat Resistance

For many typical applications the material is suitable for continuous immersion in aqueous solutions up to 104°F (40°C).

#### Dry Heat Resistance

The indicated degradation temperature in air based on Differential Scanning Calorimetry (DSC) operated in accordance with ISO11357 is typically 356°F (180°C).

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

### IMMERSION RESISTANCE

When applied to either grit blasted steel or ground steel the coating shows no blistering or undercutting after 2000 hours immersion in tap water or sea water.

### IMPACT STRENGTH

The Izod impact strength of the material when tested in accordance with ASTM D256 is typically:

un-notched 49 J/m  
notched 36 J/m

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### SALT SPRAY RESISTANCE

When tested in accordance with ASTM B117, the coating shows no blistering or corrosion after 2000 hours exposure, whether applied to:

- Clean grit blasted steel
- Clean ground steel
- Rusty steel prepared by wire brushing

### 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>	1050 psi (7.23 MPa)	7 days at 68°F (20°C)
	1160 psi (8.00 MPa)	28 days at 68°F (20°C)
<b>Tensile Strength (Yield)</b>	370 psi (2.55 MPa)	7 days at 68°F (20°C)
	415 psi (2.86 MPa)	28 days at 68°F (20°C)
<b>Elongation</b>	4.9 %	7 days at 68°F (20°C)
	4.5 %	28 days at 68°F (20°C)
<b>Young's Modulus</b>	9.27 x 10 <sup>4</sup> psi (639 MPa)	7 days at 68°F (20°C)
	1.15 x 10 <sup>5</sup> psi (792 MPa)	28 days at 68°F (20°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 5831** 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 Polymerics Ltd.  
Claro Road, Harrogate,  
HG1 4DS, UK

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

### HEALTH AND SAFETY

Prior to using this material, please consult the relevant Material 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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