

# PRODUCT SPECIFICATION SHEET

## BELZONA 2311

FN10057



### GENERAL INFORMATION

#### Product Description:

A two component rapid-curing elastomeric material Ideal for emergency and permanent repairs. Packaged in sealed, foil laminated sachets. When mixed the material cures rapidly to form a tough but flexible elastomeric repair.

#### 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:

- Conveyor belts
- Rubber rollers
- Pump linings
- Bonding metal to rubber
- Hoses
- Off-road tire sidewalls
- Gaskets
- Rubber linings
- Pump impellers
- Cables

### APPLICATION INFORMATION

#### Working Life

Will vary according to temperature. At 77°F (25°C) the usable life of mixed material is 2 minutes.

#### Cure Time

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

#### Volume Capacity

54.7 cu.in. (885 cc)/kg.  
4.1 cu.in. (66.5 cc) per 75 gm unit.

#### Sag Resistance

Material shows no signs of slump at 0.25 inch (6 mm). Very slight at 0.5 inch (12 mm).

#### Base Component

Appearance Pale straw colored viscous liquid  
Density 1.1 - 1.2 g/cm<sup>3</sup>  
Viscosity 190-330 P at 77°F/25°C

#### Solidifier Component

Appearance Black / White paste  
Odor None  
Density 1.16 g/cm<sup>3</sup>

#### Mixed Components

Mixing Ratio by Weight (Base : Solidifier) 0.974 : 1  
Mixing Ratio by Volume (Base : Solidifier) 1 : 1  
Appearance Black / White soft paste  
Odor None  
Density 1.13 g/cm<sup>3</sup>  
Peak Exotherm (75g mix) 50°C to 55°C

*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

The Taber abrasion resistance with 1 kg load is typically:

H18 Wheels (Wet)  
at 70°F (21°C) 45 mm<sup>3</sup>loss per 1000 cycles

H18 Wheels (Dry)  
at 70°F (21°C) 109 mm<sup>3</sup>loss per 1000 cycles

### ADHESION

#### 90° Peel Adhesion

When tested in accordance with ASTM D429 (modified), typical adhesion values achieved when the material is used in conjunction with the designated surface will be:

Mild steel 119 pli (2137 kg/m)

#### 180° Peel Adhesion

When tested in accordance with ASTM D413, typical adhesion values achieved when the material is used in conjunction with the designated surface will be:

Natural rubber 14 pli (250 kg/m)\*  
Styrene-butadiene 14 pli (250 kg/m)\*

\* Cohesive failure in the substrate material.

### CHEMICAL ANALYSIS

The mixed **Belzona 2311** has been independently analyzed for halogens, heavy metals, and other corrosion-causing impurities, with the following typical results:

Analyte	Total Concentration (ppm)
Fluoride	12
Chloride	209
Bromide	ND (<12)
Sulfur	150
Nitrite	ND (<8)
Nitrate	ND (<8)
Zinc	4.1
Antimony, Arsenic, Bismuth, Cadmium, Lead, Tin, Silver, Mercury, Gallium and Indium	ND (<3.0)

ND : Not Detected

### CHEMICAL RESISTANCE

Once fully cured, the material will demonstrate excellent resistance to most commonly found inorganic acids and alkalis at concentrations up to 20%.

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

### COMPRESSION RESISTANCE

When tested in accordance with BS 903 part A6 the compression set will typically be: 13%

### ELECTRICAL PROPERTIES

#### Dielectric Strength

Tested to ASTM D149 is typically 300 volts/mil (12,000 volts/mm).

### ELONGATION & TENSILE PROPERTIES

#### Elongation

Tested in accordance with ASTM D412 (Die C) typical value will be: 450%.

#### Tensile Strength

Tested in accordance with ASTM D412 (Die C) typical value will be 1400 psi (9.65 MPa).

### HARDNESS

#### Shore A Hardness:

Tested in accordance with ASTM D2240 typical value will be: 75.

### HEAT RESISTANCE

#### Heat Resistance

For many typical applications the product is suitable for operation in the temperature range -40°F to 150°F (-40°C to 65°C).

### TEAR STRENGTH

#### Tear Strength

Tested in accordance with ASTM D624 is typically 260 pli.

### SHELF LIFE

Separate base and solidifier components shall have a shelf life of 3 years from date of manufacture when stored in their original unopened containers between 41°F (5°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 2311** 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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