

# PRODUCT SPECIFICATION SHEET

## BELZONA 2111

FN10046



### GENERAL INFORMATION

#### Product Description:

A durable and abrasion resistant system designed for rebuilding, repairing and resurfacing elastomeric or metal components. A two component, thixotropic, non-slumping material.

#### Application Areas:

When mixed and applied as detailed in the Belzona Instructions for Use (IFU), the system is designed for applications where significant thicknesses (in excess of 50 mils.) and durability are required:

- Rubber linings
- Building-up flights on conveyor belts
- Chutes, screens and wear plates
- Protection of clip joints on conveyor belts
- Pumps and impellers
- Repair of worn, split or torn areas on sheet rubber
- Storage hoppers

### APPLICATION INFORMATION

#### Working Life

Will vary according to temperature. At 77°F (25°C) the usable life of mixed material is 12 minutes.

#### Cure Time

Will be reduced for thicker sections and extended for thinner applications. At a thickness of approximately 0.10 ins (2.5 mm), allow to solidify for the times shown in the Belzona IFU before subjecting it to the conditions indicated.

#### Coverage Rate

Applied at a thickness of 100 mil. (2,500 microns), each 500 gram unit will cover an area of 1.95 sq.ft. (0.183 sq.m.).

#### Volume Capacity

57 in<sup>3</sup> (936 cm<sup>3</sup>)/kg.  
28.5 in<sup>3</sup> (468 cm<sup>3</sup>) per 500g unit.

#### Base Component

Appearance Oil white viscous liquid  
Density 1.06 - 1.09 g/cm<sup>3</sup>  
Viscosity 22,000 - 32,000 cps at 77°F (25°C)

#### Solidifier Component

Appearance Thin black liquid  
Odor Slightly glycolic  
Density 0.99 - 1.01 g/cm<sup>3</sup>  
Viscosity 200 - 400 cps at 77°F (25°C)  
Sag Resistance 0.5 inch (12 mm) minimum when mixed with Base component

*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

#### DIN

The abrasion resistance of the material when tested to DIN 53-516 will be typically 130 (relative volume loss).

#### Taber

The Taber abrasion resistance with 1 kg load is typically:

H18 Wheels (Wet)  
at 70°F (21°C) 10 mm<sup>3</sup>  
at 170°F (77°C) 192 mm<sup>3</sup>  
loss per 1000 cycles

H18 Wheels (Dry)  
at 70°F (21°C) 33 mm<sup>3</sup>  
at 170°F (77°C) 187 mm<sup>3</sup>  
loss per 1000 cycles

### ADHESION

#### 90° Peel Adhesion

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

Mild steel	180 pli (3214 kg/m)
Copper	180 pli (3214 kg/m)
Aluminum	80 pli (1428 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:

GRP	60 pli (1071 kg/m)
Natural rubber	14 pli (250 kg/m)*
Polychloroprene	47 pli (839 kg/m)*
PVC	18 pli (321 kg/m)*
Styrene-butadiene	14 pli (250 kg/m)*
Polyurethane	80 pli (1428 kg/m)*

#### Positest dolly pull-off

When tested in accordance with ASTM D4541, typical adhesion values achieved when the material is used in conjunction with the designated surface will be:

Concrete	900 psi (6.21MPa)*
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\* Cohesive failure in the substrate material.

### 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:

4.9%

### ELECTRICAL PROPERTIES

#### Dielectric Strength

Tested to ASTM D149 is typically 500 volts/mil (20,000 volts/mm).

#### Dielectric Constant

Tested to ASTM D150 is typically 7.5 at 1 MHz

#### Dissipation Factor

Tested to ASTM D150 is typically 0.085 at 1 MHz

#### Volume Resistivity

Tested to ASTM D257 is typically  $1.4 \times 10^{12}$  ohm cm.

#### Surface Resistivity

Tested to ASTM D257 is typically  $1.8 \times 10^{11}$  ohm.

### ELONGATION & TENSILE PROPERTIES

#### Elongation

Tested in accordance with ASTM D412 (Die C) is typically 550%.

#### Tensile Strength

Tested in accordance with ASTM D412 (Die C) is typically 2000 psi (13.79 MPa).

### HARDNESS

#### Shore A Hardness:

Tested in accordance with ASTM D2240 typical value will be: 85.

### 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).

### LEACHABLE CHLORIDES

The leachable chloride levels of the solidified material when tested to ASTM D512C will be less than 20 ppm.

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### RADIATION RESISTANCE

The material, when tested to BS 4247, Part 1, 1981, "Surface materials for use in radioactive areas" has a typical Decontamination Factor (DF) of 35 and an Ease of Decontamination (ED) classification of Fair.

This test determines the ease with which a radiation contaminated surface may be rendered free from contamination.

### TEAR STRENGTH

#### **Tear Strength**

Tested in accordance with ASTM D624 is typically 350 pli (6286kg/m).

### SHELF LIFE

Separate base and solidifier components will have a shelf life of at least 3 years when stored between 32°F (0°C) and 86°F (30°C).

### APPROVALS/ACCEPTANCES

ABS  
GENERAL MOTORS  
FORD  
LAKE ONTARIO STEEL CO.

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### 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 recognised 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 2111** 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 Material Safety Data Sheets.

### MANUFACTURER

Belzona Polymerics Ltd.  
Claro Road, Harrogate,  
HG1 4DS, UK

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

### 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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ISO 9001:2008  
Q 09335  
ISO 14001:2004  
EMS 509612

Manufactured under an ISO 9000  
Registered Quality Management System

