PRODUCT SPECIFICATION SHEET
BELZONA 2111
FN10179

BELZONA®
Repair • Protect • Improve

GENERAL INFORMATION

Product Description:
Two component, durable and abrasion resistant, high build elastomeric system designed for repairing, resurfacing and rebuilding.

Application Areas:
When mixed and applied as detailed in the Belzona Instructions for Use (IFU), the system is ideally suited for the following applications where significant thickness and durability are required:

- Rubber linings / sheeting
- Conveyor belts; flight build up
- Conveyor belts; clip joint protection
- Outer sheath of trailing mining cables
- Chutes, screens and wear plates
- Storage hoppers
- Pumps and impellers

APPLICATION INFORMATION

Application Methods
Applicator
Spatula

Gel Time & Working Life
The gel time and working life will vary according to temperature. At 68°F/20°C the gel time and usable life of mixed material will typically be 4 and 12 minutes respectively. Consult the Belzona IFU for specific details.

Cure Time
Cure times will vary depending on ambient conditions; consult the Belzona IFU for specific details.

Volume Capacity
The volume capacity of mixed material will be
54 cu.in. (885cm³)/kg
27.0 cu.in. (442cm³) per 500g unit.

Base Component

Appearance	Pale straw coloured viscous liquid
Density	1.1 – 1.2 g/cm³
Viscosity	190-330 P at 77°F/25°C

Solidifier Component

Appearance	Thin black liquid
Density	1.07 g/cm³
Viscosity	12.5 P at 77°F/25°C

Mixed Properties

Appearance	Black paste
Density	1.13 g/cm³
Slump Resistance	0.5 inch / 12.7 mm
VOC content (ASTM D2369/EPA ref 24)	0.16%/1.85 g/L
Mixing Ratio by Weight (Base : Solidifier)	3.4 : 1
Mixing Ratio by Volume (Base : Solidifier)	3.2 : 1

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
When determined in accordance with ASTM D4060 using H18 wheels and 1kg load, the sliding Taber abrasion resistance will be:

Dry
41 mm^3 loss per 1000 cycles (7 day cure at 68°F/20°C)

Wet
16 mm^3 loss per 1000 cycles (7 day cure at 68°F/20°C)

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 and recommended surface conditioner will be:

Substrate	Peak Adhesion	Failure Mode
Grit Blasted Mild Steel	172 pli 3065 kg/m	Tape Failure

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 and recommended surface conditioner will be:

Substrate	Peak Adhesion	Average Peel Adhesion	Failure Mode
EPDM (Shore A: 75)	24 pli 425 kg/m	6 pli 115 kg/m	Cohesive in Substrate
Nitrile (Shore A: 77)	39 pli 690 kg/m	20 pli 360 kg/m	Cohesive in Substrate
Neoprene (Shore A: 83)	20 pli 365 kg/m	13 pli 240 kg/m	Cohesive in Substrate
Natural Rubber (Shore A: 51)	22 pli 385 kg/m	7 pli 120 kg/m	Cohesive in Substrate
Commercial Rubber (Natural/SBR) (Shore A: 72)	24 pli 435 kg/m	13 pli 230 kg/m	Cohesive in Substrate
Insertion Rubber (commercial with textile reinforcement) (Shore A: 70)	20 pli 360 kg/m	6 pli 115 kg/m	Cohesive in Substrate

CHEMICAL RESISTANCE

Once fully cured, the material will demonstrate excellent resistance to a range of chemicals including; dilute inorganic acids and alkalis.

* *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 following a 30 minute recovery period will typically be 22%.

ELECTRICAL PROPERTIES

Dielectric Strength
When tested in accordance with ASTM D149 the dielectric strength will typically be 7.1 kV/mm (177 V/mil) when tested at 500 V/s

Dielectric Constant
When tested in accordance with ASTM D150 the dielectric constant will typically be 5.02 when tested at 1.0 V and 100 Hz

Dissipation Factor
When tested in accordance with ASTM D150 the dissipation factor will typically be 0.021 when tested at 1.0 V and 100 Hz

Surface Resistivity
When tested in accordance with ASTM D257 the surface resistivity will typically be 7.66 x 10^{12} Ω when tested at 500 V DC

Volume Resistivity
When tested in accordance with ASTM D257 the volume resistivity will typically be 2.30 x 10^{12} Ωcm when tested at 500 V DC

ELONGATION & TENSILE PROPERTIES

When tested in accordance with ASTM D412 (Die C) the tensile properties will typically be:

	24 hours at 68°F/20°C	7 days at 68°F/20°C
Tensile Strength	1970 psi 13.6 MPa	2355 psi 16.2 MPa
Tensile Modulus	180 psi 1.3 MPa	335 psi 2.3 MPa
Elongation	450-550 %	350-450 %

GAS PERMEABILITY

Carbon Dioxide Permeability
When applied at a thickness of 2.6 mm and tested in accordance with ASTM D1434-82 at 23°C (73°F), **Belzona 2111** would typically achieve:

39 ml/m².atm.day.

HARDNESS

Shore A Hardness:
Tested in accordance with ASTM D2240 typical value will be;

91	(24 hour cure at 68°F/20°C)
93	(7 day cure at 68°F/20°C)

HEAT RESISTANCE

Dry
For many typical applications the product will be suitable for operation in dry conditions in the temperature range -40°F to 194°F (-40°C to 90°C).

Wet
For wet or immersed conditions the maximum service temperature is 104°F (40°C).

TEAR STRENGTH

Tear Strength
When tested in accordance with ASTM D624 will typically be:

370 pli / 6600 kg/m (24 hour and 7 day cure at 68°F/20°C)

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 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.

MANUFACTURER / SUPPLIER

Belzona Limited,
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.

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