PRODUCT SPECIFICATION SHEET
BELZONA 2211
FN10143

GENERAL INFORMATION

Product Description:
A two-component, thixotropic, non-slumping material based on blends of low, medium and high molecular weight reactive polymers. Once combined, the base and solidifier form a tough, but flexible multi-purpose elastomeric repair compound.

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

- Expansion joints
- Tire sidewalls (off road)
- Diaphragms
- Outer sheath of trailing mining cables
- Rubber rollers
- Gasket seals
- Rubber linings in pumps, pump impellers, valves, tanks and guide bearings

APPLICATION INFORMATION

Working Life
The usable life will vary according to temperature. At 68°F (20°C), use all mixed material within 15 minutes.

Application Method
Plastic applicator or spatula.

Application Temperature
41°F-104°F (5°C-40°C).

Overcoat
Will vary according to ambient temperature and humidity. See Belzona IFU for details.

Cure Time
Will be reduced for thicker sections and extended for thinner applications. At a thickness of approximately 0.10 in. (0.25cm), allow to solidify for the times shown in the Belzona IFU before subjecting it to the conditions indicated.

Volume Capacity
The volume capacity is:
51.8 cu.in. (849 cm^3)/kg.
28.5 cu.in.(467 cm^3)/550g unit

Base Component	
Appearance	Black paste
Density	1.09 g/cm^3

Solidifier Component	
Appearance	Pale grey colored paste
Density	1.43 g/cm^3

Mixed Properties	
Mixing Ratio by Weight (Base : Solidifier)	2.3 : 1
Mixing Ratio by Volume (Base : Solidifier)	3 : 1
Appearance	Dark grey paste
Mix Density	1.18 g/cm^3
Slump Resistance	0.5 inch (12.7mm)

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 tested in accordance with ASTM D 4060, the Taber abrasion resistance with 1kg load will typically be:

	Cure 7 days at 68°F (20°C)
H18 Wheels (Wet)	180 mm^3 loss per 1000 cycles
H18 Wheels (Dry)	400 mm^3 loss per 1000 cycles

ADHESION

90° Peel Adhesion
When tested in accordance with ASTM D429 (modified), and used in conjunction with the recommended surface conditioner typical adhesion values will be:

Substrate	Maximum Adhesion	Average Peel Adhesion	Failure Mode
Grit Blasted Mild Steel	171 pli 3053 kg/m	159 pli 2844 kg/m	Cohesive in Elastomer

180° Peel Adhesion
When tested in accordance with ASTM D413, and used in conjunction with the recommended surface conditioner typical adhesion values will be:

Substrate	Maximum Adhesion	Average Peel Adhesion	Failure Mode
EPDM (Shore A: 75)	27 pli 488 kg/m	10 pli 177 kg/m	Cohesive in Substrate
Nitrile (Shore A: 77)	50 pli 897 kg/m	20 pli 355 kg/m	Cohesive in Substrate
Neoprene (Shore A: 83)	38 pli 671 kg/m	13 pli 229 kg/m	Cohesive in Substrate
Natural Rubber (Shore A: 51)	12 pli 214 kg/m	6 pli 108 kg/m	Cohesive in Substrate
Commercial Rubber (Natural/SBR) (Shore A: 72)	20 pli 359 kg/m	6 pli 108 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 SET

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

35%	30 minutes recovery
16%	6 hours recovery

ELECTRICAL PROPERTIES

Dielectric Strength
When tested in accordance with ASTM D149 the dielectric strength will typically be 6.4 kV/mm when tested at 500 V/s

Dielectric Constant
When tested in accordance with ASTM D150 the dielectric constant will typically be 5.8 when tested at 1.0 V and 100 Hz

Dissipation Factor
When tested in accordance with ASTM D150 the dissipation factor will typically be 0.104 when tested at 1.0 V and 100 Hz

Surface Resistivity
When tested in accordance with ASTM D257 the surface resistivity will typically be 4.41×10^{11} Ω when tested at 500 V DC

Volume Resistivity
When tested in accordance with ASTM D257 the volume resistivity will typically be 8.08×10^{10} Ωcm when tested at 500 V DC

ELONGATION & TENSILE PROPERTIES

When tested in accordance with ASTM D412 (Die C), typical values will be:

Elongation	**Cure at 68°F (20°C)**
1000%	24 hours
1000%	7 days

Tensile Strength	**Cure at 68°F (20°C)**
900 psi (6.2 MPa)	24 hours
1500 psi (10.34 MPa)	7 days

Tensile Modulus	**Cure at 68°F (20°C)**
53 psi (0.365 MPa)	7 days

EXPANSION JOINTS

When tested in accordance with a modified version of ASTM C719 on concrete and steel substrates using the appropriate conditioner the material is qualified as a Class 25 sealant for ±25% movement.

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HARDNESS

When determined in accordance with ASTM D2240, typical values will be:

Shore A	**Cure at 68°F (20°C)**
69	24 hrs
73	7 days

HEAT RESISTANCE

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

TEAR STRENGTH

When tested in accordance with ASTM D624 typical values will be:

Tear Strength	**Cure at 68°F (20°C)**
190 pli (3392 kg/m)	24 hrs
230 pli (4106 kg/m)	7 days

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 32°F (0°C) and 86°F (30°C).

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 2211 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.
2000 N.W. 88th 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.

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