PRODUCT SPECIFICATION SHEET
BELZONA 1131
FN10018

BELZONA®
Repair • Protect • Improve

GENERAL INFORMATION

Product Description:

A two component paste grade system used to create low friction surfaces subject to intermittent contact and where specific loads are low. Based on a silicon steel alloy blended with graphite and high molecular weight reactive polymers and oligomers. When cured, the material is fully machinable and possesses self-lubricating properties and surface porosity.

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:

- Sleeves
- Bushings
- Shafts
- Slideways
- Low friction surfaces

APPLICATION INFORMATION

Working Life
Will vary according to temperature. At 77°F (25°C) the usable life of mixed material is 15 minutes.

Cure Time
Cure times will vary depending on the ambient conditions and will be reduced for thicker sections and extended for thinner applications. Consult the Belzona IFU for specific details.

Volume Capacity
34.2 in^3 (561 cm^3) per kg.

Base Component

Appearance	Paste
Colour	Dark grey
Gel strength at 68°F (20°C)	150 - 350 g/cm QH
Density	1.84 - 1.90 g/cm^3

Solidifier Component

Appearance	Paste
Colour	Black
Gel strength at 68°F (20°C)	80 - 160 g/cm QV
Density	1.42 - 1.46 g/cm^3

Mixed Properties

Mixing Ratio by Weight (Base : Solidifier)	4 : 1
Mixing Ratio by Volume (Base : Solidifier)	3 : 1
Mixed Form	Paste
Peak Exotherm Temperature	279 - 307°F (137 - 153°C)
Time to Peak Exotherm	20 - 28 mins.
Slump Resistance	nil at 1.0 inch (25mm)

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
Taber abrasion resistance determined in accordance with ASTM D4060 with 1 kg load is typically:

H10 Wheels (Wet)	1022 mm^3 loss per 1000 cycles
CS17 Wheels (Dry)	61 mm^3 loss per 1000 cycles

ADHESION

Tensile Shear
When tested in accordance with ASTM D1002, using degreased mild steel strips, grit blasted to a 3-4 mil (75 micron) profile, typical values will be:

3,020 psi (20.8 MPa)	68°F (20°C) cure
3,000 psi (20.7 MPa)	212°F (100°C) cure

Pull Off Adhesion
When tested in accordance with ASTM D4541/ISO4624, the pull off strength from grit blasted steel will be typically:
1915 psi (13.2 MPa)

CHEMICAL RESISTANCE

Once fully cured, the material will demonstrate excellent resistance to most commonly found inorganic acids and alkalis at concentrations up to 20%. The material is also resistant to hydrocarbons, mineral oils, lubricating oils and many other commonly found chemicals.

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

COMPRESSIVE PROPERTIES

When determined in accordance with ASTM D695, typical values will be:

	Compressive Strength	Proportional Limit	Youngs Modulus
41°F/5°C cure & 68°F/20°C test	54.3 MPa 7,872 psi	44.9 MPa 6,507 psi	1,125.3 MPa 1.63 x 10^5 psi
68°F/20°C cure & test	82.7 MPa 11,987 psi	64.2 MPa 9,313 psi	1,519.1 MPa 2.20 x 10^5 psi
212°F/100°C cure & 68°F/20°C test	104.8 MPa 15,193 psi	74.2 MPa 10,764 psi	1,411.6 MPa 2.05 x 10^5 psi

FLEXURAL PROPERTIES

When determined in accordance with ASTM D790, typical values will be:

Flexural Strength

5,465 psi (37.7 MPa)	41°F (5°C) cure
8,860 psi (61.1 MPa)	68°F (20°C) cure
11,335 psi (78.1 MPa)	212°F (100°C) cure

HARDNESS

Shore D & Barcol Hardness
The Shore D and Barcol hardness, when determined in accordance with ASTM D2240 and ASTM D2583, will typically be:

	Ambient cure (68°F/20°C)	Post cure (212°F/100°C)
Shore D	81	85
Barcol 935	79	82

HEAT RESISTANCE

Heat Distortion Temperature (HDT)
Tested to ASTM D648 (264 psi fibre stress), typical values obtained will be:

124°F (51°C)	68°F (20°C) cure
190°F (88°C)	212°F (100°C) cure

Service Temperature Limits
For many typical applications, the product will be suitable for use at the following service temperatures:

Type of Service	Temperature
Lower temperature limit	-40 °C (-40 °F)
Upper temperature limit (dry)	75 °C (167 °F)
Upper temperature limit (wet)	60 °C (140 °F)

Dry Heat Resistance
The indicated degradation temperature in air based on Differential Scanning Calorimetry (DSC) operated in accordance with ISO11357 is typically 392°F (200°C).

IMPACT RESISTANCE

Izod Pendulum
Izod impact strength, when determined in accordance with ASTM D256, will typically be:

	Reversed notched Izod Impact Strength	Un-notched Izod Impact Strength
68°F/20°C cure & test	4.0 KJ/m^2 42.6 J/m	3.9 KJ/m^2 49.2 J/m
212°F/100°C cure & 68°F/20°C test	5.0 KJ/m^2 50.9 J/m	5.5 KJ/m^2 69.8 J/m

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 41°F (5°C) and 86°F (30°C).

APPROVALS/ACCEPTANCES

The material has received recognition from organizations worldwide including:

U.S.D.A.

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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 1131 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 Limited,
Claro Road, Harrogate,
HG1 4DS, UK

Belzona Inc.
14300 NW 60th 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.

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