

PRODUCT SPECIFICATION SHEET

BELZONA 1821

FN10131



GENERAL INFORMATION

Product Description:

A two component fluid grade material based on silicon steel alloy blended within high molecular weight reactive polymers and oligomers. The system is designed for creating positive grip surfaces on machinery and equipment when used to bond Belzona Supergrip or Surefoot aggregate to the surface. Also for casting components where machining is required and as a high strength structural adhesive for bonding or for creation of irregular load bearing shims with good electrical insulation characteristics. For use in Original Equipment Manufacture or repair situations.

Application Areas:

When mixed and applied as detailed in the Belzona Instructions for Use (IFU), the system provides a durable non-slip surface with excellent adhesion, wear and chemical resistance:

- Tank tops
- Vehicle step-ups
- Conveyor drive drums
- Fork lift grab arms
- Fire escapes
- Loading ramps
- Brake test rollers
- Walkways
- Chequer plate access areas
- Take off and feed rollers

APPLICATION INFORMATION

Working Life

Will vary according to temperature. At 77°F (25°C) the usable life of mixed material is 20 minutes.

Coverage Rate

This depends on the choice of aggregate and nature of substrate. As a practical guide a 1kg unit will cover 9.25 sq.ft. (0.86 sq.m.) at a thickness of 20 mil (500 microns).

Cure Time

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

Volume Capacity

29.2 cu.ins. (478 cc)/kg.

Base Component

Appearance Paste
Colour Dark grey
Density 2.40 - 2.60 g/cm³

Solidifier Component

Appearance Mobile liquid
Colour Amber
Density 0.95 - 1.05 g/cm³

Mixed Properties

Mixing Ratio by Weight (Base : Solidifier) 6.7 : 1
Mixing Ratio by Volume (Base : Solidifier) 2.7 : 1
Mixed Form Viscous liquid
Peak Exotherm Temperature 259 - 288°F (126 -142°C)
Time to Peak Exotherm 26 - 32 mins
Mixed Density 2.07 - 2.10 g/cm³
VOC content (ASTM D2369 / EPA ref. 24) 0.07% / 1.46 g/L

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 determined in accordance with ASTM D4060 with 1 kg load is typically:
CS17 Wheels (Dry) 40 mm³ loss per 1000 cycles

ADHESION

Tensile Shear

When tested in accordance with ASTM D1002, using degreased strips, grit blasted to a 3-4 mil profile, typical values will be:

Aluminum 1,500 psi (10.3 MPa)
Mild steel 3,000 psi (20.6 MPa)

Pull Off Adhesion

When tested in accordance with ASTM D4541/ ISO 4624, the pull off strength will be typically:

Blasted mild steel 2,300 psi (15.9 MPa)
Blasted aluminium 1,800 psi (12.4 MPa)
Manually abraded aluminium 1,900 psi (13.1 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.

COMPRESSIVE PROPERTIES

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

	Compressive Strength	Proportional Limit	Youngs Modulus
24 hours at 68°F/20°C cure & test	80.3 MPa 11,641 psi	69.7 MPa 10,106 psi	1,377.8 MPa 2.00 x 10 ⁵ psi
68°F/20°C cure & test	96.2 MPa 13,957 psi	77.7 MPa 11,266 psi	1,248.3 MPa 1.81 x 10 ⁵ psi
212°F/100°C cure & 68°F/20°C test	86.8 MPa 12,592 psi	69.6 MPa 10,094 psi	1,601.8 MPa 2.32 x 10 ⁵ psi

CORROSION PROTECTION

Corrosion Resistance

Will show no visible signs of corrosion after 5,000 hours exposure in the ASTM B117 salt spray cabinet.

ELONGATION & TENSILE PROPERTIES

When determined in accordance with ASTM D638, typical values will be:

Elongation

1.03%

Tensile Strength

6,180 psi (42.61 MPa)

Young's Modulus

7.79x10⁵ psi (5,369 MPa)

FLEXURAL PROPERTIES

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

Flexural Strength

8,900 psi (61.4 MPa)

HARDNESS

Shore D

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

85 68°F (20°C) cure

Barcol Hardness

The Barcol hardness, when determined in accordance with ASTM D2583, will typically be:

	24-hour ambient cure (68°F/20°C)	7-day ambient cure (68°F/20°C)	Post cure (140°F/60°C)
Barcol 934-1	6	17	19
Barcol 935	80	83	85

HEAT RESISTANCE

Heat Distortion Temperature (HDT)

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

117°F (47°C) 68°F (20°C) cure
151°F (66°C) 212°F (100°C) cure

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).

For many applications the product is suitable down to -40°F (-40°C).

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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
24 hours at 68°F/20°C cure & test	4.8 KJ/m ² 48.1 J/m	5.1 KJ/m ² 64.4 J/m
68°F/20°C cure & test	6.1 KJ/m ² 62.8 J/m	6.3 KJ/m ² 79.6 J/m
212°F/100°C cure & 68°F/20°C test	5.6 KJ/m ² 57.2 J/m	6.1 KJ/m ² 76.3 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).

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 1821 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,
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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.

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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