BELZONA 1821 Product Specification Sheet

1. PRODUCT NAME

Belzona® 1821
(Fluid Metal)
Fluid grade repair system for creating positive grip surfaces and for casting components where machining is required.

2. MANUFACTURER

Belzona Inc.,
2000 N.W. 88th Court
Miami, Florida 33172

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

3. PRODUCT DESCRIPTION

A two component machinable 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 to the surface. The system provides a durable non-slip surface with excellent adhesion, wear and chemical resistance.

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

4. TECHNICAL DATA

Base Component

Appearance	Paste
Color	Dark gray
Density	2.40 - 2.60 g/cm³

Solidifier Component

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

Mixed Properties

Mixing Ratio by Weight (Base : Solidifier)	6.8 : 1
Mixing Ratio by Volume (Base : Solidifier)	2.7 : 1
Mixed Form	Viscous liquid
Peak Exotherm Temperature	275 - 302°F (135 -150°C)
Time to Peak Exotherm	20 - 26 mins
Mixed Density	2.07 - 2.10 g/cm³

• Shelf Life:
Separate base and solidifier components should have a shelf life of at least 5 years when stored between 32°F (0°C) and 86°F (30°C).

• 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).

• Volume Capacity:
The volume capacity of mixed **Belzona® 1821** is 29.2 cu.ins. (478 cc)/kg.

• Cure Time:
Allow the system to solidify for the times shown in the chart below before subjecting it to the conditions indicated.

5. PHYSICAL/ MECHANICAL PROPERTIES

Determined after 7 days cure at 68°F (20°C).

• Abrasion Resistance:
Taber
The Taber abrasion resistance 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 2,100 psi	(153 kgs/cm²)
Mild steel 3,000 psi	(211 kgs/cm²)

Pull-off Adhesion
When tested in accordance with ASTM D4541:

Blasted mild steel	1,170 psi (82.3 kgs/cm²)
Blasted aluminium	770 psi (54 kgs/cm²)
Manually abraded aluminium	630 psi (44.3 kgs/cm²)

• 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 Strength:
When tested in accordance with ASTM D695, typical values obtained will be 11,300 psi (795 kgs/cm²).

CURE TIMES

TEMPERATURE	41°F (5°C)	59°F (15°C)	77°F (25°C)
Movement or use involving no loading	16 hrs	6 hrs	4 hrs
Machining and/or light loading	16 hrs	6 hrs	3 hrs
Full mechanical or thermal loading	1½ days	1½ days	1 day
Contact with chemicals	14 days	10 days	5 days

Publication No. 133-3-11

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

• ***Flexural Strength:***
When tested to ASTM D790, typical values obtained will be 8,900 psi (626 kgs/cm²).

• ***Hardness:***
The hardness of the material when tested to ASTM D2240 is typically 85 Shore D.

• ***Heat Distortion Temperature:***
When tested to ASTM D648 (264 psi fiber stress), typical values obtained will be 140°F (60°C).

• ***Heat Resistance:***
For many typical applications, the product is thermally stable up to 300°F (150°C) dry, and 140°F (60°C) wet, and down to -40°F (-40°C).

• ***Impact Strength:***
When tested to ASTM D256 is typically 1.84ft.lb./in. (99 J/m).

6. SURFACE PREPARATION AND APPLICATION PROCEDURES

For proper technique, refer to the Belzona® Instructions For Use leaflet which is enclosed with each packaged product.

7. 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.

8. WARRANTY

Belzona® guarantees this product will meet the performance claims stated herein when material is stored and used as instructed in the Belzona® Instructions 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, etc.). Since Belzona® has no control over the use of the product described herein, no warranty for any application can be given.

9. TECHNICAL SERVICES

Complete technical assistance is available and includes fully trained Technical Consultants, technical service personnel and fully staffed research, development and quality control laboratories.

10. HEALTH AND SAFETY

Prior to using this material, please consult the relevant Material Safety Data Sheets.

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

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Printed in England Publication No. 133-3-11