

PRODUCT SPECIFICATION SHEET

BELZONA 1121

FN10012



GENERAL INFORMATION

Product Description:

A two component paste grade system with extended working life for repairing and rebuilding machinery and equipment. Based on a silicon steel alloy blended with high molecular weight reactive polymers and oligomers. Also used as a high strength structural adhesive for bonding or for creation of irregular load bearing shims with good electrical insulation characteristics. Once cured, the repair is durable and fully machinable. 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 is ideally suited for application to the following:

- Shafts
- Hydraulic rams
- Bearing housings
- Bushing fits
- Keyways
- Engine blocks
- Casings
- Leveling
- Pipes
- Tanks
- Flange faces

APPLICATION INFORMATION

Working Life

Will vary according to temperature. At 77°F (25°C) the usable life of mixed material is 35 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

23.5 cu.in. (385 cm³)/kg.

Base Component

Appearance	Paste
Color	Dark gray
Gel Strength at 77°F (25°C)	175 - 325 g/cm QH
Density	2.80 - 3.00 g/cm ³

Solidifier Component

Appearance	Paste
Color	Light gray
Gel Strength at 77°F (25°C)	100 - 250 g/cm QV
Density	2.37 - 2.43 g/cm ³

Mixed Properties

Mixing Ratio by Weight (Base : Solidifier)	1.2 : 1
Mixing Ratio by Volume (Base : Solidifier)	1 : 1
Mixed Form	Paste
Peak Exotherm Temp.	86-113°F (30 - 45°C)
Time to Peak Exotherm	43 - 63 mins.
Slump Resistance	nil at 1.0 inch (2.5 cm)
Mixed Density	2.57- 2.71 g/cm ³

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 with 1 kg load is typically:
 H10 Wheels (Wet) 1660 mm³ loss per 1000 cycles
 CS17 Wheels (Dry) 55 mm³ loss per 1000 cycles

ADHESION

Cleavage

When tested to ASTM D1062 typical values will be:
 Mild steel 1250 lbs./in. (22.3 kg/mm)

Tensile Shear

When tested in accordance with ASTM D1002, using substrates which are degreased and grit blasted to a 3 mil (75 microns) profile, typical values will be :

Mild steel 3300 psi (22.8 MPa)
 Aluminium 1900 psi (13.1 MPa)
 Copper 2000 psi (13.8 MPa)

Pull Off Adhesion

When tested in accordance with ASTM D 4541/ ISO 4624, the pull off strength from grit blasted steel will be typically:
 2180 psi (15.0 MPa)

CHEMICAL ANALYSIS

The mixed **Belzona 1121** has been independently analyzed for halogens, heavy metals, and other corrosion-causing impurities, with the following typical results:

Analyte	Total Concentration (ppm)
Fluoride	132
Chloride	168
Bromide	ND (<11)
Sulfur	14153
Nitrite	1
Nitrate	4
Zinc	4.2
Antimony, Arsenic, Bismuth, Cadmium, Lead, Tin, Silver, Mercury, Gallium and Indium	ND (<3.0)
	ND : Not Detected

CHEMICAL RESISTANCE

Once fully cured, the material will demonstrate excellent resistance to most commonly found inorganic acids and alkalis at concentrations up to 10%.

The material is also resistant to hydro-carbons, 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
 12,500 psi (86.2 MPa)

CORROSION PROTECTION

Corrosion Resistance

Once fully cured, will show no visible signs of corrosion after 5,000 hours exposure in the ASTM B117-73 salt spray cabinet.

ELECTRICAL PROPERTIES

Dielectric Strength

Tested to ASTM D149 is typically: 149 volts/mil (5960 volts/mm)

Dielectric Constant

Tested to ASTM D150 is typically: 8 at 1000Hz
 6 at 1 MHz

Dissipation Factor

Tested to ASTM D150 is typically: < 0.0005 at 1 MHz
 0.0050 at 1000 HZ

Surface Resistivity

Tested to ASTM D257 is typically: 8.7 x 10¹⁴ ohm.

Volume Resistivity

Tested to ASTM D257 is typically: 6.0 x 10¹⁵ ohm cm.

ELONGATION & TENSILE PROPERTIES

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

Tensile Strength

3339 psi (23.02 MPa) 68°F (20°C)
 3433 psi (23.67 MPa) 212°F (100°C)

Elongation

0.205% 68°F (20°C)
 0.234% 212°F (100°C)

Young's Modulus

1.22x10⁶ psi (8443 MPa) 68°F (20°C)
 1.31x10⁶ psi (9019 MPa) 212°F (100°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 1121 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 Material Safety Data Sheets.

MANUFACTURER

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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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