PRODUCT SPECIFICATION SHEET
BELZONA 1511
FN10207

GENERAL INFORMATION

Product Description:
A two component high temperature paste grade system for rebuilding metals damaged by erosion-corrosion.
When cured, the material is durable yet fully machinable. The product has been specifically designed for use with Belzona High Temperature coatings. Also used 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:
Rebuilding erosion-corrosion and/or smoothing welds, etc., prior to application of Belzona High Temperature coatings.

APPLICATION INFORMATION

Working Life
Will vary according to temperature. At 68°F (20°C) the usable life of mixed material is 60 minutes.

Application Methods
Spatula/Applicator

Application Temperature
Application should occur in the following ambient temperature range: 50°F/10°C to 104°F/40°C

Cure Time
Cure times before returning to service will vary depending on the ambient conditions and whether overcoated with a Belzona coating. Consult the Belzona IFU for specific details.

Overcoat Time
The maximum overcoat time is 24 hours.

Volume Capacity
23.4in³ (383cm³)/kg.

Base Component

Appearance	Paste
Color	Dark grey
Gel strength at 77°F (25°C)	>120 g/cm QH
Density	2.88 – 2.92 g/cm³

Solidifier Component

Appearance	Paste
Color	Light grey
Gel strength at 77°F (25°C)	>30 g/cm QV
Density	1.72 – 1.76 g/cm³

Mixed Properties

Mixing Ratio by Weight (Base : Solidifier)	5 : 1
Mixed Form	Paste
Slump Resistance	nil at 0.5 inch (1.27 cm)
Mixed Density	2.61 g/cm³
VOC content (ASTM D2369 / EPA ref. 24):	0.05% / 1.24g/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.

PRODUCT SPECIFICATION SHEET
BELZONA 1511
FN10207

ABRASION

Taber
Dry sliding abrasion resistance, when determined in accordance with ASTM D4060 using CS17 wheels, will typically result in:

12.2 mm^3 loss per 1000 cycles
(212°F/100°C cure & 68°F/20°C test)

Wet sliding abrasion resistance, when determined in accordance with ASTM D4060 using H10 wheels, will typically result in:

673 mm^3 loss per 1000 cycles
(212°F/100°C cure & 68°F/20°C test)

ADHESION

Cleavage Adhesion
The Cleavage Strength when applied to grit blasted mild steel, as determined in accordance with ASTM D1062, will typically be:

1190 pli / 208 N/mm	(68°F/20°C cure & test)
1120 pli / 196 N/mm	(212°F/100°C cure & 68°F/20°C test)
1340 pli / 234 N/mm	(320°F/160°C cure & 68°F/20°C test)
950 pli / 166 N/mm	(212°F/100°C cure & test)

Pull Off Adhesion
The PosiTest Dolly Pull Off Strength on 10mm thick grit blasted mild steel, as determined in accordance with ASTM D4541 and ISO 4624, will typically be:

4580 psi / 31.6 MPa	(68°F/20°C cure)
3450 psi / 23.8 MPa	(212°F/100°C cure)
3690 psi / 25.5 MPa	(320°F/160°C cure)

Tensile Shear Adhesion
The Tensile Shear Adhesion on grit blasted mild steel, as determined in accordance with ASTM D1002, will typically be:

2930 psi / 20.2 MPa	(68°F/20°C cure & test)
3190 psi / 22.0 MPa	(212°F/100°C cure & 68°F/20°C test)
2980 psi / 20.5 MPa	(320°F/160°C cure & 68°F/20°C test)
2690 psi / 18.5 MPa	(212°F/100°C cure & test)
2260 psi / 15.6 MPa	(320°F/160°C cure & test)

COMPRESSIVE PROPERTIES

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

Maximum Compressive Strength

10,780 psi / 74.3 MPa	(68°F/20°C cure & test)
17,360 psi / 119.7 MPa	(212°F/100°C cure & 68°F/20°C test)
19,280 psi / 132.9 MPa	(320°F/160°C cure & 68°F/20°C test)
10,970 psi / 75.7 MPa	(212°F/100°C cure & test)
7,870 psi / 54.3 MPa	(320°F/160°C cure & test)

Compressive Yield Strength

8320 psi / 57.4 MPa	(68°F/20°C cure & test)
12020 psi / 82.9 MPa	(212°F/100°C cure & 68°F/20°C test)
12130 psi / 83.7 MPa	(320°F/160°C cure & 68°F/20°C test)
6730 psi / 46.4 MPa	(212°F/100°C cure & test)
3820 psi / 26.3 MPa	(320°F/160°C cure & test)

Compressive Modulus

1.49 x 10^5 psi / 1030 MPa	(68°F/20°C cure & test)
1.49 x 10^5 psi / 1030 MPa	(212°F/100°C cure & 68°F/20°C test)
1.48 x 10^5 psi / 1020 MPa	(320°F/160°C cure & 68°F/20°C test)
1.28 x 10^5 psi / 880 MPa	(212°F/100°C cure & test)
0.77 x 10^5 psi / 530 MPa	(320°F/160°C cure & test)

ELONGATION & TENSILE PROPERTIES

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

Tensile Strength

4190 psi / 28.9 MPa	(68°F/20°C cure & test)
5520 psi / 38.1 MPa	(212°F/100°C cure & 68°F/20°C test)
3730 psi / 25.7 MPa	(320°F/160°C cure & 68°F/20°C test)

Elongation

0.58 %	(68°F/20°C cure & test)
0.88 %	(212°F/100°C cure & 68°F/20°C test)
0.47 %	(320°F/160°C cure & 68°F/20°C test)

Young's Modulus

9.04 x 10^5 psi / 6230 MPa	(68°F/20°C cure & test)
8.43 x 10^5 psi / 5820 MPa	(212°F/100°C cure & 68°F/20°C test)
9.21 x 10^5 psi / 6530 MPa	(320°F/160°C cure & 68°F/20°C test)

FLEXURAL PROPERTIES

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

Flexural Strength

6970 psi / 48.1 MPa	(68°F/20°C cure & test)
7010 psi / 48.3 MPa	(212°F/100°C cure & 68°F/20°C test)
6350 psi / 43.8 MPa	(320°F/160°C cure & 68°F/20°C test)

Flexural Modulus

6.48 x 10^5 psi / 4470 MPa	(68°F/20°C cure & test)
6.05 x 10^5 psi / 4170 MPa	(212°F/100°C cure & 68°F/20°C test)
5.57 x 10^5 psi / 3840 MPa	(320°F/160°C cure & 68°F/20°C test)

PRODUCT SPECIFICATION SHEET
BELZONA 1511
FN10207

HARDNESS

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

	68°F/20°C cure	212°F/100°C cure	320°F/160°C cure
Shore D	81	81	82
Barcol (Model 934-1)	9	35	37
Barcol (Model 935)	80	85	85

HEAT RESISTANCE

Heat Distortion & Glass Transition Temperature (HDT & T_g)
The HDT and T_g when determined in accordance with ASTM D648 and ISO 11357-2 respectively, following a 7 day cure period, will typically be:

Cure temperature	HDT	T_g
68°F/20°C	127°F/53°C	145°F/63°C
212°F/100°C	275°F/135°C	291°F/144°C
284°F/140°C	347°F/175°C	-
320°F/160°C	381°F/194°C	379°F/193°C

Dry Heat Resistance
The indicated degradation temperature in air based on Differential Scanning Calorimetry (DSC) operated in accordance with ISO11357 is typically 446°F (230°C).

IMPACT RESISTANCE

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

Reverse Notched:	5.2 KJ/m²	(68°F/20°C cure & test)
	6.0 KJ/m²	(212°F/100°C cure & 68°F/20°C test)
Un-notched:	5.6 KJ/m²	(68°F/20°C cure & test)
	9.2 KJ/m²	(212°F/100°C cure & 68°F/20°C test)

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).

PRODUCT SPECIFICATION SHEET
BELZONA 1511
FN10207

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 1511 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 Polymerics Ltd.
Claro Road, Harrogate,
HG1 4DS, UK

Belzona Inc.
14300 N.W. 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