PRODUCT SPECIFICATION SHEET
BELZONA 1812
FN10225 (CERAMIC CARBIDE FP)

GENERAL INFORMATION

Product Description:
A two-component system for repairing and protecting surfaces against abrasive attack

The product is based on high molecular-weight polymers and oligomers incorporating abrasion resistant ceramic aggregates. This material may be applied from 1/8 in. (3 mm) to unlimited thickness onto horizontal or vertical surfaces.

Application Areas:
When mixed and applied as detailed in the Belzona Instructions for Use (IFU), the system protects the substrate from abrasive attack and is ideally suited for application to the following:

- Pipe bends
- Wear plates
- Chutes and hoppers
- Centrifuges
- Deflector screens
- Mixing bowls

APPLICATION INFORMATION

Application Methods: Applicator, spatula

Application Temperature: The application should ideally occur from 41 °F to 86 °F (5 °C to 30 °C).

Working Life: The working life will vary according to application temperature. The usable life of mixed material will typically be 20 minutes at 77 °F (25 °C). Consult the Belzona IFU for specific details.

Volume Capacity: The volume capacity of Belzona 1812 is 29.62 in^3/kg (485.4 cm^3/kg).

Cure Times:
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.

Base Component

Appearance	Granular thixotropic paste
Color	Grey
Density	2.0 – 2.2 g/cm^3

Solidifier Component

Appearance	Granular thixotropic paste
Color	Red
Density	1.9 – 2.1 g/cm^3

Mixed Properties

Mixing Ratio by Weight (Base: Solidifier)	4.5: 1
Mixing Ratio by Volume (Base: Solidifier)	4.0: 1
Mixed Density	2.06 g/cm^3

Usable Life	70 °F (22 °C)	25 - 30 min
	50 °F (10 °C)	45 – 60 min
Touch-Dry Time	70 °F (22 °C)	4 ½ hours
	50 °F (10 °C)	8 hours

Slump Resistance: Nil at 0.5 in. (12.7 mm)

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
When tested in accordance with ASTM D4060 (1-kg load), the sliding abrasion of samples cured under the conditions stated below (per 1,000 cycles) will typically be:

H10 Wheels (Wet)	110 mm^3 loss – 72 °F (22 °C) cure

ADHESION

Tensile Shear
When tested in accordance with ASTM D1002, the tensile shear of Belzona 1812 applied onto metallic samples abrasive-blasted to an average surface profile of 3 mil (75 µm) and cured at 72 °F (22 °C) will typically be:

1,980 psi (13.6 MPa)

CHEMICAL RESISTANCE

While specifically designed for dry heat abrasion resistance, Belzona 1812 exhibits excellent resistance to a broad range of chemicals including dilute inorganic acids and bases.

COMPRESSIVE PROPERTIES

When tested in accordance with ASTM D695, the compressive properties of samples cured under the conditions stated below will typically be:

Compressive Yield Strength

10,250 psi (70.7 MPa)	72 °F (22 °C) for 7 days
8,900 psi (61.4 MPa)	72 °F (22 °C) for 1 day
12,900 psi (89.0 MPa)	post cured 212 °F (100 °C) for 1 day

FLEXURAL PROPERTIES

When tested in accordance with ASTM D790, the flexural strength of samples cured under the conditions stated below will typically be:

Flexural Strength

8,620 psi (59.4 MPa)	72 °F (22 °C) for 7 days
7,060 psi (48.7 MPa)	72 °F (22 °C) for 1 day
8,710 psi (60.0 MPa)	post cured 212 °F (100 °C) for 1 day

HEAT RESISTANCE

Glass Transition Temperature (T_g)
When tested to ISO 11357-2, T_g of samples cured under the conditions stated below will typically be:

145.6 °F (63.1 °C)	72 °F (22 °C) for 7 days
199.0 °F (92.7 °C)	post cured 212 °F (100 °C) for 1 day

Wet (Slurry) Service Temperature
For many typical wet (slurry) service applications, the product is suitable from -40 °F (-40 °C) to 176 °F (80 °C).

Dry Service Temperature
For many typical dry service applications, the product is suitable for operating temperatures from -40 °F (-40 °C) up to 212 °F (100 °C).

Dry Heat Resistance
The indicated degradation temperature in air based on Differential Scanning Calorimetry (DSC) operated in accordance with ISO 11357 is typically 392 °F (200 °C).

IMPACT RESISTANCE

Izod Pendulum
When tested in accordance with ASTM D256, the impact (notched) resistance of samples cured under the conditions stated below will typically be:

1.1 ft-lb/in^2 (2.4 kJ/m^2)	72 °F (22 °C) for 7 days
1.5 ft-lb/in^2 (3.2 kJ/m^2)	post cured 212 °F (100 °C) for 1 day

SHELF LIFE

Separate base and solidifier components shall have a shelf life of five (5) years from date of manufacture when stored in their original unopened containers between 41 °F (5 °C) and 86 °F (30 °C).

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WARRANTY

Belzona guarantees this product will meet the performance claims stated herein when material is stored and used as instructed in the Belzona Information for Use (IFU) leaflet.

Belzona further guarantees that all its products are carefully manufactured to ensure the highest quality possible and 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 1812 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/SUPPLIER

Belzona Polymerics Limited
Claro Road
Harrogate HG1 4DS
United Kingdom

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.