BELZONA 1812
FN10040

Product Specification Sheet

1. PRODUCT NAME
Belzona® 1812
(Ceramic Carbide FP)
Coating for repairing and protecting surfaces against abrasive attack.

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 system consisting of a base and solidifier. The product is based on high molecular weight polymers and oligomers incorporating abrasion resistant ceramic aggregates. This material may be applied from 1/8 inch (3 mm) to unlimited thickness onto horizontal or vertical surfaces. The system protects the substrate from abrasive attack and is ideally suited for application to:

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

4. TECHNICAL DATA
Base Component

Appearance	Granular thixotropic paste
Color	Grey
Density	2.2 - 2.4 g/cm³

Solidifier Component

Appearance	Granular thixotropic paste
Color	Red
Density	2.0 - 2.1 g/cm³

Mixed Components

Mixing Ratio by Weight (Base : Solidifier)	4.5 : 1
Mixing Ratio by Volume (Base : Solidifier)	4 : 1
Mixed Density	2.27 g/cm³
Useable Life	
at 70°F (22°C)	20-25 mins
at 50°F (10°C)	45-60 mins
Tack Free Time	
at 71°F (22°C)	4½ hours
at 50°F (10°C)	8 hours
Slump Resistance	nil at 0.5 inch (12.7 mm)

• ***Shelf Life:***
Separate base and solidifier components shall 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:***
Each 1 kg applied at 1/8 inch (3 mm) thickness will cover approximately 1.60 sq.ft. (0.149 sq.m.).

• ***Volume Capacity:***
The volume capacity of mixed product is 26.85 cu.ins. (440 cc) per kg.

• ***Cure Time:***
Will be reduced for thicker sections and extended for thinner applications. At a thickness of approximately ¼ in. (6 mm), allow 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° (20°C).

• ***Abrasion Resistance:***
Taber
The Taber abrasion resistance with 1 kg load is typically:
H10 Wheels (Wet) 51 mm³ loss per 1000 cycles

Impact Abrasion
Test consists of firing 2 kg of G34 chilled iron grit at 75 psi and 90° angle:
Belzona® 1812 volume loss 8 mm³

• ***Adhesion:***
Tensile Shear
When tested in accordance with ASTM D1002, typical values will be 1950 psi (13.4 MPa).

• ***Chemical Resistance:***
While specifically designed for dry heat abrasion resistance, **Belzona® 1812** exhibits excellent chemical resistance to most commonly found chemical substances including inorganic acids and bases.

• ***Compressive Yield Strength:***
When tested in accordance with ASTM D695, typical values obtained will be

7 day cure	14600 psi (100.6 MPa)
24 hour cure	10850 psi (74.9 MPa)
24 hour 100°C post cure	17000 psi (117.2 MPa)

CURE TIMES

TEMPERATURE	41°F (5°C)	50°F (10°C)	59°F (15°C)	68°F (20°C)	77°F (25°C)	86°F (30°C)
Movement or use involving no loading	18 hrs	8 hrs	6 hrs	4 hrs	3 hrs	2 hrs
Machining and/or light loading	24 hrs	12 hrs	9 hrs	6 hrs	4 hrs	3 hrs
Full mechanical or thermal loading	7 days	5 days	4 days	3 days	2 days	1½ days
Contact with chemicals	14 days	10 days	7 days	5 days	3 days	2 days

• ***Flexural Strength:***
When tested to ASTM D790, typical values obtained will be :

7 day ambient cure	7000 psi (48.2 MPa)
24 hour 100°C post cure	9250 psi (63.8 MPa)

• ***Heat Distortion Temperature:***
Tested to ASTM D648 (264 psi fiber stress), typical values obtained will be:

Ambient cure at 20°C:	122°F (50°C)
Post cured at 100°C:	208°F (98°C)

• ***Heat Resistance:***
For many typical applications of dry abrasion, the product is suitable up to 300°F (150°C).

• ***Izod Impact Resistance:***
Tested to ASTM D256 using notched test pieces is typically :

7 day ambient cure :	1.85 kJ/m²
24 hour 100°C post cure	3.04 kJ/m²

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® 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.

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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Repair • Protect • Improve

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