

World leaders in the conservation of man-made resources and the environment

# 1. PRODUCT NAME

### Belzona® 1811 (Ceramic Carbide)

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 4AY, 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 1/4 inch (6 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	Black				
Density	2.2 - 2.6 g/cm <sup>3</sup>				

### Solidifier Component

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Appearance	Thixotropic gel				
Color	Red				
Density	1.06 - 1.0 g/cm <sup>3</sup>				

Mixed Components Mixing Ratio by Weight (Base : Solidifier) 8.5:1 Mixing Ratio by Volume (Base : Solidifier) Mixed Density  $4 \cdot 1$ 2.13 g/cm<sup>3</sup> Useable Life at 70°F (22°C) at 41°F (5°C) 65 mins 180 mins Tack Free Time at 71°F (22°C) at 41°F (5°C) 4.5 hours 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  $32^{\circ}F(0^{\circ}C)$  and  $86^{\circ}F(30^{\circ}C)$ .

### • Working Life:

Will vary according to temperature. At 77°F (25°C) the usable life of mixed material is 60 minutes.

### • Coverage Rate:

Each 1 kg applied at 1/4 inch (6 mm) thickness will cover approximately 0.84 sq.ft. (0.078 sq.m.).

## • Volume Capacity:

The volume capacity of mixed product is 28.6 cu.ins. (470 cc) per kg.

### • Cure Time:

Will be reduced for thicker sections and extended for thinner applications. At a thickness of approximately 1/4 in. (6 mm), allow to solidify for the times shown in the chart below before subjecting it to the conditions indicated.

# PRODUCT SPECIFICATION SHEET BELZONA® 1811

### 5. PHYSICAL / MECHANICAL PROPERTIES

Determined after 7 days cure at 77°F (25°C).

# • Abrasion Resistance:

TaberThe Taber abrasion resistance with 1 kgload is typically:H10 Wheels (Wet) 73 mm³CS17 Wheels (Dry)21 mm³loss per 1000 cycles

# Adhesion:

**Tensile Shear** When tested in accordance with ASTM D1002, typical values will be 3,000 psi (211 kgs/cm<sup>2</sup>).

## • Chemical Resistance:

While specifically designed for dry heat abrasion resistance, 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 10,000 psi (703 kgs/cm<sup>2</sup>).

### • Flexural Strength:

When tested to ASTM D790, typical values obtained will be 5,800 psi (408 kgs/cm<sup>2</sup>).

# • Heat Distortion

### Temperature:

Tested to ASTM D648 (264 psi fiber stress), typical values obtained will be 118°F (48°C).

### • Heat Resistance:

For many typical applications of dry abrasion, the product is suitable up to  $300^{\circ}$ F (150°C).

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 Machining and/or light loading	24 hrs 36 hrs	16 hrs 24 hrs	12 hrs 18 hrs	8 hrs 12 hrs	6 hrs 8 hrs	3 hrs 4 hrs			
Contact with chemicals	7 days 14 days	5 days 10 days	4 days 7 days	3 days 5 days	2 days 3 days	1½ days 2 days			

### 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® 1811** 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.

Belzona Polymerics Ltd., Claro Road, Harrogate, HG1 4AY, England. Tel: +44 (0) 1423 567641 Fax:+44 (0) 1423 505967 E-Mail: belzona@belzona.co.uk

**Belzona Inc.,** 2000 N.W. 88 Court, Miami, Florida 33172, U.S.A.

U.S.A. Tel: +1 (305) 594 4994 Fax:+1 (305) 599 1140 E-Mail: belzona@belzona.com



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**Belzona® 1811 - Product Specification Sheet (2)** 

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