IFU INSTRUCTIONS FOR USE

BELZONA 1812

FN 10225 (CERAMIC CARBIDE FP)

1 SURFACE PREPARATION

1.1 METALLIC SURFACES

a) Brush away loose contamination and remove dirt, oil, and grease. Degrease with **Belzona 9111 (**Cleaner/Degreaser) or any other effective cleaner which does not leave a residue e.g., methyl ethyl ketone (MEK).

b) Select an abrasive to give the necessary standard of cleanliness and a minimum depth of profile of 3 mil (75 µm).

c) Blast-clean the metal surface to achieve any of the following standard of cleanliness:
- ISO 8501-1 Sa 2½ (very thorough blast cleaning)
- SSPC SP 10/NACE No. 2 (Near-White Metal Blast Cleaning)

d) For any other desired surface preparation, contact Belzona.

e) Maintain the condition of the blasted surface until commencement of the application, typically within four hours of completion of the surface preparation. If not, re-blast the surface.

SALT CONTAMINATED SURFACES

The soluble salt contamination of the prepared substrate, immediately prior to application, should be less than 20 mg/m² (2 µg/cm²). Metal surfaces that have been immersed for any periods in salt solutions e.g., sea water, should be blasted to the required standard, left for 24 hours to allow the ingrained salts to sweat to the surface, then washed prior to a further brush blast to remove these. This process may need to be repeated several times to ensure complete removal of the salts. Salt removal aids are commercially available that will assist and speed salt removal. Contact Belzona for best recommendation.

1.2 WHERE BELZONA 1812 SHOULD NOT ADHERE

a) Brush on a thin layer of **Belzona 9411** (Release Agent).
b) Allow the release agent to dry for 15 – 20 minutes before proceeding to Section 2 below.

2 APPLICATION PROCEDURE

2.1 MIXING

Transfer the contents of the base and solidifier containers of **Belzona 1812** onto a Belzona working surface or equivalent. Mix both components thoroughly for at least 2 minutes to achieve a uniform material free of any streakiness.

For mixing small quantities of **Belzona 1812** use:

Mixing Ratio	By Volume	By Weight
Base: Solidifier	4.0: 1	4.5: 1

Ensure all material is used within the times shown in Section 2.3 Working Life.

Under no circumstances should complete units be mixed and left to stand, as the large exotherm produced will greatly reduce the usable life of the mixed material.

2.2 MIXING AT LOW TEMPERATURES

To ease mixing when the material temperature is below 41 °F (5 °C), warm the base and solidifier containers until the contents attain a temperature between 68 – 77 °F (20 – 25 °C).

Note: Any containers stored for prolonged or inadvertent times at temperatures below 41 °F (5 °C) should be warmed to 104 °F (40 °C) before any mixing is attempted.

2.3 WORKING LIFE

From the commencement of mixing, **Belzona 1812** must be used within the times shown below.

Temperature	50 °F (10 °C)	59 °F (15 °C)	68 °F (20 °C)	77 °F (25 °C)	86 °F (30 °C)
Use material within	60 min	45 min	35 min	20 min	15 min

FOR BEST RESULTS
Do not apply when:
I. The temperature is below 41 °F (5 °C) or the relative humidity is above 90%.
II. Rain, snow, fog, or mist are present.
III. There is moisture on the metal surface or is likely to be deposited by subsequent condensation.
IV. The working environment is likely to be contaminated by oil/grease from adjacent equipment or smoke from kerosene heaters or tobacco smoking.

2.4 APPLICATION

a) Apply **Belzona 1812** directly onto the prepared surface with a plastic applicator or spatula. When applied at 0.12 in. (3 mm) thickness, each unit of 20 kg should cover approximately 34 ft^2 (3.2 m^2).
b) Press **Belzona 1812** down firmly to remove any entrapped air and to ensure maximum contact with the substrate.
c) Contour **Belzona 1812** to the correct profile with a Belzona plastic applicator.

2.5 OVERCOAT TIMES

Belzona 1812 can be overcoated with an additional layer as soon as possible after the first layer and certainly while the first layer is still soft. The maximum overcoat time is 3 hours at 68 °F (20 °C). If these times are exceeded, the surface of **Belzona 1812** must be brush blasted to achieve a frosted appearance, free of gloss, with a minimum surface profile of 1.5 mil (40 µm).

3 INSPECTION AND REPAIRS

3.1 INSPECTION

Immediately after application of **Belzona 1812**, visually inspect for misses.

3.2 REPAIRS

Within the overcoating window, any misses or mechanical damage can be repaired by application of a further layer of **Belzona 1812**. Outside the overcoating window, the surface of **Belzona 1812** must be abrasive blasted or abraded to produce a frosted appearance, free of all gloss. A profile of 1.5 mil (40 µm) should be aimed for.

4 CURING AND CLEANING

4.1 CURING

Belzona 1812 should be allowed to cure as follows.

Ambient temperature	For movement or use with no loading	For machining or light loading	For full mechanical or thermal loading	For contact with chemicals
41 °F (5 °C)	16 hours	24 hours	7 days	14 days
50 °F (10 °C)	8 hours	12 hours	5 days	10 days
59 °F (15 °C)	6 hours	9 hours	4 days	7 days
68 °F (20 °C)	4 hours	6 hours	3 days	5 days
77 °F (25 °C)	3 hours	4 hours	2 days	3 days
86 °F (30 °C)	2 hours	3 hours	1 ½ days	2 days

These times are for a thickness of approximately 0.24 in. (6 mm). They will be reduced for thicker sections and extended for thinner sections.

4.2 POST- CURING

The mechanical properties, heat resistance, and chemical resistance of **Belzona 1812** may be improved by post-curing.

a) Once **Belzona 1812** has reached a curing degree “for movement or use with no loading”, gradually raise the temperature between 122 °F (50 °C) and 212 °F (100 °C) for a minimum of 1 – 2 hours.

b) Forced-air heaters, heat lamps, and heat mantles can be used for post-curing purposes.

c) Allow **Belzona 1812** to cool after completion of the post-curing process.

4.3 MACHINING

Belzona 1812 cannot satisfactorily be ground or machined after cure. Every attempt, therefore, should be made to obtain the required depth of application to avoid unnecessary machining.

4.4 CLEANING

Mixing tools should be cleaned immediately after use with **Belzona 9111** or any other effective solvent e.g., methyl ethyl ketone (MEK). Brushes and any other application tools should be cleaned using a suitable solvent such as **Belzona 9121**, MEK, acetone, or cellulose thinners.

HEALTH & SAFETY INFORMATION

Please read and make sure you understand the relevant Safety Data Sheets.

Belzona products are manufactured under an ISO 9001 registered Quality Management System.

BELZONA® Repair • Protect • Improve