Belzona 1321

FN10026 **(CERAMIC S-METAL)**

BELZONA®
Repair • Protect • Improve

INSTRUCTIONS FOR USE

1. TO ENSURE AN EFFECTIVE MOLECULAR WELD

METALLIC SURFACES - APPLY ONLY TO BLAST CLEANED SURFACES

a) Brush away loose contamination and degrease with a rag soaked in **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 mils (75 microns).

Use only an angular abrasive.

c) Blast clean the metal surface to achieve the following standard of cleanliness:

ISO 8501-1 Sa 2½ very thorough blast cleaning
American Standard near white finish SSPC SP 10
Swedish Standard Sa 2½ SIS 05 5900

d) After blasting, metal surfaces should be coated before any oxidation of the surface takes place.

SALT CONTAMINATED SURFACES

Metal surfaces that have been immersed for any periods in salt solutions e.g. sea water, should be blasted to the required standard, left 24 hours to allow any ingrained salts to sweat to the surface and then washed prior to a further brush blast to remove these. This process may need to be repeated to ensure complete removal of salts. The soluble salt contamination of the prepared substrate, immediately prior to application, should be less than 30mgs/m².

PIT FILLING

All welds should be prepared to NACE SP0178 Grade C or better. Deep pitting and rough welds should be smoothed out with **Belzona® 1111**, **Belzona® 1311** or **Belzona® 1151** mixed, applied and overcoated in accordance with the relevant IFU.

2. COMBINING THE REACTIVE COMPONENTS

Transfer the entire contents of the Solidifier can into the Base module. Mix thoroughly together to achieve a uniform material free of any streakiness.

1. MIXING AT LOW TEMPERATURES

To ease mixing when the material temperature is below 41°F (5°C), warm the Base and Solidifier modules until the contents attain a temperature of 68-77°F (20-25°C).

2. WORKING LIFE

From the commencement of mixing, **Belzona® 1321** must be used within the times shown below.

Temperature	41°F (5°C)	59°F (15°C)	77°F (25°C)	86°F (30°C)
Use all material within	2 hours	1 hour	30 min.	20 min.

3. MIXING SMALL QUANTITIES

For mixing small quantities of **Belzona® 1321** use:
4 parts Base to 1 part Solidifier by volume
11 parts Base to 1 part Solidifier by weight

4. VOLUME CAPACITY OF MIXED BELZONA® 1321

25.7 cu.in. (422 cm³) per kg.

3. APPLYING BELZONA® 1321

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 is 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.

COVERAGE RATES

Recommended number of coats	2
Target thickness 1st coat	15 mils (375 microns)
Target thickness 2nd coat	15 mils (375 microns)
Minimum total DFT	24 mils (600 microns)
Maximum total DFT	Only limited by sag resistance
Theoretical coverage rate 1st coat	12.3 sq.ft. (1.14 m²)/kg
Theoretical coverage rate 2nd coat	12.3 sq.ft. (1.14 m²)/kg
Theoretical coverage rate to achieve minimum recommended system thickness	7.6 sq.ft. (0.71 m²)/kg

PRACTICAL COVERAGE RATES

Appropriate loss factors must be applied to the above coverage rates. In practice, many factors influence the actual coverage rate achieved. On rough surfaces such as pitted steel the practical coverage rate will be reduced. Application at low temperatures will also reduce practical coverage rates further.

a) FIRST COAT

Apply the **Belzona® 1321** directly on to the prepared surface with a stiff bristled brush or with the plastic applicator provided at the recommended coverage rate.

b) **SECOND COAT**
As soon as possible after application of the first coat, apply a further coat of **Belzona® 1321** as in (a) above. This time will be 1-2 hours at 68°F (20°C). The first coat must not be left longer than 6 hours before overcoating, irrespective of temperature. Should this occur, then the surface should be brush blasted or abraded before commencing application.

INSPECTION
NOTE
Belzona® 1321 contains ferro-magnetic fillers, therefore, direct measurement of DFT with electromagnetic gauges cannot be carried out. As product is 100% solids, WFT gauge readings taken during application are same as DFT.

a) Immediately after application of each unit, visually inspect for pinholes and misses. Where detected, these should be immediately brushed out.
b) Once the application is complete and the coating is dimensionally stable (refer to “Movement or use involving no loading or immersion” column in section 4), carry out a thorough visual inspection to confirm freedom from pinholes and misses, and to identify any possible mechanical damage.
c) Where wet sponge testing is being used as an aid to confirm continuity of the coating, care should be taken to ensure that the surface is thoroughly wetted out. The addition of a wetting agent such as detergent to the water used on the sponge will also assist. **Under no circumstances should high voltage spark testing be used.**

COLOUR
Belzona® 1321 is available in blue and grey to facilitate application and to prevent misses. These colours are for identification only and there will be some variation between batches. In service the colour of the applied product may change.

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

4. COMPLETION OF THE MOLECULAR REACTION

Allow **Belzona® 1321** to solidify as below subjecting it to the conditions indicated.

Temper-ature	Movement or use involving no loading	Machining and/or light loading	Full mechanical/ thermal loading or water immersion	Chemical contact
41°F/ 5°C	12 hours	18 hours	7 days	10 days
50°F/10°C	8 hours	12 hours	3 days	5 days
59°F/15°C	5½ hours	9 hours	2 days	3 days
68°F/20°C	4 hours	6 hours	1½ days	2 days
77°F/25°C	3½ hours	4½ hours	24 hours	1½ days
86°F/30°C	2 hours	3 hours	18 hours	1 day

5. MACHINING

Belzona® 1321 is extremely difficult to machine down by turning, using conventional or carbide tipped tools. However, it can be machined using diamond tipped tool.

Alternatively, it can be machined by grinding, but this should be carried out as soon as possible after the solidified times shown.

6. FINAL SOLIDIFICATION OF BELZONA® 1321

When time is important and equipment usage is pressing, then by installing forced air heaters and taking steps to contain this heat around the equipment being reclaimed, final solidification time can be as little as 24 hours. Due allowance must be made for "warming up".

If there is any doubt regarding final solidification, then **BE SAFE - MAKE MORE TIME.**

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

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