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.

2. WORKING LIFE

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

<table>
<thead>
<tr>
<th>Temperature</th>
<th>41°F (5°C)</th>
<th>59°F (15°C)</th>
<th>77°F (25°C)</th>
<th>86°F (30°C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use all material within</td>
<td>2 hours</td>
<td>1 hour</td>
<td>30 min.</td>
<td>20 min.</td>
</tr>
</tbody>
</table>

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 onto the prepared surface with a stiff bristled brush or with the plastic applicator provided at the recommended coverage rate.

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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.

**COLOR**
Belzona® 1321 is available in blue and gray to facilitate application and to prevent misses. These colors are for identification only and there will be some variation between batches. In service the color 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.

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**4. COMPLETION OF THE MOLECULAR REACTION**

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

<table>
<thead>
<tr>
<th>Temperature</th>
<th>Movement or use involving no loading</th>
<th>Machining and/or light loading</th>
<th>Full mechanical/thermal loading or water immersion</th>
<th>Chemical contact</th>
</tr>
</thead>
<tbody>
<tr>
<td>41°F/5°C</td>
<td>12 hours</td>
<td>18 hours</td>
<td>7 days</td>
<td>10 days</td>
</tr>
<tr>
<td>50°F/10°C</td>
<td>8 hours</td>
<td>12 hours</td>
<td>3 days</td>
<td>5 days</td>
</tr>
<tr>
<td>59°F/15°C</td>
<td>½ hours</td>
<td>9 hours</td>
<td>2 days</td>
<td>3 days</td>
</tr>
<tr>
<td>68°F/20°C</td>
<td>4 hours</td>
<td>6 hours</td>
<td>1½ days</td>
<td>2 days</td>
</tr>
<tr>
<td>77°F/25°C</td>
<td>3½ hours</td>
<td>4½ hours</td>
<td>24 hours</td>
<td>1½ days</td>
</tr>
<tr>
<td>86°F/30°C</td>
<td>2 hours</td>
<td>3 hours</td>
<td>18 hours</td>
<td>1 day</td>
</tr>
</tbody>
</table>

**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”.

A final physical check can be made as precaution by taking a metal object and tapping the surface of the Belzona® 1321. Any partially solidified or soft spots will give a dull tone in relation to the metallic tone offered by solidified Belzona® 1321.

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

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**HEALTH & SAFETY INFORMATION**

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

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Belzona 1321 - Instructions for Use - (2)  www.belzona.com  Publication No. 16-08-19

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