

Belzona 1331

FN10027



INSTRUCTIONS FOR USE

1. TO ENSURE AN EFFECTIVE MOLECULAR WELD

METALLIC SURFACES - APPLY ONLY TO BLAST CLEANED SURFACES

- 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).
- 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.
- 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.
- 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

- Stir the contents of the Base & Solidifier container thoroughly to reincorporate any settlement.
During storage, the Solidifier component may exhibit a soft waxy layer on the surface. If found the unit should be carefully warmed to 95°F (35°C) after which the material can be re-incorporated by thorough stirring.
- Transfer the entire contents of the Solidifier can into the Base container. **Not applicable when using plural spray.**
- Mix thoroughly together to achieve a uniform material free of any streakiness.

NOTES:

1. MIXING

For mixing large units, use a mechanical mixer, ensuring that material on the side and at the corners of the container is fully incorporated. Avoid incorporation of excessive amounts of air into the mixed material.

2. WORKING LIFE

From the commencement of mixing, **Belzona® 1331** must be used within the times shown below.

Temperature	50°F (10°C)	59°F (15°C)	77°F (25°C)	86°F (30°C)	104°F (40°C)
Use all material within	70 min.	60 min.	40 min.	30 min.	18 min.

3. MIXING RATIO

2 parts Base to 1 part Solidifier by volume
2.2 parts Base to 1 part Solidifier by weight.

3. APPLYING BELZONA® 1331

FOR BEST RESULTS

Do not apply when:

- The temperature is below 50°F (10°C) or the relative humidity is above 90%.
- Rain, snow, fog or mist is present.
- There is moisture on the metal surface or is likely to be deposited by subsequent condensation.
- The working environment is likely to be contaminated by oil/grease from adjacent equipment or smoke from kerosene heaters or tobacco smoking.

3.1 SPRAY EQUIPMENT REQUIRED

Belzona® 1331 must be sprayed using heated airless equipment. Either a single airless pump or plural equipment capable of metering accurately and mixing the two components can be used. See "Instructions for spraying Belzona solvent free coatings".

Mix ratio	2:1 by volume
Tip Temperature	104-122°F (40-50°C)
Tip pressure (minimum)	2500 psi (172 bar)
Tip size 21-25 thou	(0.53-0.63mm)

DO NOT THIN

Cleaning solvent **Belzona® 9121, MEK or Acetone**

3.2 HAND APPLICATION

Belzona® 1331 must be applied by stiff bristled brush as a two coat system following the recommended coverage rates. The large units may require splitting into small mixes to ensure product can be applied within its working life.

3.3 COVERAGE RATES

Recommended number of coats	2	1
Target thickness 1 st coat	15 mils (375 microns)	30 mils (750 microns)
Target thickness 2 nd coat	15 mils (375 microns)	N/A
Minimum total DFT	20 mils (500 microns)	20 mils (500 microns)
Maximum DFT per coat	Brush application 20 mils (500 microns) Spray application Only limited by sag resistance	
Theoretical coverage rate 1 st coat	28.7sq.ft. (2.67m ²)/litre 24.7sq.ft. (2.3m ²)/kg	14.35sq.ft. (1.34m ²)/litre 12.35sq.ft. (1.15m ²)/kg
Theoretical coverage rate 2 nd coat	28.7sq.ft. (2.67m ²)/litre 24.7sq.ft. (2.3m ²)/kg	N/A
Theoretical coverage rate to achieve minimum recommended system thickness	21.5sq.ft. (2m ²)/litre 18.8sq.ft. (1.75m ²)/kg	21.5sq.ft. (2m ²)/litre 18.8sq.ft. (1.75m ²)/kg

3.4 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.

3.5 INSPECTION

- Immediately after application of each unit, visually inspect for pinholes and misses. Where detected, these should be immediately brushed out.
- 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.
- Spark testing in accordance with NACE SP0188 can be carried out to confirm coating continuity. A voltage of 3kV is recommended to confirm that a minimum coating thickness of 20 mil (500 microns) has been achieved.

3.6 REPAIRS

Within the overcoating window any misses, pinholes or mechanical damage can be repaired by application of **Belzona® 1331** direct to the surface using a stiff bristled brush. Outside of the overcoating window, the surface of the **Belzona® 1331** must be abrasive blasted or abraded to produce a frosted appearance, free of all gloss, before coating. A profile of 1.5 mils (40 microns) should be aimed for.

3.7 OVERCOAT TIME

The **Belzona® 1331** can be overcoated as soon as it is firm enough to do so. At 68°F (20°C) it will be possible to walk on the coating after 6-8 hours, but if access can be gained without walking on the first coat, overcoating can take place after as little as 3-4 hours. The

maximum overcoat time is dependent on both temperature and humidity as set out below. After this time the surface must be brush blasted to achieve a frosted appearance free of gloss with a minimum surface profile of 40 microns.

Temperature	<50% Relative Humidity	>50% Relative Humidity
Up to 68°F (20°C)	24 hours	24 hours
Up to 86°F (30°C)	24 hours	18 hours
Up to 104°F (40°C)	12 hours	8 hours

3.8 COLOR

Belzona® 1331 is available in different colors 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. White is the recommended first coat, and gray as the top coat.

3.9 CLEANING

Mixing tools should be cleaned immediately after use with **Belzona® 9111** or any other effective solvent e.g. Methyl ethyl ketone (MEK). Brushes, injection guns, spray equipment and any other 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® 1331** to solidify as below subjecting it to the conditions indicated.

Temperature	Movement or use involving no loading or immersion	Light loading	Full mechanical/thermal loading or water immersion	Chemical contact
50°F/10°C	24 hours	48 hours	14 days	21 days
59°F/15°C	12 hours	24 hours	7 days	10 days
68°F/20°C	8 hours	16 hours	3 days	7 days
77°F/25°C	7 hours	14 hours	2½ days	6 days
86°F/30°C	6 hours	12 hours	2 days	5 days

5. FINAL SOLIDIFICATION OF BELZONA® 1331

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 reduced. Application of heat should not be carried out until the **Belzona® 1331** has initially gelled and the material temperature should not exceed 122°F (50°C).

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.

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