



BELZONA® 4811

INSTRUCTIONS FOR USE

1. TO ENSURE AN EFFECTIVE MOLECULAR WELD

1.1 METAL SURFACES

Metal surfaces should be blast cleaned as follows:

- 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 minimum 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.

NOTES:

Small Areas

These may be satisfactorily prepared by thorough grinding taking care to

- Remove all loose rust and scale and
- Leave a coarse profile (not a polished surface).

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.

1.2 CONCRETE

Wash old concrete down with detergent solution to remove oil and grease. Use clean water to wash away detergent and other contamination.

Mechanically scarify or grit blast the surface to remove existing coatings, laitence and any loose concrete, leaving a coarse profile with the aggregate exposed.

Vacuum up all loose dust produced by the surface preparation immediately prior to application of the **Belzona® 4811** system.

Treat any surfaces to which **Belzona® 4811** should not adhere with **Belzona® 9411** (Release Agent) and leave for 15 - 20 minutes to dry before proceeding. Seal porous surfaces to be treated with **Belzona® 9411** first, with a suitable lacquer, e.g. shellac or cellulose enamel.

2. CONDITIONING

Add the entire contents of **Belzona® 4911** (Magma TX Conditioner) Solidifier to **Belzona® 4911** Base and stir thoroughly until completely mixed. Immediately apply the conditioner onto the surface to be treated with **Belzona® 4811**, with a stiff bristled brush or rubber squeegee, at a coverage rate equating to 14 sq.ft. (1.3 m²) per 450gm unit on metal. On rough concrete the coverage rate will be reduced to 12 sq.ft. (1.1 m²) per 450gm unit.

NOTES:

- For mixing small quantities of **Belzona® 4911** use:
2 Parts Base : 1 Part Solidifier by Volume
- Conditioning and overcoating must be completed within the times shown below:

Ambient Temperature	Usable life after mixing	Minimum overcoating time	Maximum overcoating time*
41°F/ 5°C	230 mins	Application can commence as soon as conditioning has been completed	6 hours
50°F/10°C	105 mins		6 hours
59°F/15°C	55 mins		6 hours
68°F/20°C	45 mins		6 hours
77°F/25°C	32 mins		6 hours

* If the maximum overcoating time for the **Belzona® 4911** is exceeded, then the cured surface should be abraded and fresh **Belzona® 4911** applied.

- For best results, always comply with the application constraints detailed in Section 4.

3. COMBINING THE REACTIVE COMPONENTS

Mixing may be carried out in the large bucket supplied but due to the bulk and stiffness of the mixed materials, it is essential that a mechanical mixer is used to ensure complete mixing. Add approximately half the Base component and all of the Solidifier component to the mixing container and start the mixer.

Once initial incorporation has been achieved, slowly add the remainder of the Base material and mix together thoroughly for approximately 5 minutes, or until an even consistency is achieved. During this time periodically stop the mixer and withdraw the mixing paddle and scrape clean before continuing mixing.

NOTES:

1. WORKING LIFE

From the commencement of mixing, **Belzona® 4811** must be applied within the times shown below:

Temperature	Use all material within
50°F/10°C	60 mins
59°F/15°C	45 mins
68°F/20°C	35 mins
77°F/25°C	30 mins

2. VOLUME CAPACITY OF MIXED BELZONA® 4811

473 cu.ins. (7752 cm³) per 20 kg pack.

3. COVERAGE RATE

The coverage rate of **Belzona® 4811** is 14.0 sq.ft. (1.3 m²) at the recommended thickness of 0.25 inch (6 mm) per 20 kg unit.

4. APPLYING THE BELZONA® 4811 SYSTEM

FOR BEST RESULTS

Do not apply Belzona® 4811 or Belzona® 4911 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 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.

Apply the mixed **Belzona® 4811** directly on to the conditioned surface, initially spreading to a general level using normal screeding techniques and then using a metal straight edge to achieve a uniform thickness prior to smoothing off using a steel float. Avoid overtrawelling as this may detract from the surface finish achieved.

NOTES:

1. VERTICAL SURFACES

When applying **Belzona® 4811** to vertical surfaces, the normal maximum thickness obtained without sagging is 0.125 in. (3 mm).

2. APPLYING ADDITIONAL LAYERS OF BELZONA® 4811

Where this is required it should be done as soon as the first layer is firm enough to accept the second layer and within the maximum overcoating time of 6 hours.

After this time the surface of the **Belzona® 4811** must be abraded before further application.

In all cases the surface must be conditioned with **Belzona® 4911** (See section 2) before applying further **Belzona® 4811**.

3. APPLICATION LIMITS

Belzona® 4811 can be applied when the temperature is anywhere between 5°C (41°F) and 30°C (86°F), however, below 10°C the material may be too stiff for easy mixing and application, and above 25°C the material may be somewhat "fluid" and have a short usable life.

4. CLEANING

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

5. COMPLETION OF THE MOLECULAR REACTION

Allow **Belzona® 4811** to solidify for the following times before subjecting it to the conditions indicated:

Temperature	41°F (5°C)	59°F (15°C)	77°F (25°C)
Movement or use involving no loading	16 hours	6 hours	4 hours
Full mechanical or thermal loading	2 days	24 hours	16 hours
Contact with chemicals	14 days	10 days	5 days

These figures are for **Belzona® 4811** at the recommended film thickness of 0.25 in. (6 mm.). They will be reduced for thicker sections and extended for thinner applications.

BELZONA® 4811 Must not be exposed to moisture until full cure has been achieved otherwise surface whitening will occur.

HEALTH & SAFETY INFORMATION

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

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