



# BELZONA® 4301

(MAGMA CR1 HI-BUILD)

## INSTRUCTIONS FOR USE

### 1. TO ENSURE AN EFFECTIVE MOLECULAR WELD

APPLY ONLY TO CLEAN, FIRM, DRY AND WELL ROUGHENED 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).

#### (i) Metal Surfaces

- 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 Sa2½ SIS 05 5900
- After blasting, metal surfaces should be coated before any oxidation of the surface takes place. Proceed to Section 2 "Combining the Reactive Components".

#### (ii) Glass Surfaces

Frost glass surfaces by either grit blasting or abrading. Brush over the surface again and degrease with **Belzona® 9111** or a suitable alternative. Now proceed to Section 2 "Combining the Reactive Components".

#### (iii) Concrete Surfaces

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 any loose dust and proceed to Section 1 "Conditioning".

#### Conditioning

Add the entire contents of **Belzona® 4911** (Magma TX Conditioner) Solidifier to **Belzona® 4911** Base and stir thoroughly until completely mixed. Immediately brush the Conditioner onto the surface to be treated with **Belzona® 4301** not exceeding an area of 12 sq.ft. (1.1 m<sup>2</sup>) per unit. Brush the **Belzona® 4911** well into the surface using a stiff bristled brush.

Conditioning and overcoating must be completed within the following times:

| Temperature | Usable life after mixing | Minimum overcoating time                                            | Maximum overcoating time* |
|-------------|--------------------------|---------------------------------------------------------------------|---------------------------|
| 59°F/15°C   | 55 minutes               | Application can commence as soon as conditioning has been completed | 6 hours                   |
| 68°F/20°C   | 45 minutes               |                                                                     | 6 hours                   |
| 77°F/25°C   | 32 minutes               |                                                                     | 6 hours                   |
| 86°F/30°C   | 20 minutes               |                                                                     | 6 hours                   |

\* If the maximum overcoating time for the **Belzona® 4911** is exceeded, then the cured surface should be abraded prior to the **Belzona® 4301** being applied.

### WHERE BELZONA® 4301 SHOULD NOT ADHERE

Brush on a thin layer of **Belzona® 9411** (Release Agent) and allow to dry for 15 - 20 minutes before proceeding.

### 2. COMBINING THE REACTIVE COMPONENTS

Transfer the entire contents of the Base and Solidifier modules on to the **Belzona®** Working Surface.

Mix thoroughly together to achieve a uniform material free of any streakiness.

#### NOTES:

##### 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® 4301** must be used within the times shown below.

| Temperature             | 59°F (15°C) | 77°F (25°C) | 86°F (30°C) |
|-------------------------|-------------|-------------|-------------|
| Use all material within | 35 min      | 25 min      | 15 min      |

##### 3. MIXING SMALL QUANTITIES

For mixing small quantities of **Belzona® 4301** use:

- 3 parts Base to 1 part Solidifier by volume
- 3.1 parts Base to 1 part Solidifier by weight

##### 4. VOLUME CAPACITY OF MIXED BELZONA® 4301

44 cu.in. (720 cm<sup>3</sup>) per kg.

### 3. APPLYING BELZONA® 4301

#### FOR BEST RESULTS

##### Do not apply when:

- (i) The temperature is below 59°F (15°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.

- a) **Belzona® 4301** can be applied when the temperature of the material, substrate and environment is anywhere between 59°F (15°C) and 86°F (30°C). Below 59°F (15°C), the material will be too stiff for easy mixing and application. Above 86°F (30°C), the material may be somewhat fluid and will have a short usable life.

Reference must also be made to the cure times. Below 59°F (15°C), the rate of cure is drastically reduced and some external heat source must be used to effect full cure.

- b) Apply the **Belzona® 4301** directly on to the prepared surface with the plastic applicator provided.
- c) Press down firmly to remove entrapped air and to ensure maximum contact with the surface.
- d) Contour the **Belzona® 4301** to the correct profile with the plastic applicator.
- e) If required, overcoat with **Belzona® 4311** (Magma CR1) as soon as it is possible to do so without disturbing the **Belzona® 4301**.

If overcoating takes place within 4 hours, no further surface preparation is required. After this maximum overcoating time has elapsed, roughen the **Belzona® 4301** before applying the **Belzona® 4311**.

#### 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® 4301** to solidify as below, before subjecting it to the conditions indicated:

| Temperature | Movement | Light loading | Full chemical resistance |
|-------------|----------|---------------|--------------------------|
| 59°F/15°C   | 16 hours | 48 hours      | 14 days                  |
| 68°F/20°C   | 12 hours | 36 hours      | 7 days                   |
| 77°F/25°C   | 8 hours  | 24 hours      | 6 days                   |
| 86°F/30°C   | 6 hours  | 20 hours      | 5 days                   |

**NOTE:** Below 59°F (15°C) solidification times will be significantly extended and the resultant chemical resistance capability of the **Belzona® 4301** will be reduced.

### 5. FORCE CURE FOR OPTIMUM CHEMICAL RESISTANCE

Allow **Belzona® 4301** or the combined **Belzona® 4301/4311** system to solidify for a minimum of 12 hours at 68°F (20°C), then force cure the product at 180°F (80°C) for 4 hours to attain maximum chemical resistance properties.

### HEALTH & SAFETY INFORMATION

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

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