

# Belzona 4511

FN10206 (MAGMA-FLEX HI-BUILD)



## INSTRUCTIONS FOR USE

### 1. TO ENSURE AN EFFECTIVE MOLECULAR WELD

Any surface to which **Belzona® 4511** is to be applied must be clean, firm and dry.

Surfaces less than 48 hours old created with **Belzona® 4111** or **Belzona® 4131** do not require conditioning. After this time the surfaces must be thoroughly abraded and conditioned.

Wash old concrete down with detergent to remove oil, grease and dust. Use clean water to wash away the detergent.

Remove all paint, tar and any other coatings.

Allow new concrete to cure for a minimum of 28 days or until the moisture content is below 6% using a Protimeter. Wire brush vertical upstands to remove loose surface material.

Horizontal concrete surfaces and new concrete will show the phenomenon of surface laitance and this must be removed by mechanical scarification.

Abrade metallic surfaces to remove loose rust and flaking paint and then roughen by blasting, grinding or other suitable means to achieve a rough bright metal surface. Vacuum up any loose dust produced by surface preparation techniques.

Insert backer rod to achieve correct joint configuration.

Treat any surface to which **Belzona® 4511** 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 brush all of this conditioner onto the surface to be treated with **Belzona® 4511**, with a stiff bristled brush, not exceeding an area of 12 sq. ft. (1.1 m<sup>2</sup>) per 450 gm 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 following times:

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.

### 3. COMBINING THE REACTIVE COMPONENTS

Shake well the Solidifier before use. Use a spatula to mix partial quantities of Base and Solidifier.

Use a mechanical mixer when mixing entire units. Pre-mix the Base in its container for 1-2 minutes. With the mixer running, slowly add the Solidifier into the Base and keep mixing for 7-8 minutes. Ensure the mixer drill scrapes the bottom and sides of the container. Continue mixing for 2-3 minutes to achieve an even consistency.

#### NOTES

##### 1. WORKING LIFE

From the commencement of mixing, **Belzona® 4511** must be used within the times shown.

Temperature	50°F (10°C)	59°F (15°C)	68°F (20°C)	77°F (25°C)
Use all material within	10 hrs.	3 hrs.	1½ hrs.	75 mins.

##### 2. MIXING SMALL QUANTITIES

Whenever possible, complete units of **Belzona® 4511** should be mixed. Where small quantity mixes are required, mix  
6.4 parts Base : 1 part Solidifier by Weight  
5.1 parts Base : 1 part Solidifier by Volume

It is important that these mixing ratios are accurately adhered to.

##### 3. VOLUME CAPACITY OF MIXED BELZONA® 4511

204.8 cu.in. (3354 cm<sup>3</sup>) per 4.2 kg unit.

## 4. APPLYING THE BELZONA® 4511

### FOR BEST RESULTS

#### Do not apply when:

- (i) The temperature is below 50°F(10°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 **Belzona® 4511** into the joint avoiding air entrapment. When the joint is filled, a suitable scraper should be used to remove any excess material.

### CLEANING

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

## 5. COMPLETION OF THE MOLECULAR REACTION

Allow **Belzona® 4511** to solidify as below before subjecting it to the conditions indicated:

Temperature	Light loading	Full mechanical or thermal loading
50°F/10°C	20 hours	2 days
72°F/22°C	8 hours	1 day
86°F/30°C	4 hours	12 hours
104°F/40°C	2 hours	6 hours
122°F/50°C	1 hour	3 hours

These times are for a thickness of approximately 0.25 ins (0.6 cm); they will be reduced for thicker sections and extended for thinner sections.

## 6. OVERCOATING

Application of subsequent layers of **Belzona® 4511** can be carried out without need of any surface treatment other than removal of contamination in accordance with the below maximum overcoat times:

Temperature	Overcoat within
50°F (10°C)	72 hours
68°F (20°C)	48 hours
86°F (30°C)	48 hours

If the maximum overcoat time is exceeded or for overcoating aged or weathered **Belzona® 4511**, the surface should be cleaned and abraded before applying a thin layer of **Belzona® 2911**.

**Belzona® 2911** must be touch dry before overcoating with **Belzona® 4511**. At 50% relative humidity, the touch dry state will be achieved after the times given below:

Temperature	Belzona 2911
50°F (10°C)	90 min
68°F (20°C)	45 min
86°F (30°C)	25 min
104°F (40°C)	20 min

### NOTE:

If bonding to concrete or metallic substrates, **Belzona® 4911** should be used. If bonding over **Belzona® 4511** or rubbery substrates, **Belzona® 2911** should be used.

## HEALTH & SAFETY INFORMATION

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

The technical data contained herein is based on the results of long-term tests carried out in our laboratories and to the best of our knowledge is true and accurate on the date of publication. It is however subject to change without prior notice and the user should contact Belzona to verify the technical data is correct before specifying or ordering. No guarantee of accuracy is given or implied. We assume no responsibility for rates of coverage, performance or injury resulting from use. Liability, if any, is limited to the replacement of products. No other warranty or guarantee of any kind is made by Belzona, express or implied, whether statutory, by operation of law or otherwise, including merchantability or fitness for a particular purpose.

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