Belzona 4181

(AHR MAGMA-QUARTZ)

BELZONA®
Repair • Protect • Improve

INSTRUCTIONS FOR USE

1. TO ENSURE AN EFFECTIVE MOLECULAR WELD

Any surface to which **Belzona® 4181** is to be applied must be clean, firm and dry. 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 laitence 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.

Treat any surface to which **Belzona® 4181** 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

For application in chemical environments use **Belzona® 4911**. For applications involving elevated temperatures use **Belzona® 4981**.

BELZONA® 4911
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® 4181,** with a stiff bristled brush, not exceeding an area of 12 sq.ft. (1.1 m²).

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

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

BELZONA® 4981
Add the entire contents of **Belzona® 4981** Solidifier to **Belzona® 4981** Base and stir thoroughly until completely mixed. Immediately brush all of this conditioner onto the surface to be treated with **Belzona® 4181,** with a stiff bristled brush, not exceeding an area of 11.3 sq.ft. (1.05 m²).

NOTES:
1. For mixing small quantities of **Belzona® 4981** use: 3 Parts Base : 1 Part Solidifier by Volume
2. Conditioning and overcoating must be completed within the following times:

Ambient Temperature	Usable life after mixing	Minimum overcoating time	Maximum overcoating time*
59°F/15°C	55 mins	Application can commence as soon as conditioning has been completed	4 hours
68°F/20°C	45 mins		4 hours
77°F/25°C	32 mins		4 hours

* If the maximum overcoating time for the **Belzona® 4911 or Belzona® 4981** is exceeded, then the cured surface should be abraded and fresh Conditioner applied.

3. COMBINING THE REACTIVE COMPONENTS

1. Add the entire contents of **Belzona® 4181** Solidifier to **Belzona® 4181** Base and stir thoroughly until completely mixed.

2. Empty the entire contents into the large mixing bucket.

3. Slowly add the **Belzona® 4181** Aggregate into the resin mix. Mix for 5 minutes and then proceed immediately to Section 4 "Application"

NOTES:
1. INADVERTENT STORAGE
Inadvertent storage of **Belzona® 4181** Solidifier below 59°F (15°C) may result in partial solidification. If this occurs, the material can be restored to its normal form by resealing the container and warming to between 104°F (40°C) and 122°F (50°C).

2. WORKING LIFE
From the commencement of mixing, **Belzona® 4181** must be used within the times shown below.

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

3. MIXING OF SMALL QUANTITIES
For mixing small quantities of **Belzona® 4181,** use:-
100 parts of Base to 30 parts of Solidifier to 1000 parts Aggregate by weight.

4. VOLUME CAPACITY OF MIXED BELZONA® 4181
6300 cm³ (384 cu.ins.) per 15 kg pack.

5. COVERAGE RATE
On a flat smooth surface, the coverage rate of **Belzona® 4181** is 11.3 sq.ft. (1.05 m²) per 15 kg pack at a thickness of 0.25 ins. (0.6 cm)

4. APPLYING BELZONA® 4181

Apply the mixed **Belzona® 4181** directly onto 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.

When a very smooth finish to the **Belzona® 4181** is required, this can be achieved by use of a steel float, cleaned and wetted with **Belzona® 9121**.

Complete the operation within 30 minutes (see .Working Life.) as after this time the **Belzona® 4181** will begin to solidify. When working with large volumes of **Belzona® 4181,** the usable life can be extended by spreading mixed material out on a board to avoid heat build-up during use.

NOTES:
1. APPLICATION TO VERTICAL SURFACES
When applying **Belzona® 4181** to vertical surfaces, the normal maximum thickness obtainable without sagging is 0.25 ins. (6 mm.). However, on small areas thicknesses of 0.5 ins. (12 mm.) can be achieved without sagging and, if necessary, a piece of polyethylene can be pressed onto the surface of the **Belzona® 4181** to prevent sagging. The polyethylene can be removed when the **Belzona® 4181** has cured.

2. APPLICATION LIMITS
Belzona® 4181 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.

3. DAMP SURFACES
Belzona® 4181 can be applied to damp surfaces but its adhesion will be approximately 75% of that obtained on a dry surface.

4. APPLYING ADDITIONAL LAYERS OF BELZONA® 4181
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® 4181** must be abraded before further application.

In all cases the surface must be conditioned with **Belzona® 4911** (see Section 2) before applying further **Belzona® 4181.**

5. CLEANING
Mixing tools should be cleaned immediately after use with **Belzona® 9111** or any other effective solvent e.g. 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.

5. COMPLETION OF THE MOLECULAR REACTION

Allow **Belzona® 4181** to solidify for the following times before subjecting it to the conditions indicated:

Temperature	59°F (15°C)	77°F (25°C)
To resist pedestrian traffic	12 hours	8 hours
Machine hard	16 hours	12 hours
For full mechanical hardness	48 hours	24 hours
For full chemical resistance	10 days	5 days

These figures are for **Belzona® 4181** at a film thickness of 0.25 ins. (6 mm). They will be reduced for higher film thicknesses.

HEALTH & SAFETY INFORMATION
Please read and make sure you understand the relevant Material Safety Data Sheets.

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