Belzona 4231

(E MAGMA-QUARTZ)

BELZONA®
Repair • Protect • Improve

INSTRUCTIONS FOR USE

1. TO ENSURE AN EFFECTIVE MOLECULAR WELD

Any surface to which **Belzona® 4231** 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® 4231** 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

Belzona® 4231 is supplied with three white plastic measuring pots. These pots should be used to accurately measure out the required quantities of material.

Using the two smallest measuring pots, measure out 77 ml of **Belzona® 4251** Base and 49 ml of **Belzona® 4251** Solidifier by filling each measuring pot full to the brim. This equates to a mixing ratio of 3:2 parts by volume. Decant these liquids into a suitable mixing container and stir thoroughly until completely mixed.

Each measured mix of conditioner will typically be sufficient to cover 4.69 sq.ft. (0.44 m²). If more conditioner is required then multiple measures of **Belzona® 4251** Base and Solidifier can be used per mix (e.g. 2 x 77 ml Base plus 2 x 49 ml Solidifier).

Immediately brush the mixed conditioner onto the surface with a stiff bristled brush. From the commencement of mixing the **Belzona® 4251** must be applied within 5 minutes.

NOTES:

1. When mixing **Belzona® 4231** as a pourable slurry using reduced Aggregate it is not necessary to condition the substrate.

2. Overcoating must be completed within the following times:

Ambient Temperature	Minimum overcoating time	Maximum overcoating time*
41°F/ 5°C	Application can commence as soon as conditioning has been completed	30 mins.
50°F/10°C		30 mins.
59°F/15°C		30 mins.
68°F/20°C		30 mins.
77°F/25°C		30 mins.

* If the maximum overcoating time for the conditioned substrate is exceeded, then the cured surface should be abraded and reconditioned as in Section 2.

3. COMBINING THE REACTIVE COMPONENTS

To mix the **Belzona® 4231** mortar first use the largest of the three measuring pots to measure out 645 ml of **Belzona® 4231** Aggregate. Fill the measuring pot to the brim and decant the Aggregate to the large mixing bucket.

Each 645 ml measuring pot of **Belzona® 4231** Aggregate will require one 77 ml measure of **Belzona® 4251** Base and one 49 ml measure of **Belzona® 4251** Solidifier. Use the smaller measuring pots to measure out the Base and Solidifier, decant to a suitable mixing container, and stir thoroughly until completely mixed before adding to the pre-measured **Belzona® 4231** Aggregate. Mix the Resins into the Aggregate for at least one minute then use immediately.

Each measured mix of **Belzona® 4231** Mortar is equivalent to approximately 1.2 kg and will typically be sufficient to cover 0.95 sq.ft. (0.09 m²) at a thickness of ¼ inch (6 mm). If larger mixes are required then multiple measures can be used in a single mix (e.g. 2 x 77 ml Base plus 2 x 49 ml Solidifier plus 2 x 645 ml Aggregate), though it is recommended that no more than three times the standard measure is used (equivalent to 3.6 kg) per mix as there will likely be insufficient working life to mix and apply more than this quantity of material.

NOTES:

1. **SLURRY MIXES**

If a slurry/grouting mix of **Belzona® 4231** is required then this can be achieved by using less **Belzona® 4231** Aggregate in the mix. Adjust level as required.

2. WORKING LIFE
From the commencement of mixing, **Belzona® 4231** must be applied within 5 minutes.

3. VOLUME CAPACITY OF MIXED BELZONA® 4231
The theoretical volume capacity is 349 cu.ins (5720 cm³) per 13 kg unit.

4. COVERAGE RATE
On a flat smooth surface, the theoretical coverage rate of **Belzona® 4231** is 10.2 sq.ft. (0.95 m²) per 13 kg unit applied at ¼ inch (6 mm) thickness.

4. APPLYING BELZONA® 4231

Apply the mixed **Belzona® 4231** directly on to the conditioned surface with a trowel, float or other suitable tool. Tamp down firmly to remove entrapped air, to compact it and to ensure maximum contact with the surface. Complete the operation within 5 minutes.

NOTES:
1. APPLICATION TO VERTICAL SURFACES
When applying **Belzona® 4231** to vertical surfaces, the normal maximum thickness obtainable without sagging is ¼ inch (6 mm). However, on small areas, thicknesses of ½ inch (12 mm) can be achieved without sagging and, if necessary, a piece of polyethylene can be pressed onto the surface of the **Belzona® 4231** to prevent sagging. The polyethylene can be removed when the **Belzona® 4231** has cured.

2. APPLICATION LIMITS
Belzona® 4231 can be applied when the temperature is anywhere between 32°F and 77°F (0°C and 25°C). Below 32°F (0°C) the material may be too stiff for easy mixing and application, and above 77°F (25°C) the material may be too "fluid" to enable the required thickness to be obtained on vertical surfaces. Reference must also be made to the cure times below. Below 32°F (0°C) the rate of cure is reduced and some external heat source must then be used to effect full cure.

3. DAMP SURFACES
Belzona® 4231 should not be applied to damp surfaces.

4. APPLYING ADDITIONAL LAYERS OF BELZONA® 4231
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® 4231** must be abraded and reconditioned before further application.

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® 4231** to solidify for the following times before subjecting it to the conditions indicated:

Temperature	32°F (0°C)	50°F (10°C)	68°F (20°C)
To resist pedestrian traffic	2 hours	1½ hours	1¼ hours
Full mechanical hardness	2 days	1 day	8 hours
Full chemical resistance	7 days	5 days	3 days

These figures are for **Belzona® 4231** at a film thickness of ¼ inch (6 mm).

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

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