Belzona 7211

FN10192

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Repair • Protect • Improve

INSTRUCTIONS FOR USE

1. TO ENSURE AN EFFECTIVE MOLECULAR WELD

Any surface to which **Belzona 7211** is to be applied must be clean, firm and dry.

i) Metallic surfaces

a) 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).
b) Prepare the metal surface to achieve the following standard of cleanliness:
SSPC-SP6 commercial finish on the metal surfaces.
c) Application should commence as soon as possible before any oxidation of the surface takes place.

ii) Concrete surfaces

a) Remove any flaking paint, tar and/or other coatings, as well as any oil, grease and/or loose surface material.
b) The concrete must be dry and have no water in the anchor bolt holes. Do not condition or seal concrete surfaces.
c) Allow new concrete to cure for a minimum of 28 days or until the moisture content is below 6% using a Protimeter.

2. COMBINING THE REACTIVE COMPONENTS

a) Before mixing, please refer to **Section 3 Applying Belzona 7211** for application setup and formwork preparation.
b) To ensure proper mixing and pourability of the **Belzona 7211** system, store the Base, Solidifier and Aggregate in a warm room at 70-86°F (21-30°C) for at least 48 hours before mixing.
c) Crystallization of the Base component may occasionally occur during storage time and might exhibit cloudy liquid and white particles. If this occurs, simply warm the Base up to 104-122°F (40-50°C) to melt the crystals. Slowly stir and make sure all the crystals have been melted away. Allow the Base to cool down before mixing with Solidifier. The occurrence of crystallization does not affect the quality, performance, or reliability of the resin.
d) Premix the liquid components by pouring the Solidifier content into the Base container. Mix thoroughly with a slow speed (200-250 rpm) drill mixer to avoid air entrapment. A jiffy mixer blade type or equivalent is considered acceptable. Allow the mixer to run for 1-4 mins until a uniform color is achieved. Do not let the premixed Base and Solidifier stand without adding the Aggregate.
e) Immediately incorporate the Aggregate as described below:

1. For mixing the 54.5 lb (24.7 kg) unit

Transfer the mixed liquids into a bucket. With the slow speed, high torque mechanical mixer (Kol type mixer or equivalent) running, slowly add the Aggregate into the resin mix until it is completely wetted out and the desired consistency is achieved.

1.1. For **Standard Flow** consistency, add the entire contents of Aggregate.
1.2. For **High Flow** consistency, remove 1/5 of the Aggregate. This is equivalent to:
- 9.57 lb (4.34 kg) or
- 0.62 gal. (2.4 L) or
- 2.4 Belzona Mixing Bowls

2. For mixing the 273 lb (124 kg) unit

Transfer the mixed liquids into a horizontal shaft mortar mixer or equivalent. With the mixer running, slowly add the Aggregate into the resin mix until it is completely wetted out and the desired consistency is achieved.

2.1. For **Standard Flow** consistency, add the entire contents of Aggregate.
2.2. For **High Flow** consistency, remove 1/5 of the Aggregate. This is equivalent to 48.06 lb (21.8 kg) or 1 bag of Aggregate.

NOTES:

1. MIXING TEMPERATURES

Belzona 7211 should be mixed within the temperature range of 50-95°F (10-35°C).
Provide shade from direct sunlight to prevent the grout from setting up too fast, which may lead to shrinkage and/or cracking.
The flowability and strength gain are adversely affected by low temperatures. If the baseplate and foundation temperatures are less than 50°F (10°C), heating of the area may be necessary.

2. WORKING LIFE

From the commencement of mixing, **Belzona 7211** must be used within the times shown below.

Temperature	**60°F (15°C)**	**72°F (22°C)**	**86°F (30°C)**
Use all material within	60 minutes	45 minutes	30 minutes

3. MIXING RATIO

Base : Solidifier : Aggregate
4.6 : 1 : 41 by weight (Standard Flow)
4.6 : 1 : 33 by weight (High Flow)

Please refer to **Section 2 Combining the Reactive Components**, **item e**, for Standard and High Flow consistency directions.

4. VOLUME CAPACITY OF BELZONA 7211

Unit Coverage	Standard Flow	High Flow*
24.7 kg	682.95 in^3 (11,191.54 cm^3)	597.49 in^3 (9,791.11 cm^3)
124 kg	3,428.60 in^3 (56,184.69 cm^3)	2,999.56 in^3 (49,153.98 cm^3)

*Reduction of 1/5 of the Aggregate.

Please refer to Section 2 Combining the Reactive Components, **item e**, for Standard and High Flow consistency directions.

3. APPLYING BELZONA 7211

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 metal and concrete 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.

Application Setup
a) Align machinery using jacking screws or other alignment mechanism. Typical pour thickness range recommended for **Belzona 7211** is 2 to 8 in (50.8 to 203 mm).
b) Use anchor bolt sleeves, duct tape or non-melt grease to isolate the bolts from **Belzona 7211**.

Formwork Preparation
a) Build a formwork around the baseplate and foundation using rigid, non-absorbent materials such as wood or metal.
b) A chamfered grout edge can be shaped in the formwork to help distribute the stress of the edges over a wide surface area and to define the pour and overpour thickness.
c) Install the formwork away from the baseplate.
   1. Pouring side(s): 2 to 6 in (50.8 to 152.4 mm) to allow positioning of the headbox.
   2. Non-pouring side(s): 2 to 4 in (50.8 to 101.6 mm) to allow air to escape.

   Larger clearances may create thermal stress and lead to cracks.
   3. Height should account for both pour and overpour thickness. The recommended overpour is ¾ of the thickness of the equipment baseplate.
d) Apply **Belzona 9411/8411** (Release Agent) to the inside of formwork that temporarily holds the product during pour and cure process.
e) Seal the formwork with caulk/mastic or silicone to prevent leaks.
f) When required, divide the area to be grouted in sections by using expansion joints. Please contact the Belzona Technical Department for more information.

To Create Head Pressure
a) To enhance placement of the grout, a headbox should be built 45° angle sloped upward so the grout can be placed with minimum air entrapment.
b) Typically, the headbox height should be ⅓ to ½ of the distance that **Belzona 7211** must flow.

Pouring Belzona 7211
a) Commence pouring as soon as possible after mixing. Allow it to flow across and under the baseplate. Keep the headbox at least half full of **Belzona 7211** for a continuous and even pour. This will allow a minimum steady head pressure and avoid air entrapment.
b) To provide a better finish, use a solvent wiped trowel over the grout just before **Belzona 7211** becomes unworkable.

NOTES:
1. CLEANING
Mixing and application tools should be cleaned immediately after use with **Belzona 9111**, **Belzona 9121** or any other effective solvent e.g. methyl ethyl ketone (MEK), acetone or cellulose thinners.

4. COMPLETION OF THE MOLECULAR REACTION

Cure time is dependent on ambient, substrate and grout temperature. The lower the temperature the longer the cure time.

Allow **Belzona 7211** to cure as shown below:

Temperature	Cure Time
60°F (15°C)	48 hours
72°F (22°C)	24 hours
86°F (30°C)	12 hours

When curing is complete, remove the formwork and grind off the sharp edges of the overpour.

Belzona products are manufactured under an ISO 9001 Registered Quality Management System

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