

# Belzona 4141FR

FN10199



## INSTRUCTIONS FOR USE

### 1. ENSURING AN EFFECTIVE MOLECULAR WELD

Any surface to which **Belzona® 4141FR** 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.

Concrete suspected of carbonation should be thoroughly hammer tested to establish all areas of loose concrete. Hack off all loose concrete to expose corroded rebar, including hidden faces to the back of the rebar.

Abrade exposed rebar and other metallic surfaces to remove loose rust and flaking paint.

Stone, concrete or other masonry surfaces should be mechanically abraded or abrasive blasted to remove loose material.

Vacuum up any loose dust produced by surface preparation techniques.

### 2. CONDITIONING

Add the entire contents of **Belzona® 4911** (Magma TX Conditioner) Solidifier to **Belzona® 4911** Base and stir thoroughly until completely mixed. Immediately apply generous amounts of this conditioner onto the surface to be treated with **Belzona® 4141FR**. Use a stiff bristled brush and ensure not to exceed a coverage area of 1.1 m<sup>2</sup> (12 ft<sup>2</sup>) per 450 g unit.

#### NOTES:

- For mixing small quantities of **Belzona® 4911** use a ratio of: 2 Parts Base : 1 Part Solidifier by Volume
- Conditioning and overcoating must be completed within the times shown as follows:

Ambient Temperature	Usable life after mixing	Minimum overcoating time	Maximum overcoating time*
5 °C/41 °F	230 min	Application can commence as soon as conditioning has been completed.	6 hour
10 °C/50 °F	105 min		6 hour
20 °C/68 °F	45 min		6 hour
30 °C/86 °F	20 min		6 hour
40 °C/104 °F	7 min		6 hour

- \* 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

Mixing may be carried out in the large bucket supplied but due to the bulk and stiffness of the mixed materials, it is recommended that a forced action mechanical bucket mixer e.g. Daines or Humboldt, is used to ensure complete mixing.

- Empty the aggregate bag into a suitable forced action mechanical mixing bucket.
- Add the entire contents of the solidifier to the base tin and stir thoroughly until the resin is completely mixed.
- Start the forced action mechanical mixer and slowly introduce the mixed resins to the aggregate away from the mixing arm paddle and sides of the bucket. Avoid losing any of the mixed resins during this stage.
- Following a short period of mixing, take a portion of the wet aggregate from the mechanical bucket and add to the remaining mixed resin in the base tin. Using the supplied spatula, roughly blend the remaining resin into the aggregate prior to transferring back to the mechanical mixing bucket.
- Mix together thoroughly for a minimum of 5 minutes to achieve an even colour and consistency. During the mixing, periodically stop the mixer and scrape the paddle.
- Mixed material will be light and relatively dry. When adequately mixed, the product will bind together when compressed. To confirm this, the product will maintain its shape when hand-squeezed into a ball.

#### NOTES:

##### 1. WORKING LIFE

From the commencement of mixing, **Belzona® 4141FR** must be used within the times shown below:

Temperature	Use all material within
5 °C/41 °F	80 min
10 °C/50 °F	60 min
20 °C/68 °F	50 min
30 °C/86 °F	45 min
40 °C/104 °F	40 min

To extend the working life of mixed **Belzona® 4141FR** spread the material out on a sheet of polyethylene or a Belzona working surface and keep it in a cool place out of direct sunlight.

## 2. MIXING SMALL QUANTITIES

For mixing small quantities of **Belzona® 4141FR**, mix in the following ratio by weight.

Base	Solidifier	Aggregate
2.84	1	30

- i. Add the required amount of aggregate to the Belzona bucket provided.
- ii. Weigh out and mix base and solidifier in a suitable container e.g. Belzona mixing bowl (approx. 1 litre or 1 quart).
- iii. Add the aggregate from step i. to the mixed base and solidifier until the container is approximately half full and mix to incorporate the resin into the aggregate.
- iv. Empty the mixed materials into the Belzona bucket.
- v. Add an additional portion of dry aggregate to the suitable container to incorporate any remaining resin and repeat steps iii. and iv.
- vi. Using the supplied spatula, roughly blend the resin rich lumps into the aggregate in the Belzona bucket.
- vii. Mix together thoroughly for a minimum of 5 minutes to achieve an even colour and consistency.
- viii. Mixed material will be light and relatively dry. When adequately mixed, the product will bind together when compressed. To confirm this, the product will maintain its shape when hand-squeezed into a ball.

**3. VOLUME CAPACITY OF MIXED BELZONA® 4141FR**  
5,000 cm<sup>3</sup> (305 in<sup>3</sup>) per 3.0 kg unit.

**4. COVERAGE RATE OF MIXED BELZONA® 4141FR**  
When applied at a typical thickness of 25 mm per layer, the coverage rate will be 0.2 m<sup>2</sup> (2.12 ft<sup>2</sup>) per 3.0 kg unit.

## 4. APPLYING BELZONA® 4141FR

The mixed **Belzona® 4141FR** is best applied to the conditioned surface by steel float but can also be applied by gloved hand, when shuttering is used. The material should be pressed firmly into the areas to be rebuilt ensuring all material is compressed against the substrate leaving the **Belzona® 4141FR** slightly raised above the surrounding area. For unsupported, overhead repairs, always build the material from the edges towards the centre of the defect. For vertical repairs, work from the bottom of the defect upwards.

The repair can then be finished with a steel float or similar tool, used at a shallow angle with light pressure in a continuous motion to “close” the surface achieving a smooth finish. Best results are obtained by periodically cleaning the surface of the float or tool with a clean damp cloth or alcohol wipes.

### NOTES:

#### 1. APPLICATION LIMITS

**Belzona® 4141FR** can be applied when the temperature is anywhere between 5 °C (41 °F) and 40 °C (104 °F). For unsupported overhead applications, the maximum applied thickness is 25 mm per layer.

#### 2. DAMP SURFACES

**Belzona® 4141FR** can be applied to conditioned damp surfaces.

#### 3. APPLYING ADDITIONAL LAYERS OF BELZONA® 4141FR

Where this is required, the surface of the cured **Belzona® 4141FR** must be conditioned with **Belzona® 4911** (see Section 2) before applying further **Belzona® 4141FR**.

#### 4. OVERWORKING OR TOOLING OF THE SURFACE

Avoid overworking of the material in overhead applications as this may cause the material to drop down.

Excessive working of the surface will draw resin to the face of the repair and create a weaker layer at the base.

#### 5. CLEANING OF TOOLS

Application and mixing tools should be cleaned immediately after use by wiping with a dampened cloth or alcohol wipes.

## 5. COMPLETING THE MOLECULAR REACTION

Allow **Belzona® 4141FR** to solidify according to the following times:

Temperature	Dimensionally stable	Full mechanical strength and fire resistance
5 °C/41 °F	12 hour	3 day
10 °C/50 °F	10 hour	2 day
20 °C/68 °F	8 hour	1 day
30 °C/86 °F	7 hour	18 hour
40 °C/104 °F	6 hour	12 hour

**NOTE:** Once cured, the outermost surface may have some loosely bound aggregate. If necessary, this can be removed by brushing or using a clean damp cloth.

## HEALTH & SAFETY INFORMATION

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

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