

# Belzona 1111

FN10132 (SUPER METAL)



## INSTRUCTIONS FOR USE

### 1. TO ENSURE AN EFFECTIVE MOLECULAR WELD

**APPLY ONLY TO CLEAN, FIRM, DRY AND WELL ROUGHENED SURFACES**

- 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). Use a flame to sweat out oil from deeply impregnated surfaces.
- Roughen surfaces by blast cleaning, deeply scoring or grinding.
- Stabilize cracks by drilling the extremities. Long cracks should be drilled, tapped and bolted every 3-4 inches (77-103 mm).
- Vee-out all cracks using a rotary file.
- Finally degrease again. Use clean rags to avoid spreading contamination.

#### WHERE BELZONA® 1111 SHOULD NOT ADHERE

Brush on a thin layer of **Belzona® 9411** (Release Agent) and allow to dry for 15-20 minutes before proceeding to step 2.

### 2. COMBINING THE REACTIVE COMPONENTS

Transfer the entire contents of the Base and Solidifier modules on to the **Belzona® Working Surface**. Mix thoroughly together to achieve a uniform material free of any streakiness.

#### 1. MIXING AT LOW TEMPERATURES

To ease mixing when the material temperature is below 41°F (5°C), warm the Base and Solidifier modules until the contents attain a temperature of 68-77°F (20-25°C).

#### 2. WORKING LIFE

From the commencement of mixing, **Belzona® 1111** must be used within the times shown below.

Temperature	41°F (5°C)	59°F (15°C)	77°F (25°C)
Use all material within	35 min.	25 min.	15 min.

#### 3. MIXING SMALL QUANTITIES

For mixing small quantities of **Belzona® 1111** use:  
3 parts Base to 1 part Solidifier by volume  
5 parts Base to 1 part Solidifier by weight

#### 4. VOLUME CAPACITY OF MIXED BELZONA® 1111

24.3 cu.in. (398 cm<sup>3</sup>) per kg.

### 3. APPLYING BELZONA® 1111

#### FOR BEST RESULTS

##### Do not apply when:

- The temperature is below 41°F (5°C) or the relative humidity is above 90%.
- Rain, snow, fog or mist is present.
- There is moisture on the metal surface or is likely to be deposited by subsequent condensation.
- The working environment is likely to be contaminated by oil/grease from adjacent equipment or smoke from kerosene heaters or tobacco smoking.

- Apply the **Belzona® 1111** directly on to the prepared surface with the plastic applicator or spatula provided.
- Press down firmly to fill all cracks, remove entrapped air, and ensure maximum contact with the surface.
- Over cracks, gaps and holes, stipple in **Belzona® 9341** (Reinforcement Tape).
- Contour the **Belzona® 1111** to the correct profile with the plastic applicator or alternatively allow to cure and then machine down.

#### CLEANING

Mixing tools should be cleaned immediately after use with **Belzona® 9111** or any other effective solvent e.g. Methyl ethyl ketone (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.

#### 4. COMPLETION OF THE MOLECULAR REACTION

Allow **Belzona® 1111** to solidify as below subjecting it to the conditions indicated.

Temperature	Movement or use involving no loading or immersion	Machining and/or light loading	Full mechanical or thermal loading	Immersion in chemicals
41°F/ 5°C	4 hours	6 hours	4 days	5 days
50°F/10°C	3 hours	4 hours	2 days	4 days
59°F/15°C	2¼ hours	3 hours	1½ days	3 days
68°F/20°C	1¾ hours	2 hours	1 day	2 days
77°F/25°C	1 hour	1½ hours	20 hours	1½ days
86°F/30°C	¾ hour	1 hour	16 hours	1 day

These times are for a thickness of approximately 0.25 inch (6 mm); they will be reduced for thicker sections and extended for thinner sections.

#### 5. EFFECTING THE SECONDARY MOLECULAR REACTION

The mechanical properties, heat resistance and chemical resistance of **Belzona® 1111** will be improved by post curing.

After 2 - 4 hours of applying **Belzona® 1111**, post cure the material using forced air heaters, heat lamps, etc. for a minimum of 4 hours at 140-212°F (60-100°C).

Generally, the higher the post cure temperature adopted, the higher the properties attained.

#### 6. APPLICATION OF A FURTHER LAYER OF BELZONA® 1111

Whenever possible the **Belzona® 1111** should be applied in a single layer to achieve the required thickness. When applying additional layers is unavoidable, additional material should be applied **as soon as possible** whilst first layer is still soft and ideally within 60 minutes.

If the **Belzona® 1111** is no longer soft the surface must be roughened by abrading or flash blasting before applying further **Belzona® 1111**.

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#### HEALTH & SAFETY INFORMATION

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

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