Belzona 5871

FN10198

BELZONA®
Repair • Protect • Improve

INSTRUCTIONS FOR USE

1. TO ENSURE AN EFFECTIVE MOLECULAR WELD

RECOMMENDED PROCEDURE

a) Brush away loose contamination and remove dirt, oil, grease etc. Degrease with **Belzona® 9111** (Cleaner/Degreaser) or any other effective cleaner which does not leave a residue e.g. methyl ethyl ketone (MEK).

b) Select an abrasive to give the necessary standard of cleanliness and a minimum depth of profile of 75 microns (3 mils). Use only an angular abrasive with low chloride content.
Blast clean the metal surface to achieve the following standard of cleanliness:
ISO 8501-1 Sa 2½ very thorough blast cleaning.
American Standard near white finish SSPC SP 10.
Swedish Standard Sa 2½ SIS 05 5900.
Or
When blast cleaning is not possible, power tool clean surface to a standard of cleanliness of SSPC-SP11 power tool cleaning to bare metal (≥ 25 microns profile).

c) After roughening, degrease by flooding with **Belzona® 9111** (Cleaner/Degreaser) or other effective cleaner, working it into the prepared area with a short-bristled brush.

The better the surface preparation, the longer the service life.

WHERE BELZONA® 5871 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. PIT FILLING & STRIPE COATING

All welds should be prepared to NACE SP0178 Grade C or better. Deep pitting and rough welds should be smoothed out with **Belzona® 1511** mixed, applied and overcoated in accordance with the IFU.

3. COMBINING THE REACTIVE COMPONENTS

1. WORKING LIFE

a) For small unit mixing (0.6 litres), transfer the entire contents of the Solidifier container to the Base container.
Alternately, for partial mixes use the supplied mixing bowl in accordance with Part 2. MIXING SMALL QUANTITIES, not exceeding 0.6 litres total volume.
NOTE - The 7.5 litre unit is designed for plural spray application.

b) Immediately mix together for 2-3 minutes. To ensure maximum foam growth, use all material within the times shown in the table below:

Temperature	Use all material within
5°C (41°F)	45 mins
10°C (50°F)	30 mins
20°C (68°F)	20 mins
30°C (86°F)	15 mins
40°C (104°F)	10 mins

NOTE – After mixing, application must commence immediately to ensure foam growth is not hindered.

2. MIXING SMALL QUANTITIES

For mixing small quantities of **Belzona® 5871** use:
2 parts Base to 1 part Solidifier by volume
2.3 parts Base to 1 part Solidifier by weight

4. APPLYING BELZONA® 5871

FOR BEST RESULTS DO NOT APPLY WHEN:

(i) The temperature is below 5°C (41°F), above 40°C (104°F) or the relative humidity is above 85%.
(ii) Rain, snow, fog or mist is present.
(iii) There is moisture on the metal 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.

NOTE – Irrespective of application method, for best results, and to achieve the stated level of performance, the substrate temperature must be between 5°C and 40°C (41°F and 104°F) for acceptable cure and foam growth. Application on substrates above 40°C (104°F) is possible, however film build, foam growth and product appearance/quality may be impaired, and as such additional layers could be required to achieve the desired level of insulation. It is strongly recommended that Belzona® 5871 should not be applied onto substrates exceeding 90°C (194°F).

THEORETICAL COVERAGE RATE

When applied at the target thickness of 1000 microns wet film thickness to give 3000 microns dry film thickness (due to foaming action), the theoretical coverage rate will be 1.0 m² (10.8 sq. ft.) per litre.

To facilitate ease of application, **Belzona® 5871** should be applied based on coverage rate rather than wet film thickness readings.

NOTE – Minimum recommended thickness is 500 microns wet film thickness per layer. Under-thickness application will increase the likelihood of an inconsistent film finish after foaming.

IMPORTANT NOTE:

BELZONA 5871 IS A SELF FOAMING INSULATIVE MATERIAL PROVIDING BARRIER PROPERTIES. ALTHOUGH A CONSISTANT FILM BUILD CAN BE ACHIEVED, IREGULARITIES WITHIN THE SURFACE FINISH ARE TO BE EXPECTED DUE TO THE DYNAMIC NATURE OF THE CURE MECHANISM.

4.1 HAND APPLICATION

a) Apply the **Belzona® 5871** directly on to the surface using a short-bristled brush or plastic applicator.

b) Maintain a wet edge by constantly working away from starting point.

c) Once the correct film thickness is achieved, do not over work the applied product. Constantly move on to new areas maintaining the wet edge. Revisiting areas previously applied may compromise the films integrity and hinder foam growth during cure.

d) Apply **Belzona® 5871** without interruption to ensure foam growth is not hampered during cure.

e) When working with multiple mixes, apply each mix in defined sections, working up to but do not overlap existing material.

NOTE – During application, Belzona® 5871 will begin to foam in the mix. This is normal. Continue application of Belzona® 5871 within the stated working life.

To ease application, where possible, Belzona® 5871 should be spread out over the surface as soon as possible after completion of mixing.

4.2 SPRAY APPLICATION - CARTRIDGE SPRAY

Belzona® 5871 can be spray applied using the **Belzona® Cartridge Spray gun**.

a) See "**Belzona® Cartridge Spray gun"** IFU for spraying instructions.

b) Only commence mixing once the spray equipment has been assembled and tested.

c) Divide the 600ml unit into two separate 300ml mixes. Each 300ml quantity should be mixed, filled into a cartridge and sprayed separately.

d) Spray **Belzona® 5871** directly on to the surface, immediately after mixing without interruption to ensure foam growth is not hampered during cure.

NOTE - To prevent excessive build-up of foam inside the spray gun:

a) Spraying must commence immediately and without interruption, once the filled cartridge is sealed inside the spray gun.

b) Under no circumstance must a filled/mixed cartridge be left in a sealed gun to expand and cure. The cartridge must be removed from the spray gun as soon as application is complete, as unused but reacting material can cause a blockage.

4.3 SPRAY APPLICATION – PLURAL SPRAY

Belzona® 5871 can also be spray applied using heated plural airless equipment. See "**SPRAYING BELZONA® COATINGS**" IFU, Section 5 "APPLICATION BY PLURAL SPRAY".

Only commence mixing once the spray equipment has been thoroughly tested and up to temperature.

Belzona® 5871 must be sprayed using heated plural airless equipment capable of metering accurately and mixing the two components.

Mix ratio	**2:1 by volume**
Tip Temperature	**40 - 50°C (104 - 122°F)**
Tip Pressure (minimum)	**(207 bar) 3000 psi**
Tip Size	**17 - 23 thou (0.43 - 0.58mm)**
In-line mixers (minimum)	**2**

Ensure the mixed fluid spray line after the manifold conforms with minimum length recommendations from the spray pump manufacturer.
Do not install any in-line mixers directly to the mix manifold. In-line mixers must be staggered evenly along the mixed line length.

	DO NOT THIN
Cleaning solvent	**Belzona® 9121, MEK or Acetone**

Belzona® 5871 must be stored between 20 - 30°C (68 - 86°F) prior to plural airless spray application. A trace heating system on both Base and Solidifier lines is required, water temperature should be set to 70 - 80°C (158 - 176°F).

NOTE – Belzona® 5871 is not recommended to be spray applied by single component airless spray equipment.

A. APPLICATION AS A MULTI-LAYER SYSTEM

a) Apply the first layer of **Belzona® 5871** at the recommended film thickness based on coverage rate. See Section 4.4 for recommended film thickness based on surface temperature reduction requirements.

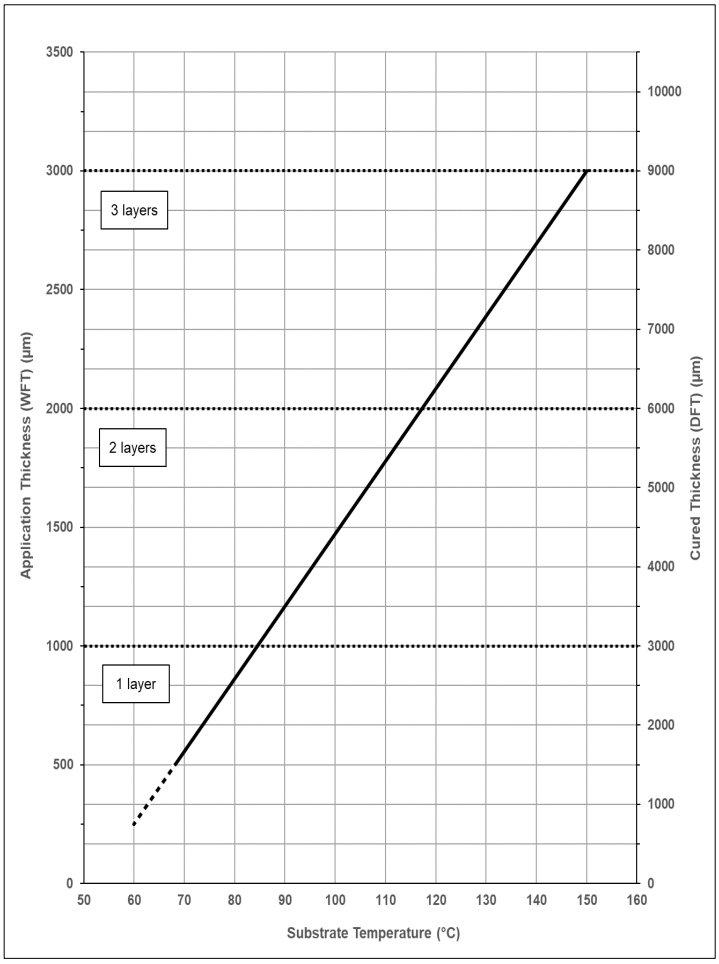
b) As soon as possible after application of the first layer, apply a further layer of **Belzona® 5871** as in (a) above. This time will be typically 6 hours at 20°C (68°F). Overcoating must occur within 24 hours, irrespective of temperature. After this time the surface must be abraded to produce a frosted appearance, free of any gloss, with a target profile of 25 microns.

c) If required, apply a third layer of **Belzona® 5871** as in (b) above.

B. APPLICATION AS A SINGLE LAYER SYSTEM

Where service conditions permit, **Belzona® 5871** may be applied as a single layer. Apply **Belzona® 5871** at the recommended film thickness based on coverage rate. See Section 4.4 for recommended film thickness based on surface temperature reduction requirements.

4.4 FILM THICKNESS REQUIRED TO REDUCE SURFACE TEMPERATURE TO ≤ 60°C BASED ON SUBSTRATE TEMPERATURE



NOTES –
a) Above graph is based on product application between 5-40°C (41°F-104°F).

b) Minimum recommended thickness is 500 microns wet film thickness per layer.

4.5 OVERCOATING WITH BELZONA® 3211

In the event a topcoat is required for UV resistance and/or fire resistance, **Belzona® 5871** can be overcoated with **Belzona® 3211**. This should be carried out within the overcoat window of **Belzona® 5871** which will typically be a minimum of 6 hours at 20°C (68°F). Overcoating must occur within 24 hours, irrespective of temperature. After this time the surface must be abraded to produce a frosted appearance, free of any gloss, with a target profile of 25 microns.

4.6 REPAIRS
Within the overcoating window any misses or mechanical damage can be repaired by application of a further coat of **Belzona® 5871**.
Outside of the overcoating window, the surface of the **Belzona® 5871** must be abraded to produce a frosted appearance, free of any gloss, with a target profile of 25 microns.

4.7 COLOUR
Belzona® 5871 is available as a single colour (orange). In service the colour of the applied product may change.

4.8 CLEANING
Tools should be cleaned immediately after use with **Belzona® 9111** or any other effective solvent e.g. Methyl ethyl ketone (MEK). Brushes 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

Prior to heat exposure, **Belzona® 5871** should be allowed to cure as follows:

Ambient temperature	Time until full service
5°C (41°F)	36 hrs
10°C (50°F)	24 hrs
20°C (68°F)	16 hrs
30°C (86°F)	12 hrs
40°C (104°F)	8 hrs

Following the times above, the service temperature should be gradually increased, ensuring the ramp rate does not exceed 50°C (122°F) per hour.

6. STORAGE & TRANSPORTATION

Storage and transportation at temperatures above 30°C (86°F) has the potential to reduce shelf life.

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

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

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