

Belzona 3411

FN10153



INSTRUCTIONS FOR USE

1. TO ENSURE AN EFFECTIVE MOLECULAR WELD

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). Where necessary, use a flame to sweat out oil from deeply impregnated surfaces.

The areas where **Belzona® 3411** will be bonded require additional surface preparation to ensure good adhesion:

i) Metallic Surfaces

Wire brush exposed/corroded steel to achieve a minimum SSPC-SP-2 or ISO 8501-1 St 2 hand-tool cleaned surface.

ii) Painted Surfaces

Thoroughly abrade painted surfaces with abrasive paper to remove all gloss and provide a good key for coating.

FOR BEST RESULTS

Do not apply **Belzona 8411** or **3411** when:

- (i) Rain, snow, fog or mist is present.
- (ii) Surface temperature is below 41°F (5°C).
- (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.

2. APPLYING BELZONA® 8411

Belzona® 8411 is designed to be used in conjunction with **Belzona® 3411** to provide flanges and fastening with an optimum level of corrosion protection. **Belzona® 8411** can also be used alone to provide protection to metal substrates exposed to low-level corrosion (e.g. in workshop environments).

Belzona® 8411 is supplied in 0.5 litre containers with a non-pressurised spray pump. The top of the container is first removed and the seal punctured. The spray pump is screwed on and the **Belzona® 8411** can then be sprayed by pumping the trigger. The jet can be adjusted using the nozzle regulator.

Shake the **Belzona® 8411** container before use and spray apply directly onto the prepared surface taking care that the material penetrates any irregularities in the surface.

Touch dry times will depend on the substrate temperature, as indicated in the table below:

Temperature	41°F (5°C)	68°F (20°C)	104°F (40°C)
Touch dry time	2 hours	1 hour	30 min

COVERAGE RATE

Apply **Belzona® 8411** to give a coverage rate of approximately 43 sq.ft (4.0 m²) per 0.5 liter unit at 5 mil (125 microns) wet film thickness.

REMOVAL OF BELZONA® 8411

If necessary, e.g. where a clean surface is required, the film of **Belzona® 8411** is easily removed with a suitable solvent such as **Belzona® 9111**, **Belzona® 9121**, white spirit, MEK or acetone.

3. COMBINING THE REACTIVE COMPONENTS

Belzona® 3411 is a moisture cured system, therefore to ensure cure is not retarded and the correct overcoat times are observed, the temperature and relative humidity must be measured before application of **Belzona® 3411** begins ensuring the relative humidity is above 30% and the temperature is above 5°C.

Both **Belzona® 3411** Base and Solidifier components must remain sealed until the application stage.

Empty the entire contents of the **Belzona® 3411** Base container and Solidifier container into the mixing bowl provided. Immediately mix together for at least 3 minutes and use all material within the times shown in the table below.

	Relative humidity	Temperature			
		41°F (5°C)	50°F (10°C)	68°F (20°C)	104°F (40°C)
Use all material within:	30%	180 min.	150 min.	120 min.	90 min.
	50%	150 min.	120 min.	90 min.	60 min.
	80%	120 min.	90 min.	60 min.	30 min.

4. APPLYING BELZONA® 3411

Belzona® 3411 is specifically designed to protect flanges and fastenings from corrosion, and a brief overview of the encapsulation procedure is described below. For more detailed instructions see Belzona Know-How System Leaflet GSS-11.

a) ENCAPSULATING FLANGES AND FASTENINGS

1. After the bond area has been prepared as described previously seal the gap between the flanges with **Belzona® 9431 (Instant Bridging Tape)**.

NOTE: Belzona® 9431 (Instant Bridging Tape) must be applied within the boundary of the outer edge of the flanges and **MUST NOT** impinge onto the bolting faces of the flanges.

- Apply masking tape over the two bond areas to protect these sections of pipe from accidental overspray of **Belzona® 8411** and impairing adhesion.
- Spray **Belzona® 8411** onto the flange, pipe and fastenings and allow to become touch dry as indicated in the table in Section 2.
- Once **Belzona® 8411** is touch dry, remove the masking tape and fit plastic bolt caps.
- Apply the **Belzona® 3411** directly onto the prepared surface with a short bristled brush between 30 and 40 mils (750 - 1000 microns) extending the **Belzona® 3411** onto the bond area.
- For optimum application properties apply **Belzona® 3411** between 59°F and 77°F (15°C and 25°C).
- While the first layer of **Belzona® 3411** is still wet, bed strips of **Belzona® 9311 (Reinforcing sheet)** into the **Belzona® 3411** around the flange circumference and at both ends of the repair where it will bond to the pipe.

NOTE: The strip of **Belzona® 9311** applied around the flange circumference must be applied within the boundary of the outer edge of the flanges and **MUST NOT** impinge onto the bolting faces of the flanges.

- As soon as the first coat is touch dry, apply a further coat of **Belzona® 3411** as in 5 above. The minimum overcoating time will be dependent on the temperature of the substrate and relative humidity, as indicated in the table below:

	Relative humidity	Substrate temperature			
		41°F (5°C)	50°F (10°C)	68°F (20°C)	104°F (40°C)
Touch dry time	30%	7 hours	6 hours	4 hours	3 hours
	50%	5 hours	4 hours	3 hours	2 hours
	80%	4 hours	3 hours	2 hours	1 hour

These times are for a thickness of approximately 35 mils (875 microns). They will be extended for thicker sections and reduced for thinner sections.

NOTE: In warm climates or on hot surfaces (above 86°F/30°C) it may be necessary to apply the system in multiple coats in order to achieve the recommended target thickness. The surface temperature **MUST NOT** exceed 140°F (60°C).

b) ACCESSING FLANGES AND FASTENINGS DURING REQUIRED MAINTENANCE

- Using a sharp knife, cut through the **Belzona® 3411** in the gap between the flanges, continuing around the circumference of the flange.
- Peel back the **Belzona® 3411** and bolt caps to expose the bolts and flanges.
- Once the required maintenance has been completed fold the **Belzona® 3411** back to its original position.
- Clean the surface of the **Belzona® 3411** around the flange circumference with **Belzona® 9111** or similar to remove all dirt, grease and surface contaminants.
- To re-seal the repair, mix a further quantity of **Belzona® 3411** and brush apply this onto the cut area around the circumference of the flange.

NOTES:

COVERAGE RATES

The theoretical coverage rate to achieve the correct minimum two coat system thickness of 60 mil (1500 microns) is 4.4 sq.ft (0.4 m²)/kg.

CLEANING

Brushes or any other application tools should be cleaned using a suitable solvent such as **Belzona® 9121**, MEK, acetone or cellulose thinners.

DIFFERENTIATION BETWEEN LAYERS

Belzona® 3411 is available in two different colours, beige and grey, to facilitate application and to prevent misses. In service the colour of the applied product may change.

5. COMPLETION OF THE MOLECULAR REACTION

Cure times will depend on the substrate temperature and relative humidity, as indicated in the table below:

	Relative humidity	Substrate temperature			
		41°F (5°C)	50°F (10°C)	68°F (20°C)	104°F (40°C)
Full Cure	30%	7 days	6 days	5 days	4 days
	50%	6 days	5 days	4 days	3 days
	80%	5 days	4 days	3 days	2 days

HEALTH & SAFETY INFORMATION

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

The technical data contained herein is based on the results of long term tests carried out in our laboratories and to the best of our knowledge is true and accurate on the date of publication. It is however subject to change without prior notice and the user should contact Belzona to verify the technical data is correct before specifying or ordering. No guarantee of accuracy is given or implied. We assume no responsibility for rates of coverage, performance or injury resulting from use. Liability, if any, is limited to the replacement of products. No other warranty or guarantee of any kind is made by Belzona, express or implied, whether statutory, by operation of law or otherwise, including merchantability or fitness for a particular purpose.

Nothing in the foregoing statement shall exclude or limit any liability of Belzona to the extent such liability cannot by law be excluded or limited.

Copyright © 2017 Belzona International Limited. Belzona® is a registered trademark.

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

