Belzona 1983

FN10170

BELZONA®
Repair • Protect • Improve

INSTRUCTIONS FOR USE

IMPORTANT NOTE:

THIS DOCUMENT IS FOR GUIDANCE ONLY. THE CORRECT USE OF BELZONA® 1983 AS PART OF THE ISO 24817 / ASME PCC-2 SECTION 4.1 COMPLIANT SUPERWRAP® II SYSTEM IS SPECIFIED IN THE METHOD STATEMENT PROVIDED WITH THE BESPOKE DESIGN PACK AND IS APPROVED ONLY FOR QUALIFIED PERSONNEL WHO HAVE BEEN VALIDATED IN ACCORDANCE WITH ISO 24817 (ANNEX I) OR ASME PCC-2 SECTION 4.1.

Belzona® 1983 is designed as an impregnation resin for **Belzona® 9381** fabric to create composite repairs.

1. TO ENSURE AN EFFECTIVE MOLECULAR WELD

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

b) Select an abrasive to give the necessary standard of cleanliness and a minimum depth of profile of 3 mils (75 microns). Use only an angular abrasive.
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
Power tool clean the surface to achieve the following standard of cleanliness:
SSPC-SP11 power tool cleaning to bare metal and a minimum depth of profile of 1 mil (25 microns).

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. Allow surface to dry.

For optimum results, the greatest possible surface preparation should be achieved.

d) Mix and apply an appropriate Belzona paste grade product (e.g. **Belzona® 1511**) in accordance with the relevant IFU to fill heavily pitted/damaged areas prior to application of the composite laminate.

2. COMBINING THE REACTIVE COMPONENTS

Use the measuring cups provided to decant Base (250 ml. cup) and Solidifier (100 ml. cup) in the correct volume ratio. Decant the components into the bowl provided, ensuring to scrape any excess out of the measuring cups before mixing thoroughly for 3 minutes until a homogeneous mix is achieved then immediately proceed to Stage 3, “Application”.

WARNING:
UNDER NO CIRCUMSTANCES SHOULD MATERIAL BE MIXED AND LEFT TO STAND, AS THE EXOTHERM PRODUCED WILL GREATLY REDUCE THE WORKING LIFE OF THE MIXED MATERIAL.

NOTE:

1. WORKING LIFE

From the commencement of mixing, **Belzona® 1983** must be used within the times shown below.

Temperature	Use all material within
41°F (5°C)	120 minutes
50°F (10°C)	60 minutes
68°F (20°C)	30 minutes
86°F (30°C)	18 minutes
104°F (40°C)	10 minutes

2. MIXING SMALL QUANTITIES

For mixing small quantities of **Belzona® 1983** use:
2.5 parts Base to 1 part Solidifier by volume
2.9 parts Base to 1 part Solidifier by weight

3. APPLYING BELZONA® 1983

FOR BEST RESULTS
Do not apply when:
(i) The temperature is below 41°F (5°C) or the relative humidity is above 90%.
(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.

a) **APPLICATION OF BELZONA® 1983**
Initially apply a thin layer of **Belzona® 1983** onto the repair area, working it into the substrate with a short-bristled brush. Apply the **Belzona® 1983** directly to **Belzona® 9381** composite fabric with an applicator, brush, roller or rubber squeegee. Ensure saturation of **Belzona® 9381** fabric (see coverage rates below) as indicated by translucency of glass fibres on the composite fabric.

b) **APPLICATION OF WET COMPOSITE**
Wrap the wet **Belzona® 9381** fabric in a spiral fashion with a 50% overlap. Depending on the chosen **Belzona® 9381** fabric width, this may be indicated by centre-line tracer stitch. Add additional wraps as required, observing over-wrap times. Regardless of conditions, no more than four wraps should be applied before the application of release film to ensure an effective bond.

c) **APPLICATION OF RELEASE FILM**
Within the marked repair area, wrap the **Belzona® 9382** release film over the completed wet repair area in a spiral fashion. Apply tension to compress composite. Secure taut at both ends by the application of adhesive tape.

COVERAGE RATES
Rolls of **Belzona® 9381** fabric are available in a choice of four widths (42mm, 84mm, 254mm and 1270mm). The quantity of **Belzona® 1983** required to fully wet each width of **Belzona® 9381** fabric is shown in the table below.

Belzona® 9381 width	Volume of **Belzona® SuperWrap® II** resin per linear meter of **Belzona® 9381** (L)	Length of **Belzona® 9381** per litre **Belzona® SuperWrap® II** resin (m)
42 mm	0.03	33.4
84 mm	0.06	16.7
254 mm	0.19	5.3
1270 mm	0.95	1.1

OVER-WRAP TIMES
The maximum over-wrap time for **Belzona® 1983** composite onto previous layers of **Belzona® 1983** composite is 12 hours irrespective of temperature or humidity.

In the event that the maximum overcoat time is exceeded, then the cured surface should be washed with warm detergent solution to remove any amine bloom that has formed. Rinse the surface with clean water and allow to dry. Abrade the surface of the **Belzona® 1983** composite to produce a frosted appearance free of all gloss and degrease with **Belzona® 9111** or any other effective cleaner which does not leave a residue e.g. MEK. Then apply additional layers of **Belzona® 1983** composite.

NOTES:
1. CLEANING
Mixing 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.

2. COLOUR
Belzona SuperWrap® II resins are available in different colours to facilitate identification. **Belzona® 1981** is blue, **Belzona® 1982** is green and **Belzona® 1983** is amber. There may be some colour variation between batches and in service the colour of the applied product may change.

4. COMPLETION OF THE MOLECULAR REACTION

Solidification time is dependent on cure temperature, the lower the temperature the longer the solidification time.

Allow **Belzona® 1983** to solidify as below prior to service conditions.

Temperature	Touch Dry	Back to service	Chemical contact
41°F(5°C)	16 hours	7 days	Post curing required *
50°F(10°C)	6 hours	5 days	Post curing required *
68°F(20°C)	3.5 hours	48 hours	7 days
86°F(30°C)	90 mins.	30 hours	4 days
104°F(40°C)	70 mins.	30 hours	2 days

* For advice on contact with aggressive chemicals please consult your Belzona representative. In certain cases, it may be necessary to apply external heating prior to service, e.g. a minimum of 1 hour at 140°F (60°C).

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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