Belzona 5892

FN10106

BELZONA®
Repair • Protect • Improve

INSTRUCTIONS FOR USE

1. TO ENSURE AN EFFECTIVE MOLECULAR WELD

a) SURFACE PREPARATION

(i) Metallic Surfaces

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 3 mils (75 microns). Use only an angular abrasive with low chloride content.

c) 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.

d) After blasting, metal surfaces should be coated before any oxidation of the surface takes place.

e) **Salt contaminated surfaces**
The soluble salt contamination of the prepared substrate, immediately prior to application, should be less than 20mg/m² (2µg/cm²).
Metal surfaces that have been immersed for any periods in salt solutions e.g. sea water, should be blasted to the required standard, left for 24 hours to allow the ingrained salts to sweat to the surface, then washed prior to a further brush blast to remove these. This process may need to be repeated several times to ensure complete removal of the salts. Salt removal aids are commercially available that will assist and speed salt removal. Contact Belzona for best recommendation.

(ii) Concrete Surfaces

Remove all paint, tar and other coatings, as well as any loose surface material, before application of **Belzona® 5892.**
Horizontal concrete surfaces, as well as new concrete, will exhibit the phenomenon of laitance which must be removed prior to application. Allow new concrete to cure for a minimum of 28 days
Floors should have an effective vapor barrier installed.

Test for presence of moisture either

a) In accordance with ASTM D4263 – plastic sheet method, or
b) Measure moisture content using Electronic Moisture Meter <6% moisture (<15%WME)

If test is positive for presence of moisture, test further by either

a) Measure Moisture Vapor Emission Rate in accordance with ASTM F 1869 - Anhydrous Calcium Chloride test. Acceptable if <3lbs/1000ft²/24 hours (15g/m²/24 hours), or
b) Measure Relative Humidity of concrete in accordance with ASTM F2170. Acceptable if <75%

NOTE
Belzona 4981 (Conditioner) is recommended to be applied to any rough, weak or friable concrete surfaces prior to application of the **Belzona 5892** system. (See **Belzona 4981** IFU for application details).

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 relevant IFU.

All detail areas such as welds, brackets, baffles, deflectors etc. that cannot be effectively sprayed should be stripe coated by brush with **Belzona® 5892.**

3. COMBINING THE REACTIVE COMPONENTS

Transfer the entire contents of the Solidifier container into the Base container. Mix thoroughly together to achieve a uniform material free of any streakiness.

NOTES:

1. MIXING AT LOW TEMPERATURES
To ease mixing when the material temperature is below 50°F (10°C), warm the Base and Solidifier containers until the contents attain a temperature of 68-77°F (20-25°C).

2. WORKING LIFE
From the commencement of mixing, **Belzona® 5892** must be used within the times shown below.

Temperature	68°F (20°C)	86°F (30°C)	104°F (40°C)	122°F (50°C)
Use all material within	40 mins	35 mins	25 mins	15 mins

3. MIXING SMALL QUANTITIES
For mixing small quantities of **Belzona® 5892** use:
3.5 parts Base to 1 parts Solidifier by volume
5.7 parts Base to 1 parts Solidifier by weight

4. APPLYING BELZONA® 5892

FOR BEST RESULTS
Do not apply when:

(i) The temperature is below 50°F (10°C) 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.

a) **FIRST COAT**
Apply the **Belzona® 5892 (white)** directly on to the prepared surface with a short bristled brush, rubber squeegee or Airless spray (see section 4.1).

b) **SECOND COAT**
As soon as possible after application of the first coat, apply a further coat of **Belzona® 5892 (grey)** as in (a) above. See section 4.5 for overcoat times. If overcoat time is exceeded the surface must be brush blasted to achieve a frosted appearance free of any gloss with a target profile of 1.5 mils (40 microns).

4.1 SPRAY APPLICATION
Suitable metal areas may be coated by spray using heated airless equipment. Use either a single airless pump or plural equipment capable of metering accurately and mixing the two components.

Mix ratio	**3.5:1 by volume**
Tip Temperature	**104-122°F (40-50°C)**
Tip pressure (minimum)	**2500 psi (172 bar)**
Tip size	**17-23 thou (0.43-0.58mm)**
DO NOT THIN	
Cleaning solvent	**Belzona® 9121, MEK or Acetone**

Only commence mixing once the spray equipment has been assembled and thoroughly tested - see separate **"Instructions for spraying Belzona® solvent free coatings".**

4.2 INJECTION
Belzona® 5892 may be applied using pneumatic injection or airless pump equipment to create load bearing irregular shims.

4.3 COVERAGE RATES

Recommended number of coats	2
Target thickness 1st coat	10 mils (250 microns)
Target thickness 2nd coat	10 mils (250 microns)
Minimum total DFT	16 mils (400 microns)
Maximum total DFT	Only limited by sag resistance
Theoretical coverage rate 1st coat	43 sq.ft/litre (4 m²/litre)
Theoretical coverage rate 2nd coat	43 sq.ft/litre (4 m²/litre)
Theoretical coverage rate to achieve minimum recommended system thickness	27 sq.ft/litre (2.5 m²/litre)

4.4 PRACTICAL COVERAGE RATES

Appropriate loss factors must be applied to the above coverage rates. In practice, many factors influence the actual coverage rate achieved. On rough surfaces such as pitted steel the practical coverage rate will be reduced. Application at low temperatures will also reduce practical coverage rates further.

4.5 OVERCOAT TIMES

Belzona® 5892 can be overcoated as soon as it is firm enough to do so. At 68°F (20°C) it will be possible to walk on the coating after 6-8 hours. If access can be gained without walking on the first coat, overcoating can take place after as little as 3-4 hours depending on temperature. The maximum overcoat time is dependent on both temperature and humidity as set out below. If these times are exceeded the surface must be brush blasted to achieve a frosted appearance free of gloss with a minimum surface profile of 1.5 mils (40 microns).

Temperature	<50% Relative Humidity	>50% Relative Humidity
Up to 68°F (20°C)	24 hours	24 hours
Up to 86°F (30°C)	24 hours	18 hours
Up to 104°F (40°C)	18 hours	8 hours

4.6 INSPECTION

a) Immediately after application of each unit, visually inspect for pinholes and misses. Where detected, these should be immediately brushed out.

b) Once the application is complete and the coating is dimensionally stable, carry out a thorough visual inspection to confirm freedom from pinholes and misses, and to identify any possible mechanical damage.

c) Spark testing in accordance with NACE SP0188 can be carried out to confirm coating continuity. A voltage of 2.5kV is recommended to confirm that a minimum coating thickness of 16 mil (400 microns) has been achieved.

4.7 REPAIRS

Within the overcoating window any misses, pinholes or mechanical damage can be repaired by application of a further coat of **Belzona® 5892**. Outside of the overcoating window, the surface of the **Belzona® 5892** must be abrasive blasted or abraded to produce a frosted appearance, free of all gloss, before coating. A profile of 1.5 mils (40 microns) should be aimed for.

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® 5892 is available in two colours to facilitate application and to prevent misses. These colours are for identification only and there will be some variation between batches. In service the colour of the applied product may change.

5. COMPLETION OF THE MOLECULAR REACTION

The coating should be allowed to cure as follows:

Ambient temperature	Time until inspection	Time until full service	Time until post-cure (if required)	
			Dry	Wet
50°F (10°C)	42 hrs	post-cure required	42 hrs	15 days
68°F (20°C)	18 hrs	post-cure required	18 hrs	6 days
86°F (30°C)	5 hrs	24 hrs	5 hrs	12 hrs
104°F (40°C)	4½ hrs	20 hrs	4½ hrs	10 hrs

Coated equipment can be transported after the material has achieved the 'inspection' level of cure.

Post-cure will generally be unnecessary as, in most circumstances, the coating will cure sufficiently at ambient temperature with full cure achieved in service. However, post-cure may be necessary (see table above) or desirable to facilitate faster cure and quicker return to service (see below).

5.1 POST-CURE

If post-cure is necessary or desirable, the coating should be heated to between 140°F (60°C) and 212°F (100°C) for a minimum of 1 hour, or to 122°F (50°C) for a minimum of 2 hours.

The coating should be allowed to cure as detailed in the above table prior to a dry (e.g. hot air) or wet (e.g. steam and liquid media) post-cure. Wet post-cure can typically be achieved during return to service, provided that the temperature ramp rate does not exceed 54°F (30°C) per hour.

5.1.1 POST-CURE FOR CHEMICAL CONTACT

Post-cure requirements for optimal chemical resistance will vary depending on service conditions. For general guidance please refer to the Chemical Resistance Chart (CRC). For specific applications please contact your Belzona representative to discuss requirements.

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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