Belzona 5891

FN10105 (HT IMMERSION GRADE)

BELZONA®
Repair • Protect • Improve

INSTRUCTIONS FOR USE

1. TO ENSURE AN EFFECTIVE MOLECULAR WELD

METALLIC SURFACES - APPLY ONLY AFTER BLAST CLEANING.

a) Brush away any loose contamination and remove dirt, oil, grease, etc., 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.
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 Sa2½ SIS 05 5900
d) After blasting, metal surfaces should be coated before any oxidation of the surface takes place.

NOTE: SALT CONTAMINATED SURFACES

The soluble salt contamination of the prepared substrate, immediately prior to application, shall 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.

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® 5891.**

3. COMBINING THE REACTIVE COMPONENTS

a) Ensure material is at a temperature of 68-85°F (20-30°C) to aid mixing and application.
b) Transfer approximately a quarter of the contents of the **Belzona® 5891** Solidifier can to the **Belzona® 5891** Base unit.
c) Mix until a uniform consistency is achieved.
d) Add the remainder of the Solidifier and mix thoroughly to a uniform streak-free material.

NOTES:

1. APPLICATION TEMPERATURE

Belzona® 5891 should not be applied at temperatures below 50°F (10°C).

2. WORKING LIFE

From the commencement of mixing, **Belzona® 5891** must be used within the times shown:

Temperature	68°F (20°C)	77°F (25°C)	85°F (30°C)	105°F (40°C)
Use all material within	45 mins	35 mins	25 mins	20 mins

3. MIXING SMALL QUANTITIES OF BELZONA® 5891

For mixing small quantities of **Belzona® 5891** use:
13 parts Base to 1 part Solidifier by weight
7.2 parts Base to 1 part Solidifier by volume

4. APPLYING BELZONA® 5891

FOR BEST RESULTS
Do not apply when:-

i) The substrate temperature is below 50°F (10°C), above 104°F (40°C) or the relative humidity is above 85%.
ii) The substrate temperature is less than 5°F (3°C) above dewpoint.
iii) Rain, snow, fog or mist is present.
iv) There is moisture on the metal surface or is likely to be deposited by subsequent condensation.
v) The working environment is likely to be contaminated by oil or grease from adjacent equipment or from smoke from kerosene heaters.

Belzona® 5891 may be applied by brush or airless spray and as a 2 or 1 coat system.

4.1 COVERAGE RATE

Recommended number of coats	2	1
Target thickness 1st coat	14 mils (350 microns)	20 mils (500 microns)
Target thickness 2nd coat	14 mils (350 microns)	N/A
Minimum total DFT	16 mils (400 microns)	16 mils (400 microns)
Maximum total DFT	Only limited by sag resistance	Only limited by sag resistance
Practical coverage rate 1st coat	28 sq.ft (2.6 m²)/litre	20.5 sq.ft (1.9 m²)/litre
Practical coverage rate 2nd coat	28 sq.ft (2.6 m²)/litre	N/A
Theoretical coverage rate to achieve minimum recommended system thickness	27 sq.ft (2.5 m²)/litre	27 sq.ft (2.5 m²)/litre

In practice many factors influence the exact coverage rate achieved. On rough surfaces the practical coverage rate will be reduced. Application at low temperatures will also reduce practical coverage rates further.

4.2 BRUSH APPLICATION

a) Apply the coating in one operation without interruption.
b) Use a brush or applicator to initially wet out the substrate before building up to the full coating thickness.
c) Use a wet film thickness gauge to regularly check that the correct film thickness is being achieved.
d) Finish application with a brush to obtain uniform coverage.
e) Pay careful attention to coating detail areas such as brackets, edges and corners.
f) Ensure adequate lighting is available to prevent misses.

4.3 SPRAY APPLICATION

Suitable areas may be coated by spray.
Belzona® 5891 must be sprayed using heated airless equipment. Either a single airless pump or plural equipment capable of metering accurately and mixing the two components can be used.
See **"Instructions for spraying Belzona® solvent free coatings".**

Mix ratio **7.2:1 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**

Publication No. 26-05-15-01

Only commence mixing once the spray equipment has been assembled and thoroughly tested - see **"Instructions for spraying Belzona® solvent free coatings".**
Note: When using plural spray equipment it may be necessary to heat Base to 122°F (50°C) to enable it to be pumped effectively.

A APPLICATION AS A 2 COAT SYSTEM

a) Apply the first coat of **Belzona® 5891** and allow to harden for at least 16 hours.
b) Before carrying out repairs or applying a second coat, wash the surface of the **Belzona® 5891** with a warm detergent solution to remove any amine bloom that has formed. Rinse with clean water and allow to dry.
c) Carefully abrasive blast to produce a frosted appearance, free of all gloss, with a target profile of 1.5 mils (40 microns).
d) Apply a second coat of **Belzona® 5891** as in a) above.

B. APPLICATION AS A 1 COAT SYSTEM

Where application conditions permit, **Belzona® 5891** may be applied as a single coat. Apply the **Belzona® 5891** directly on to the prepared surface.

4.4 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 has hardened, carry out a thorough visual inspection to confirm freedom from pinholes and misses, and to identify any possible mechanical damage.
c) Spark testing can be carried out to confirm coating continuity. A DC voltage of 2,000 volts is recommended to confirm that minimum coating thickness of 16 mil (400 microns) has been achieved.

4.5 REPAIRS

Any misses, pinholes or mechanical damage found in the coating should be repaired as in **A** b) to d) above.

4.6 CLEANING

Mixing tools should be **cleaned immediately after use** with **Belzona® 9111** or any other effective solvent e.g. MEK. Brushes, injection guns, spray equipment and 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

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)	30 hrs	post-cure required	30 hrs	-
68°F (20°C)	12 hrs	post-cure required	12 hrs	5 days
86°F (30°C)	4 hrs	24 hrs	4 hrs	8 hrs
104°F (40°C)	2½ hrs	8 hrs	2½ hrs	4 hrs

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).

POST-CURE

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

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.

If immediate exposure to aggressive media is to occur prior to achieving a 'full service' cure, post-cure is recommended. Please contact your Belzona representative to discuss specific requirements.

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

POTABLE WATER

WRAS

For use in potable water the **Belzona® 5891** must be applied and cured at temperatures above 68°F (20°C). In addition the surface must be washed for at least 1 hour with clean water and this water discarded prior to putting into service.

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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