Belzona 1521

(HTS1)

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 SP10
Swedish Standard SA2½ SIS 05 5900
d) After blasting, metal surfaces should be coated before any contamination 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**. Before application of **Belzona® 1521** allow to harden in accordance with the relevant Instructions For Use before grit blasting to create a frosted surface free from any gloss with a target profile of 40 microns.

All detail areas such as welds, brackets, baffles, deflectors etc. that cannot be effectively sprayed should be coated with **Belzona® 1591**. See relevant Instructions For Use for details.

3. COMBINING THE REACTIVE COMPONENTS FOR HEATED AIRLESS SPRAY

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

WORKING LIFE
From the commencement of mixing, **Belzona® 1521** must be used within the times shown:

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

4. APPLYING BELZONA® 1521

FOR BEST RESULTS
Do not apply when:-

i) The substrate temperature is below 41°F (5°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.

4.1 EQUIPMENT REQUIRED

Belzona® 1521 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	**9.5:1 by volume**
Tip Temperature	**104-122°F (40-50°C)**
Tip pressure (minimum)	**2500 psi (172 bars)**
Tip size	**17-23 thou (0.43-0.58mm)**
DO NOT THIN	
Cleaning solvent	**Belzona 9121, MEK or Acetone**

4.2 COVERAGE RATES

Recommended number of coats	2	1
Target thickness 1st coat	18 mils (450 microns)	30 mils (750 microns)
Target thickness 2nd coat	14 mils (350 microns)	N/A
Minimum total DFT	20 mils (500 microns)	20 mils (500 microns)
Maximum total DFT	40 mils (1000 microns)	40 mils (1000 microns)
Practical coverage rate 1st coat	21.5 sq.ft (2 m²)/litre	12.9 sq.ft (1.2 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	21.5 sq.ft (2 m²)/litre	21.5 sq.ft (2 m²)/litre

Actual coverage rates obtained will vary according to equipment choice, application technique, component size and application

environment. Interruption to application will significantly increase wastage.

Note
Total system thickness in stripe coat or repair areas should not exceed 80 mils (2000 microns).

4.3 APPLICATION AS A 2 COAT SYSTEM.
Where it is not possible to achieve a uniform coating at the required thickness, the material should be applied as a two coat system. Apply the first coat of **Belzona® 1521** at the recommended coverage rate and allow to harden for at least 16 hours.

Before applying a second coat, wash the surface of the **Belzona® 1521** with a warm detergent solution to remove any amine bloom that has formed. Rinse with clean water and allow to completely dry. Carefully grit blast to create a frosted surface free from any gloss with a target profile of 40 microns.

Apply the second coat of **Belzona® 1521.**

4.4 APPLICATION AS A 1 COAT SYSTEM.
Where application conditions permit, **Belzona® 1521** may be applied as a single coat at the recommended coverage rate.
NOTE:
Ensure maximum thickness of 40 mils (1000 microns) is not exceeded.

4.5 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 2,400 volts is recommended to confirm that a minimum coating thickness of 20 mil (500 microns) has been achieved.

4.6 REPAIRS
Any misses, pinholes or mechanical damage found in the coating should be repaired as follows. Wash the surface of the **Belzona® 1521** with a warm detergent solution to remove any amine bloom that has formed. Rinse with clean water and allow to completely dry. Carefully grit blast or abrade to create a frosted surface free from any gloss with a target profile of 1.5 mils (40 microns) before applying further product. **Belzona® 1591** may be used for localized repairs.

4.7 CLEANING
Mixing tools should be cleaned immediately after use with **Belzona® 9111** or any other effective solvent e.g. MEK or Acetone. Brushes spray equipment and other application tools should be cleaned using a suitable solvent such as MEK or Acetone.

5. COMPLETION OF THE MOLECULAR REACTION

The coating should be allowed to cure as detailed below.

Temperature	Hard for inspection or dry heat post curing	Machining and/or light loading	Full mechanical, loading, immersion or pre-steam post curing
50°F/10°C	20 hours	32 hours	4 days
59°F/15°C	15 hours	24 hours	3 days
68°F/20°C	10 hours	16 hours	2 days
77°F/25°C	7½ hours	12 hours	1½ days
86°F/30°C	5 hours	8 hours	24 hours
104°F/40°C	3 hours	6 hours	18 hours

If the service temperature is above 140°F (60°C) post cure will generally be unnecessary as the coating will achieve full cure in service.

The coating should be post cured if :-
a) The service temperature is below 140°F (60°C).
b) The service temperature is achieved at a faster rate than 55°F (30°C) per hour.
c) If immediate exposure to aggressive media will occur.
d) If coated equipment is to be transported.
e) If coated equipment is not to be returned to service within 7 days.

POST CURE

If post-cure is required then allow coating to cure as detailed above before heating the coating as below.

Post cure temperature	Cure time
140°F (60°C)	16 hours
158°F (70°C)	8 hours
176°F (80°C)	4 hours
194°F (90°C)	2 hours
212°F (100°C)	1 hour

The post cure temperature should not exceed 212°F (100°C). Temperature should not be increased at more than 55°F (30°C) per hour.

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

ISO 9001:2008
Q 09335
ISO 14001:2004
EMS 509612
Manufactured under an ISO 9000 Registered Quality Management System

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