Belzona 5721 (1kg Unit)

FN10237

BELZONA®
Repair • Protect • Improve

INSTRUCTIONS FOR USE

1. TO ENSURE AN EFFECTIVE MOLECULAR WELD

BELZONA 5721 HAS BEEN SPECIFICALLY DESIGNED TO REPAIR AND PROTECT THE LEADING EDGE OF WIND TURBINE BLADES. BELZONA 5721 SHOULD ONLY BE APPLIED ONTO STRUCTURALLY SOUND SURFACES.

SURFACE PREPARATION ONTO COMPOSITE BLADES
Removal of the gel coat is preferred in order to maximise the performance of the **Belzona® 5721**. On many blades the adhesion of the gel coat to the composite will be relatively poor. In this case, **it is recommended that the gel coat is completely removed**, and the surface prepared as follows:

a) Roughen surfaces to completely remove the gel coat and abrade back to the composite avoiding exposing the fibres. This can be completed using a mechanical sander with coarse paper e.g. orbital sander. Alternatively, other power tools or frost-blasting technique can also be used.

PREPARING THE TRANSITIONAL AREA
b) When applying as in a), a pre-determined section of the existing gel coat surrounding the application area must also be prepared to provide an overlap for the **Belzona® 5721**. This can also be completed using a mechanical sander with coarse paper e.g. orbital sander.
c) Brush away loose contamination and if necessary degrease with **Belzona® 9111** (Cleaner/Degreaser) or any other effective cleaner which does not leave a residue e.g. methyl ethyl ketone (MEK).

ALTERNATIVELY, IF THE GEL COAT CANNOT BE REMOVED
d) Where full removal of the gel coat is not possible, abrade the surface using a mechanical sander with coarse paper (P40-P80) e.g. orbital sander to completely roughen the surface.
e) Brush away loose contamination, and if necessary, degrease with **Belzona® 9111** (Cleaner/Degreaser) or any other effective cleaner which does not leave a residue e.g. methyl ethyl ketone (MEK).
f) Mask out the application areas using a suitable tape, not exceeding the prepared surface.
g) Apply **Belzona® 2911** prior to overcoating with **Belzona® 5721**. A brush should be used as a stipple to ensure a practical coverage rate of 1.25 m^2 (13 sq.ft) per unit. **Belzona® 2911** application and cure conditions as follows:
The **Belzona® 2911** must be touch dry before overcoating with **Belzona® 5721**. At 50% relative humidity, the touch dry state will be achieved after the times given below:

Temperature	Touch Dry Time
10°C (50°F)	90 mins
20°C (68°F)	45 mins
30°C (86°F)	25 mins
40°C (104°F)	20 mins

For lower relative humidity, the touch dry times will increase, for higher humidity they will be reduced.

Remove tape once application of **Belzona® 2911** has been completed.

Under no circumstances should application of **Belzona® 5721** take place after the maximum overcoating time of 24 hours.

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

PIT FILLING
Where required, pitting should be smoothed out with **Belzona® 5711** mixed and applied in accordance with the IFU.

Belzona® 5711 is quick curing and can be directly overcoated with **Belzona® 5721** in as little as 30 minutes at 20°C (68°F). In extreme environments e.g., 40°C (104°F) and >65% relative humidity, **Belzona® 5711** will require sanding prior to overcoating. Please refer to **Belzona® 5711** IFU for relevant overcoating times.

Defining the application area
Mask out the application area using a suitable tape dividing the area into manageable sections to allow for periodic removal of tape throughout the application process.

2. COMBINING THE REACTIVE COMPONENTS

a) Transfer the entire contents of the Solidifier container into the Base container.
b) Mix thoroughly together for a minimum of two minutes to achieve a uniform material.

NOTES:
1A. POT LIFE
Temperature has only a limited effect on the pot life of the mix, pot life will predominantly be affected by relative humidity (RH). From the commencement of mixing, **Belzona® 5721** must be used within the times shown below:

	30% RH	50% RH	65% RH	80% RH
At 5-40°C (41-104°F) use all material within	50 min	40 min	30 min	20 min

Once mixed, re-apply the lid to extend pot life of the product whilst not in use. Alternatively, **Belzona® 5721** could be transferred into a suitable cartridge to extend pot life and increase ease of application. At 20°C (68°F) this could be up to 3 hours when transferred to a sealed cartridge. This is particularly recommended in highly humid environments.

1B. APPLICATION TIME
During application the product will surface dry rapidly therefore the working life of the material will be reduced. Please see table below for guidance:

Surface Skinning at 500 microns (20 mils) thickness

	30% RH	50% RH	65% RH	80% RH
5°C (41°F)	20 min	16 min	14 min	12 min
10°C (50°F)	18 min	14 min	12 min	10 min
20°C (68°F)	14 min	11 min	9 min	7 min
30°C (86°F)	11 min	8 min	6 min	4 min
40°C (104°F)	7 min	4 min	3 min	3 min

2. VOLUME CAPACITY OF MIXED BELZONA® 5721
653 cm^3 (39.8 cu.in.) per 1Kg unit

3. APPLYING BELZONA® 5721

FOR BEST RESULTS
Do not apply when:
i) The temperature is below 5°C (41°F) or the relative humidity is above 85%.
ii) Rain, snow, fog or mist is present.
iii) There is moisture or ice on the 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.
v) Wind speed is greater than 8 m/s (18 mph).

COVERAGE RATES

Target thickness per coat	500 microns (20 mils)
Recommended minimum thickness per coat	400 microns (16 mils)
Recommended maximum thickness per coat	600 microns (24 mils)
Theoretical coverage rate per coat	1.3 m² (14 sq.ft.)/kg

For coating thicknesses greater than 500 microns (20 mils), multiple coats are required.

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 composite the practical coverage rate will be reduced.

a) **FIRST COAT**
i) APPLICATION FROM MIXED UNIT
Apply the **Belzona® 5721** directly on to the prepared surface with a good quality long bristled brush at the recommended coverage rate. If desired, a former can be used to smooth the surface. This needs to be done immediately after brush application of the product and prior to removal of previously applied tape.

ii) APPLICATION FROM CARTRIDGE
Following transfer of mixed material to a single component cartridge, apply beads of **Belzona® 5721** directly on to the prepared surface and spread out evenly over the application area using appropriate former e.g., closed-cell foam former at the recommended coverage rate.

b) **SECOND COAT**
If required, apply a further coat of **Belzona® 5721** as in (a) above ensuring masking tape is reapplied before application. Under all application conditions, the minimum overcoat time will typically be 30 minutes. The first coat must not be left longer than 24 hours before overcoating. Should this occur, then the surface should be thoroughly abraded to remove gloss before commencing application.

NOTES
1. **Do not apply Belzona® 5721 outside of the prepared area.**
2. **Maintain a wet edge by constantly working away from the starting point.**
3. **Apply evenly over the surface and avoid overbrushing the product and disturbing the material during cure as the product will surface dry rapidly.**
4. **Higher humidity will cause the product to surface dry more rapidly.**
5. **When not in use, the brush should be placed within the unit ensuring bristles are fully covered by mixed product and not allowed to air dry.**
6. **Due to the fast cure nature of the product, the tape should be removed in sections as soon as possible after the application of the coating.**
7. **A new brush is required for each mix of Belzona® 5721.**

INSPECTION
a) During application 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 (refer to “Touch Dry” column in section 4), carry out a thorough visual inspection to confirm freedom from pinholes and misses, and to identify any possible mechanical damage. Repairs to be carried out as required.

CLEANING
Mixing tools should be cleaned immediately after use with **Belzona® 9111** or any other effective solvent e.g. Methyl ethyl ketone (MEK).

4. COMPLETION OF THE MOLECULAR REACTION

Film thickness and environmental conditions will affect the cure. For a 500 microns film, allow **Belzona® 5721** to solidify as below before subjecting it to the conditions indicated.

Temperature	Touch Dry (Overcoat)	Hard Dry (Movement and light loading)	Full Cure (Return to service)
5°C/41°F	30 - 45 mins	3 hours	6 hours
10°C/50°F		3 hours	6 hours
20°C/68°F		2 ½ hours	5 hours
30°C/86°F		2 ½ hours	5 hours
40°C/104°F		2 hours	4 hours

For thicker sections, cure times will be extended.

5. SHELF LIFE

Belzona® 5721 shall have a shelf life of 3 years from date of manufacture when stored in the original unopened containers between 5 °C (41 °F) and 30 °C (86 °F).

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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