



TYPE APPROVAL CERTIFICATE

형식 승인증서

Certificate No. : LDN22987-CH001 **Date of Approval** : 28th May, 2008.

Product : Synthetic Repair Compounds & Resins

Manufacturer : Belzona Polymeric Limited
Claro Road, Harrogate, HG1 4DS, United Kindom

Product Description : Type of Compound : Belzona 1111, Belzona 1311,
Belzona 1321, Belzona 1341

" See Appendix 1 "

* Applicant : Hyun Woo Union Trading.
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Kangnam-gu, Seoul, Korea

Approval Condition : 1. This approval is granted on the basis of Test Report No. TAK-018534 issued by Korea Testing & Research Institute.
2. The packing is to be marked with manufacturer's name and type designation on a suitable position.
3. Individual Product Certification is not required.
" See Appendix 1 "

THIS IS TO CERTIFY that the above-mentioned product has been approved in accordance with the relevant requirement of this Society's Rules and / or of the recognized standards as follows and entered in the "List of Approved Manufacturers and Type Approved Equipment".

In accordance with Manufacturer's Standard and Instructions.

This Certificate is valid until 27th May, 2013.
Issued at Daejeon, Korea on 28th May, 2008.



한국선급
KOREAN REGISTER OF SHIPPING

(Signature)

(Lee Woon-ho)

General Manager of
Materials and Equipment Team

Note : 1 : The approval will be automatically suspended and the Certificate become invalid from the expiry date of the Certificate in the event that the extension has not been granted or is not under attendance for completion of the renewal survey.
2 : The manufacturer should notify this Society of any modification or changes that may affect the validity of this Certificate.

Appendix 1

Product Description and/or Approval Condition

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Product Descriptions :

1. Belzona 1111 (Super Metal)

1) Applications : Engineering grade repair system for repairing and rebuilding machinery and equipment.

- Shafts, Hydraulic rams, Bearing housings, Keyways, Engine blocks, Casings, Pipes, Tanks, Flange faces, Waterjet housing, Tail pipe.

2) Mixed Properties at 20°C:

- Mixing Ratio by Weight (Base : Solidifier)	5 : 1
- Mixing Ratio by Volume (Base : Solidifier)	3 : 1
- Mixed Density	2.5 g/cm ³
- Working Life of mixed material at 25°C	15 min.

2. Belzona 1311 (Ceramic R-Metal)

1) Applications : Repair system designed for rebuilding metals damaged by erosion-corrosion.

- Pumps, Heat exchangers, Water box ends, Division bars, Valves, Propellers, Kort nozzles, Bow thrusters, Pipe elbows, T-pieces, Waterjet housing, Tail pipe.

2) Mixed Properties at 20°C:

- Mixing Ratio by Weight (Base : Solidifier)	5 : 1
- Mixing Ratio by Volume (Base : Solidifier)	3 : 1
- Mixed Density	2.36 ~ 2.52 g/cm ³
- Working Life of mixed material at 25°C	15 min

3. Belzona 1321 (Ceramic S-Metal)

1) Applications : Repair system designed for surfacing metals attacked by erosion-corrosion.

- Pumps, Heat exchangers, Water box ends, Division bars, Valves, Propellers, Kort nozzles, Bow thrusters, Pipe elbows, T-pieces, Waterjet housing, Tail pipe.

2) Mixed Properties at 20°C:

- Mixing Ratio by Weight (Base : Solidifier)	11 : 1
- Mixing Ratio by Volume (Base : Solidifier)	4 : 1
- Mixed Density	2.35 ~ 2.45 g/cm ³
- Working Life of mixed material at 25°C	30 min

4. Belzona 1341 (Supermetalgilde)

1) Applications : A coating system for improving the efficiency of fluid handling systems and protecting metals from the effects of erosion-corrosion.

- Pumps, Heat exchangers, Water boxes, Valves, Water tanks, Pipes, Waterjet housing, Tail pipe.

2) Mixed Properties at 20°C:

- Mixing Ratio by Weight (Base : Solidifier)	10 : 7
- Mixing Ratio by Volume (Base : Solidifier)	1 : 1
- Mixed Density	1.39 g/cm ³
- Working Life of mixed material at 25°C	30 min

5. Approval Condition :

1) The repair activities which affect or may affect classification to be reported in advance to KR for review/approval.

2) The above mentioned applications are for temporary repairs in principle.

6. Approved documents : WATER-JET REPAIR AND COATING BEL-JRC-100 9/20/99. < End. >