

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Epoxy Systems**

with type designation(s)
Belzona® 1311 (Ceramic R-Metal)

Issued to

Belzona Polymerics Ltd.
Harrogate, NY, United Kingdom

is found to comply with

DNV GL rules for classification – Ships
GL Rules for Classification and Construction VI - Additional Rules and Guidelines Part 9 -
Materials and Welding Chapter 5 - Guidelines for the Approval of Reaction Plastics and
Composite Materials for the Seating and Repair of Components

Application :

Machinable, paste grade system for repair of components damaged by erosion-corrosion and protection against the effects of corrosion and erosion

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.

Issued at **Hamburg** on **2018-10-22**

This Certificate is valid until **2023-06-30**.

DNV GL local station: **Manchester**

for **DNV GL**

Approval Engineer: **Joachim Rehbein**

.....
Thorsten Lohmann
Head of Section

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid. The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.



Job Id: **262.1-028818-1**
Certificate No: **TAK00001DB**

Product description

BELZONA® 1311 (Ceramic R-Metal): Two - component epoxy resin with silicon steel alloy and ceramic reinforcements

Application/Limitation

Machinable, paste grade system for repair of components damaged by erosion-corrosion and protection against the effects of corrosion and erosion.

The application has to be in accordance with the work instruction of manufacturer and the rules of classification.

The application has to be carried out under supervision of the resin manufacturer or an authorized representative recognized by the Society.

This approval does not relieve from material test and final testing of finished product, as far as required. Every test on the basis of this approval has to be notified in written form to this Society.

Any application which may affect the class of the vessel has to be announced and agreed with the Society.

Acknowledged production site:

Belzona Polymerics Ltd.; Claro Road, Harrogate; HG1 4DS; United Kingdom

Type Approval documentation

Tests carried out

According to type approval documentation

Marking of product

The product is to be marked with manufacturer's name or trademark and type number identification.

Periodical assessment

The scope of the periodical assessments is to verify that the conditions stipulated for the certification are in compliance with the Type Approval documentation and no alterations are made to the product design or choice of materials.

Periodical assessments will be carried out bi-yearly(Certificate Retention) and at renewal after 5 years (Certificate Renewal).

When possible, this assessments may be harmonised with normal surveys for product certification and / or other surveys and audits carried out.

END OF CERTIFICATE