

# Pump Components Repaired and Protected with Belzona Systems

ID: 10177

Industry: Other  
Application: CEP-Centrifugal Pumps  
Substrate: Carbon steel  
Products: Belzona 1311 (Ceramic R-Metal), Belzona 1331, Belzona 9111 (Cleaner Degreaser)

Customer Location: Thailand  
Application Date: October 2025

## Problem

Severe corrosion had been identified on the pump casing and impeller, highlighting the need for a timely repair solution and corrective action to prevent further deterioration and avoid a costly full pump replacement. Having previously used Belzona on other pump units, the customer contacted Belzona to provide a solution to restore the pump's condition and extend its service life.



Corrosion and erosion damage on the lower pump casing.

Damage to the impeller caused by erosion and corrosion.

Surface preparation was carried out by sandblasting before the application of Belzona products.

The repair was completed and followed by a pinhole inspection before returning the pump parts to service.

## Application Situation

The pump parts were transported to the workshop of the Belzona Authorised Distributor in Thailand for repair. Due to the significant surface loss observed in several areas of the pump components, the proposed solution involved the use of a Belzona paste-grade material to rebuild the original surface profile, followed by the application of a Belzona coating grade to provide additional protection against erosion and corrosion during service.

## Application Method

1. The carbon steel surfaces of the pump casing and impeller were prepared by sand blasting to achieve a minimum surface profile of 75 microns and a surface cleanliness of Sa 2.5.
2. Loose contaminants were removed by brushing. The surface profile was then verified using Testex Tape and a surface profile gauge.
3. The surfaces were cleaned using Belzona 9111 (Cleaner/Degreaser) to ensure the salt contamination level was below  $4 \mu\text{g}/\text{cm}^2$ .
4. Once the required surface profile had been achieved, the first coat of Belzona 1331 was applied at a dry film thickness (DFT) of 250 microns.
5. Belzona 1311 (Ceramic R-Metal) was used to rebuild areas where severe metal loss had occurred.
6. A second coat of Belzona 1331 was then applied at a DFT of 250 microns.

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ISO 9001:2015  
FS 695214  
ISO 14001:2015  
EMS 695213

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7. After curing, the coating thickness was verified using a Phynix DFT tester.
8. A PCWI low voltage holiday detector was used to perform pinhole inspection.

## Belzona Facts

Belzona was selected based on the customer's previous positive experience with Belzona repair solutions on pump components, which had demonstrated proven performance and reliability. As a result, the customer agreed to proceed with the repair system proposed by the Belzona Authorised Distributor.

The solution was proposed as a system to rebuild the surface profile using Belzona 1311 (Ceramic R-Metal), a ceramic-filled material designed to resist erosion and corrosion, followed by Belzona 1331 to protect the immersed surfaces against further erosion and corrosion.

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