

# Belzona Repair Solution for Split Case Pump and Pump Impeller

ID: 10179

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: June 2025

## Problem

The pump components were damaged due to prolonged exposure to erosion and corrosion during service. This resulted in surface degradation, metal loss, and an uneven internal profile, which negatively affected efficiency and overall pump performance.

Without corrective action, the continued deterioration could have led to increased energy consumption, reduced operational reliability, and premature failure of the pump components.

Surface rebuilding and protective coating were required to restore the original profile and provide long-term resistance against erosion, corrosion, and to enhance operational performance and service life.



Corroded surface on lower casing

Pump impeller damaged by erosion&corrosion

Pinhole inspection on pump casing after the application was completed

Pinhole inspection on pump impeller after the repair was completed

## Application Situation

Sandblasting was required for proper surface preparation to achieve optimal results. Therefore, the pump components were disassembled and transported to the Belzona Authorised Distributor's workshop in Thailand, where all necessary repair work could be carried out. Once the repair was completed, the pump components were put back into service, saving the customer from the cost of replacing the entire pump unit.

## Application Method

1. Carbon steel surface on pump casings and impellers was prepared by sand blasting and cleaned with Belzona 9111 (Cleaner/Degreaser).
2. A minimum profile at 75 microns and surface cleanliness by standard Sa 2.5 was expected. TESTEX Tape and surface profile gauge were used to measure the profile.
3. Salt containment on the surface was measured to confirm that the salt content was below  $4 \mu\text{g}/\text{cm}^2$ .
4. Once the surface was ready, Belzona 1331 was applied as the first coat and to fill the holes.
5. For any severely metal loss areas, Belzona 1311 (Ceramic R-Metal) was used to fill.
6. Apply the second coat of Belzona 1331, a two-component fluid grade system for protecting immersed surfaces of machinery and equipment suffering from erosion-corrosion.

For more examples of Belzona Know - How In Action, please visit <https://khia.belzona.com>

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

Belzona products are  
manufactured under an ISO  
9000 Registered Quality  
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7. Allow the product to cure before transporting the pump components back to the customer's premises.

## Belzona Facts

Belzona 1311 (Ceramic R-Metal) is a ceramic-filled erosion- and corrosion-resistant composite specifically designed to rebuild areas of metal loss. Its excellent adhesion to carbon steel and resistance to aggressive media make it ideal for filling voids and restoring the original profile of pump parts exposed to corrosive service conditions.

To provide long-term protection, Belzona 1331 was specified as the protective coating system. This material can be applied by both brush and spray, allowing flexibility during application while achieving a high-build without sagging. Once cured, it forms a durable barrier that protects pump components from erosion and corrosion, helping to improve operational performance and extend service life.

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