

# BELZONA SOLUTIONS FOR REBUILDING AND COATING OF TUBE SHEET AND END COVER OF THE HEAT EXCHANGER

ID: 9811

Industry: Water / Wastewater  
Application: HEX-Heat Exchangers  
Substrate: Carbon steel  
Products: Belzona 1111 (Super Metal), Belzona 5892

Customer Location: Dubai, United Arab Emirates  
Application Date: February 2025

## Problem

The heat exchanger tube sheet and cover suffered from metal loss and severe pitting as a result of erosion and corrosion. The customer sought a solution to repair the damage and protect the equipment from future erosion and corrosion using Belzona.



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The front surfaces of the tube sheet and cover (including the internal sides) were blast-cleaned to the required standards (Sa 2.5 with a minimum surface roughness of 75 µm), followed by desalination and re-blasting.

Pipes were plugged, and damaged areas were sealed with a 3–5 mm thick layer of Belzona 1111.

Belzona 5892 was then applied in two sequential coats, achieving a total dry film thickness (DFT) of 500 µm.

## Application Situation

Belzona 1111 was used to create a solid, uniform surface that does not shrink or expand during curing, ensuring tight joints around the tubes. For long-term protection, Belzona 5892—a two-component, solvent-free coating designed for high-temperature performance—was applied. It offers excellent protection for both metallic and non-metallic surfaces under immersion conditions at operating temperatures up to 203°F (95°C) and can withstand steam-out conditions up to 410°F (210°C).

## Application Method

The application was carried out in accordance with Belzona Know-How System Leaflets HEX-1 and HEX-2, ensuring compliance with industry best practices for corrosion protection and equipment longevity. The front surfaces of the tube sheet and cover (including the internal sides) were blast-cleaned to the required standards (Sa 2.5 with a minimum surface roughness of 75 µm), followed by desalination and re-blasting. Pipes were plugged, and damaged areas were sealed with a 3–5 mm thick layer of Belzona 1111. After curing, the plugs were sanded and removed from both sides. Belzona 5892 was then applied in two sequential coats, achieving a total dry film thickness (DFT) of 500 µm.

## Belzona Facts

The repair using Belzona 1111 and Belzona 5892 was successfully completed within the client's required lead time of 2 days.

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

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