

# Belzona Restores HEX Tube Sheet to Prevent Leak

ID: 10136

**Industry:** Chemical & Petrochemical

**Customer Location:** Greater Houston, TX

**Application:** HEX-Heat Exchangers

**Application Date:** September 2024

**Substrate:** Carbon steel

**Products:** Belzona 1391T, Belzona 1511 (Super HT-Metal), Belzona 9111 (Cleaner Degreaser)

## Problem

The customer has a boiler that is used to heat up fluid at their site for their process. The asset is over 20 years old and the tube sheet has eroded & corroded over time. The tubes are protruding from the sheet about a .25" and some tubes were needed to be plugged because they are leaking & inoperable. Replacement of this asset was not possible due to time constraints and the large financial burden to replace. They were looking for a repair to be made in place and add life to the asset.



After abrasive blasting  
SSPC-SP10



Pit fill and first coat applied of  
1391T. Corks still in place.



Corks removed and final touch  
ups completed.



Image is after 1 year of service.  
Still in good condition.

## Application Situation

The Belzona solution offered a quick 2 day fix that extended the life of the boiler tube sheet. The tubes were protruding off the tube sheet and the Belzona paste helped to seal the tubes and prevent leaking. The Belzona coating provided long term erosion/corrosion protection. The cost of replacing the asset would be over \$100k and the Belzona solution was a small fraction of that. The time for the asset to be down to replace it would be over a week and downtime would add more cost. The Belzona repair was done in place and allowed the asset to get back into service quickly and efficiently with out the added cost & downtime.

## Application Method

1. Customer opened and drained the asset. They applied a fan on the tube sheet to dry the tubes.
2. Corks were applied to the tubes. We abrasive blasted the tube sheet per SSPC-SP10. Wiped it clean with Belzona 9111 degreaser and let dry.
3. Belzona 1511 was used to pit fill the tube sheet.
4. Belzona 1391T was applied in a two coat system.
5. Product allowed to cure and returned to service.

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  
Management System.

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## Belzona Facts

The Belzona solution saved the customer downtime and replacement cost. After 1 year we were able to open and inspect the coating. The Belzona was still in good condition. Originally they were going to use the Belzona to buy them time to get a new asset, but after inspecting the Belzona at the 1 year mark they plan to continue as is. The customer did apply another layer of coating themselves, to touch it up since it was open, before returning it back to service.

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