

# BELZONA REPAIRS LEAKING HEAT EXCHANGER TUBE SHEETS

ID: 1622

**Industry:** Marine  
**Application:** HEX-Heat Exchangers  
**Substrate:** Steel & Copper  
**Products:** \* Belzona® 1311 (Ceramic R-Metal) ,  
\* Belzona® 1321 (Ceramic S-Metal) ,

**Customer Location:** Maritime repair agent, Bulgaria  
**Application Date:** December, 2010

## Problem

Severe erosion and galvanic corrosion between copper tubes and steel tube sheet.



## Photograph Descriptions

- \* The severe damage clearly evident ,
- \* After grit blasting, the eroded tube sheet was rebuilt with Belzona® 1311 ,
- \* The coolers after application of Belzona® 1321 ,
- \* Further air coolers were also repaired ,

## Application Situation

Various oil & air coolers of marine vessel

## Application Method

Applications were carried out in accordance with Belzona Know-How System Leaflets HEX-1 and HEX-3.

## Belzona Facts

Customer chose the Belzona method because alternatives were either expensive replacement of the equipment or time consuming machining repair to replace the tube sheets. The repair with Belzona was completed in three days and almost ten times lower in cost than replacement.

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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