

BELZONA SOLUTIONS FOR HEAT EXCHANGERS

CUSTOMER

Burbank, CA

APPLICATION DATE

December 2020

APPLICATION SITUATION

Shell and tube heat exchangers, also referred to as chillers, are a vital part of any heating or air conditioning system. Failure to quickly protect these units allows galvanic corrosion to take place, resulting in wastage and metal loss on the tube sheet around the coolant tubes. Left untreated, the loss of metal can cause leakage of the coolant and contamination of the chilled water. Corrosion is not restricted to the tube sheet, the water box and end covers can also be affected. In particular, corrosion in division bars and seal faces can lead to leakage and loss of efficiency, as well as the inability to maintain the desired working environment in buildings.

PROBLEM

If the corrosion allowance is exceeded and gaps appear, recirculation can occur, leading to efficiency loss. In addition, the processed fluid can erode the metal further, accelerating degradation if corrosion is already present.

PRODUCTS

Belzona 1311 (Ceramic R-Metal)

Belzona 1321 (Ceramic S-Metal)

SUBSTRATE

Steel

APPLICATION METHOD

The affected section is rebuilt using Belzona's two-component repair composites. The paste grade material Belzona 1311 rebuilds the substrate to its original tolerances, while the fluid grade system Belzona 1321 (Ceramic S-Metal) provides a layer of durable protection. This cold-applied repair process bypasses the need of hot work that would leave the substrate susceptible to further damage. Belzona polymeric technology isolates the dissimilar metals, preventing further galvanic corrosion. The tough repair and coating system also protects the chiller against the effects of erosion and, as a result, increases asset life and efficiency while avoiding replacement. Belzona materials are easy and quick to apply by hand, reducing downtime and hazards during application.

BELZONA FACTS

The Belzona solution not only restores the original tube sheet profile, but also creates a smooth tube sheet face flush with the tube ends, leading to reduced turbulence and greater efficiency. Water boxes and end covers can also be repaired and protected.

PICTURES

1. Corroded tube Sheet
2. Blasted Tube Sheet
3. Repaired and Coated
4. Final Results of Repair



1.



2.



3.



4.

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

ISO 9001:2008
Q 09335
ISO 14001:2004
EMS 509612

Belzona products are
manufactured under an ISO
9000 Registered Quality
Management System.

www.belzona.com

Copyright © Belzona International Limited 2020


BELZONA[®]
Repair • Protect • Improve