

Belzona helps to rebuilding and coating the Chiller with 1111 and 1321

ID: 9763

Industry: Commercial Facilities

Customer Location: Saudi arabia

Application: HEX-Heat Exchangers

Application Date: February 2025

Substrate: Carbon steel

Products: Belzona 1111 (Super Metal),Belzona 1321 (Ceramic S-Metal)

Problem

The customer was experiencing corrosion and erosion on the tube sheet, waterbox, and covers. The previously applied coating was unsuitable for the operating environment and failed to prevent damage. As a result, the customer sought a durable coating solution capable of withstanding corrosion and erosion while repairing internal tube damage without the need for welding.



Tubesheet face before blasting and coating

Tubesheet face after blasting

After blasting, significant metal loss was evident on the tubesheet face, requiring rebuilding with Belzona 1111

Final stage after Belzona rebuilding and coating

Application Situation

Welding the tubesheet would be extremely costly and time-consuming due to the need for dismantling, making it an impractical option. Additionally, welding could compromise the integrity of the pipes and lead to further corrosion issues. Instead, we offered a cost-effective, cold-applied solution as an alternative to welding. This solution requires no dismantling and can be completed on-site in just 4 days.

Application Method

We began by blasting the surface with coal slag grit to achieve a minimum 75 µm profile and near white metal cleanliness. Next, we rebuilt the surface using Belzona 1111 (Super Metal) to fill in the pitting and repair the metal loss on the tubesheet face and covers. Finally, we applied two coats of Belzona 1321 (Ceramic S-Metal), each with a thickness of 375 µm, to achieve a total dry film thickness (DFT) of 750 µm.

Belzona Facts

Belzona proved to be an excellent alternative to welding from the outset. It was easy to apply without the need to remove the

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chiller or send it to a workshop, saving both downtime and transportation costs. Additionally, the ceramic coating offers superior protection compared to local brands, which failed to prevent damage

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