

Belzona repairs leaks in cooling towers and extends their lifespan

ID: 9995

Industry: Heating, Ventilation & Air Conditioning

Customer Location: Al Rai

Application: HEX-Heat Exchangers

Application Date: February 2025

Substrate: Stainless-steel

Products: Belzona 2211 (MP Hi-Build Elastomer), Belzona 2221 (MP Fluid Elastomer), Belzona 2911 (Elastomer QD Conditioner), Belzona 5811 (Immersion Grade)

Problem

The cooling tower was experiencing significant leakage through the expansion joints at its base. Sealants previously applied by the client had repeatedly failed, leading to ongoing water loss and contributing to structural deterioration. This persistent leakage posed a risk to operational efficiency and threatened to drive up maintenance costs.



Surface preparation prior to Belzona systems being applied



All the existing silicon's removed



All the joints are sealed with Belzona elastomer 2211 (MP Hi-Build Elastomer) and Belzona 2221 (MP Fluid Elastomer)



Application of Belzona 5811 (Immersion Grade) was carried out to enhance the protection of the cooling tower base

Application Situation

The customer had already trialed several products, but none provided a lasting solution. Belzona conducted a successful mock-up repair on one cooling tower, which was tested for over six months under live operating conditions.

After the mock-up demonstrated long-term leak prevention and strong adhesion, the client approved Belzona for application on the remaining 24 cooling towers. This approach saved significant downtime, eliminated the need for costly replacement, and offered a long-term protective system.

Application Method

The application was carried out in situ without the need for hot work or major shutdown, ensuring safe and efficient installation as per the following steps:

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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Repair • Protect • Improve

1. Surface preparation: The cooling tower base and joints were cleaned and blasted to remove failed sealants, dirt, and contaminants.
2. Conditioning: Belzona 2911 (Elastomer QD Conditioner) was applied to ensure maximum adhesion.
3. Sealing: Joints were rebuilt and sealed using Belzona 2211 (MP Hi-Build Elastomer) and Belzona 2221 (MP Fluid Elastomer) for flexibility and resilience.
4. Protection: The base was over-coated with Belzona 5811 (Immersion Grade) to provide chemical and corrosion resistance in continuous immersion service.

Belzona Facts

Cost Savings: Avoided costly tower replacement or prolonged shutdown.

Alternatives: Previous sealants and repair products used by the client failed within a short period, proving ineffective.

Why Belzona: Belzona offered a tailor-made solution combining flexible elastomers for sealing and a long-lasting protective coating system for immersion conditions. The proven success of the mock-up trial secured client confidence, leading to large-scale approval for 24 cooling towers.

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