

Belzona Flange Face Forming - Protection for Critical Assets

The integrity of flanged connections is critical for containing fluids in piping systems. Loss of containment, whether in chemical lines carrying hydrocarbons and gases or in water distribution networks, can cause major environmental, operational, and financial consequences, as well as serious safety risks.



Trapped corrosives in flange gaps can quickly attack faces and gaskets, leading to leaks and potential system failure. Without protection, even minor corrosion can escalate into catastrophic damage.

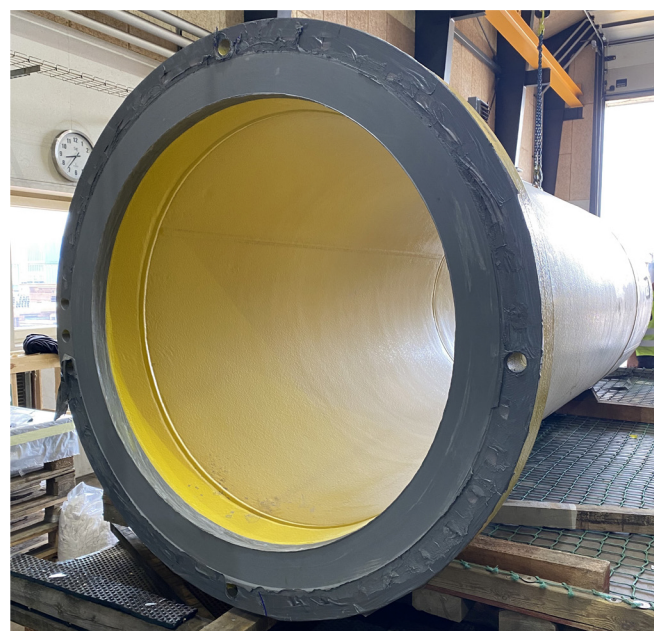
Flange Face Forming Technology

The Belzona flange face forming solution removes the need for traditional cut-and-weld repairs involving hot work. It offers a safe, simple application, ideal for emergency situations and areas with restricted access such as offshore platforms.

Applications include:

- Protecting new and in-service flange faces from corrosion
- Restoring damaged flange faces
- Isolating dissimilar metals to prevent corrosion cells
- Can be used in conjunction with Belzona nozzle insert and vessel lining solutions to form a continuous internal film, terminated outside the process environment

This approach avoids costly downtime, eliminates the risks of hot work, and extends the life of critical assets without the need for replacement.



New 121.9 cm (48 in) flange formed with Belzona 1111 (Super Metal) for corrosion protection

Company Description

Belzona manufactures **repair materials and protective coatings** for restoring and maintaining industrial machinery, equipment, buildings, and structures.

Experience

Belzona rebuilding materials are continuously used by a range of asset owners, operators and facilities managers all over the world.

High Performance

This unique system offers excellent adhesion, quick back-to service time and lasting service.

Belzona Know-How *in Action*

New Equipment Alignment

KHIA ID: 9190

Problem

An international oilfield services contractor was experiencing severe corrosion and leakage on a number of flange faces. Traditional welding based repair methods were ruled out due to strict safety requirements and concerns over long-term reliability.

As an alternative, Belzona's flange face technology was proposed. After reviewing proven case studies and previous successful applications, the contractor approved the solution, confident it would deliver a safe, high-quality, and lasting repair.

Solution

The flange faces were grit blasted to Sa 2.5 with a with a 75 µm (3 mils) profile before a dimension-matched former was prepared and treated with Belzona 9411 (Release Agent).

Belzona 1111 (Super Metal) was then applied to both the flange face and the released former. Using a Belzona applicator cut to a V-shaped contour, the paste-grade material was built up across the flange face to form a high peak along the centre line. The flange and former were bolted together and left to cure in accordance with the IFU.

Upon removal of the former, the required serration pattern was achieved on the flange face, as specified by the customer. Belzona flange face forming was selected for its rapid installation and convenience, enabling the customer to avoid unnecessary downtime. In addition, the solution provides long-term protection against further corrosion.



Initial condition of flanges



Flange faces rebuilt and restored with Belzona 1111 (Super Metal) using forming technique



Completed flange face forming repair

No Hot Work Required

Cold-applied system eliminates the need for welding, enhancing safety on site.

Minimised Downtime

Fast installation and cure allow equipment to return to service quickly.

Precise Finish

Creates the required serration pattern for reliable sealing and long-term performance.

Corrosion Protection

Provides a durable barrier against future flange face deterioration.