

Belzona bonds steel plates onto scraper track

ID: 10326

Industry: Chemical & Petrochemical

Customer Location: Austria

Application: TCC-Tanks and Chemical Containment Areas

Application Date: June 2025

Substrate: Other

Products: Belzona 1121 (Super XL-Metal), Belzona 7311, Belzona 9411 (Release Agent)

Problem

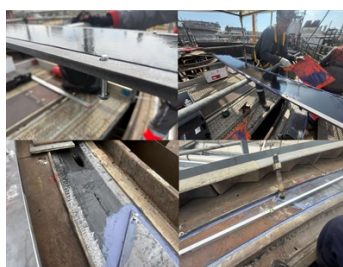
In a process vessel used in the refining industry, the scraper track surfaces had become heavily worn after years of mechanical loading. In some areas, the tracks had worn through completely, affecting both the safe operation of the equipment and the performance of the scraper system. The condition required a repair solution that could reliably restore the load-bearing capacity and worn running surfaces without the need to replace the existing structure.



Damage before and after surface preparation



Prepared steel plates



Fitting and bonding the steel plates



Filled bolt holes and completed repair

Application Situation

Following a technical assessment and the development of a repair plan, custom-fit replacement steel plates were fabricated, prepared, and coated for corrosion protection. At the same time, the existing track surfaces were cleaned, abrasive blasted, and protected against corrosion.

By using a bonded plate solution, the existing structure could be retained, avoiding extensive dismantling, welding, and replacement work. This significantly reduced the amount of work required during the shutdown and minimised the effort associated with major mechanical modifications. In total, around 70 metres of scraper track were repaired and restored for continued service.

Application Method

Before bonding began, the threads of the adjustment screws were coated with Belzona 9411 release agent to ensure they could be removed afterwards. Once the prepared steel plates had been aligned, Belzona 7311 structural adhesive was applied to the designated contact surfaces. The plates were then lifted into position using a crane and lifting magnets, accurately aligned, and bonded to the existing track surface.

The joints between the plates were installed with a controlled gap and also filled with Belzona 7311. After the adhesive had fully cured, the adjustment screws were removed and the remaining areas were filled and smoothed with Belzona 1121.

Belzona Facts

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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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The repair was carried out using Belzona 7311, a structural adhesive designed for highly loaded joints exposed to cyclic mechanical stresses. This solution allowed the new track sections to be attached without the need for extensive welding on the existing structure. As a result, heat-related distortion, thermal stresses, and additional rework were minimised.

The combination of structural bonding, corrosion protection, and localised rebuilding provided a practical alternative to replacing the entire track. This reduced both the repair effort and the overall shutdown time compared with conventional replacement methods.

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