

20" CRUDE OIL LINE REPAIR USING BELZONA NON- COMPLIANT SUPERWRAP II

ID: 10094



PROBLEM

A 20-inch crude oil pipeline operating at ambient temperature was found to have two 10 mm through-wall defects at the 6 o'clock position, one of which was actively leaking. The line was shut down due to safety concerns; however, heavy oil sludge within the pipeline continued to melt and drip under high ambient temperatures, making leakage control difficult.

APPLICATION SITUATION

The line was operating at 4 bar, and the pipeline substrate was heavily oil-soaked, ruling out welding or any form of hot work. Cutting out and replacing the damaged section was also not feasible. Therefore, the customer required a fast, safe, and cold-applied solution to return the line to service while minimizing downtime.

APPLICATION METHOD

Belzona surface-tolerant materials were first applied to seal the active leak and stabilize the affected area. Once the LEL level reached zero, surface preparation was carried out by grit blasting to Sa 2½, achieving a minimum 75-micron surface profile.

A non-compliant Belzona SuperWrap II system, using Belzona 1983 resin and Belzona 9381 carbon-glass fiber reinforcement, was then applied in three wraps. The wrap was consolidated with Belzona 9382 release film and allowed to cure before the film was removed.

BELZONA FACTS

The Belzona system provided a safe alternative to welding and enabled a durable repair despite the challenging oil-contaminated conditions. The pipeline was returned to service in less than five days, allowing the customer to avoid extended downtime and production loss. After four months, the repair was inspected and found to be completely intact with no leaks, further enhancing the customer's trust and confidence in Belzona solutions.

INDUSTRY

Oil & Gas

LOCATION

Al Jhafji

APPLICATION DATE

July 2025

PRODUCTS

Belzona 1221 (Super E-Metal)
Belzona 1983 (SuperWrap II)
Belzona SuperWrap II
Belzona 9611 (ES-Metal)

SUBSTRATE

Carbon steel

PHOTOS

1. The 20" pipe was clamped by the customer due to severe leakage.
2. Second Location
3. After successful application of Belzona SuperWrap II (3 wraps)
4. No leaks were observed in the Belzona SuperWrap II repair after four months of service.

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