

Bell and Spigot Joint Sealed with Belzona Composite Repair System

ID: 10192

Industry: Water / Wastewater

Customer Location: Morong, Bataan, Philippines

Application: VPF-Valves, Pipes and Fittings

Application Date:

Substrate: Cast Iron

Products: Belzona 1161 (Super UW-Metal), Belzona 1212, Belzona 1982 (SuperWrap II), Belzona SuperWrap II, Belzona 5811DW (DW Immersion Grade)

Problem

Water leakage was identified at the bell-and-spigot joint of an underground freshwater main pipeline located along a highway. The leakage was attributed to joint degradation and movement, which allowed water to escape through the joint interface. Due to the pipeline's location and operational constraints, pipe replacement or shutdown of the line was not feasible. An in-situ repair solution was therefore required to stop the leak and restore the pipeline's integrity.



Leak observed at the bell and spigot joint



Installation of an engineered clamp



Application of Superwrap II



Application of release film wrapping completed

Application Situation

The Belzona repair solution enabled the bell-and-spigot joint to be repaired in situ, eliminating the need for pipe cutting or major civil works. The pipeline remained operational throughout the repair, minimizing service interruption and disruption to the surrounding area.

The repair process began with the application of a Belzona paste-grade material to seal the leak. This was followed by the application of a coating and composite wrap system, providing a durable and more permanent repair solution.

Application Method

The leaking bell-and-spigot joint was excavated and dewatered, and the leak was initially controlled by copper peening.

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After mechanical surface preparation, Belzona 1212 was applied to seal and restore the joint, followed by Belzona 5811DW (DW Immersion Grade) for corrosion protection. An engineered repair clamp was then installed and sealed, after which Belzona 9381 Reinforcement sheet, saturated with Belzona 1982 (SuperWrap II) resin, was wrapped around the joint and consolidated using Belzona 9382 release film, providing long-term structural reinforcement and a leak-free repair.

Belzona Facts

1. Enabled an in-situ repair without pipe replacement or system shutdown
2. Delivered significant cost and time savings compared with conventional repair methods
3. Belzona 1212 restored the joint's integrity and provided a durable structural seal
4. Belzona 5811DW (DW Immersion Grade) ensured corrosion protection
5. The Belzona 9381 / 1982 composite system reinforced the joint against vibration and mechanical stress
6. Extended the service life of the pipeline

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