Pipe Support Provides Rope Access Solution for Corrosion Repair and Pipe Protection

Pipe Support Provides Rope Access Solution for Corrosion Repair and Pipe Protection

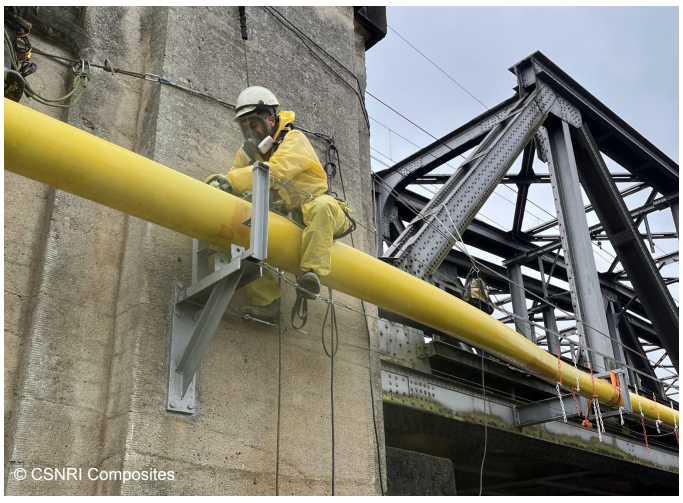
Belgium

Summary

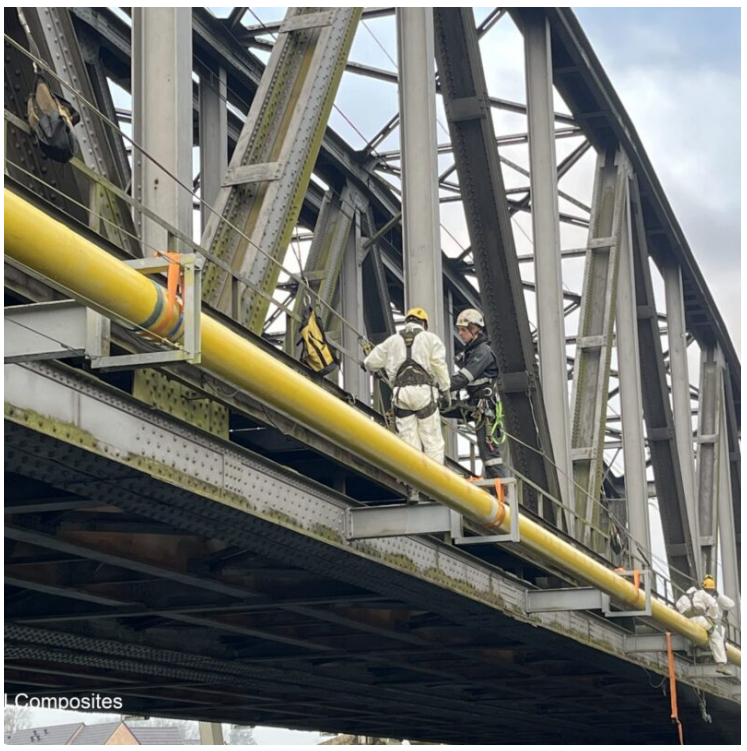
A Belgian-based pipeline owner conducting a scheduled inspection found areas of severe atmospheric corrosion at support locations on an above-ground 10" carbon steel pipeline. The pipeline coating was otherwise in good condition in non-contact areas. Following a proactive maintenance protocol, the owners looked for a solution that would restore the integrity of the pipe at support locations, prevent further corrosion, and minimize the possibility of emergency repairs that might result in interruption of operations. Interseal, a CSNRI distributor and installer located in Belgium, proposed CSNRI'S Pipe Support composite mechanical protection system. Pipe Support provides both a preventative and rehabilitative maintenance solution that protects and extends the life of the pipe.

Benefits

- Prevents moisture ingress
- Prevents crevice corrosion
- Provides abrasion protection
- Extends the life of the pipe
- Provides protection where pipe is subject to movement, extreme weather or physical abuse
- Thin profile allows for installation in areas of low clearance
- Provides 360^0 protection at metal-to-metal contact points
- Reduces or eliminates atmospheric corrosion inspection requirements and intervals
- Can be top-coated with UV-resistant paint



Before Pipe Support Installation



The pipeline was anchored to the length of a bridge at a river location. The thin profile of Pipe Support allows for installation in areas of low clearance.

Challenge

Transmission pipelines require a wide range of support configurations to protect pipe from physical damage through abrasion, movement and occasional impact, as well as damage that can occur over time from exposure to severe weather. In the past, the pipeline owner had managed repairs for corrosion or abrasion damage with metal shells that required welding to complete the repair. Not only was the metal shell repair time-intensive and complex, requiring special tools, but in time, often resulted in water seepage along the welded seams, causing additional corrosion damage. The Pipe Support fiberglass composite system requires no welding or special tools and provides a permanent repair that virtually eliminates corrosion.

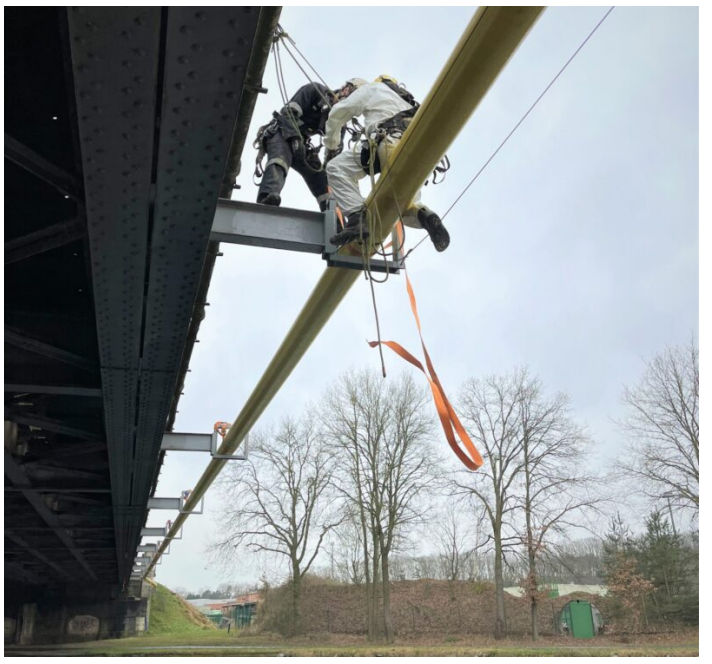
The pipeline and supports were situated alongside a bridge constructed over a river. The pipeline was mounted on supports at regular intervals along the length of the bridge. While Pipe Support offered an exceptional solution for the required repairs, to reach the corroded pipe areas, the best means of access for the crew was from the bridge level above the pipeline.

It was not possible to position scaffolding to complete the installation. Instead, a level 3 RA team from a local vendor provided a rope and harness access system to facilitate the repair. The vendor trained the Interseal crew in the use of the system to ensure safe access to the areas requiring repair, allowing Interseal to complete the necessary work to restore the damaged areas of the pipe.

Application

Pipe Support is a mechanical protection system designed as a sacrificial wear plate to protect the pipe from external corrosion and other damage. The system provides 360^0 protection by completely encasing the pipe for a permanent repair that eliminates both crevice and galvanic corrosion. The fiberglass shield, when permanently bonded to the pipe, creates a non-corrosive environment where the pipe comes into contact with the support. Pipe Support accommodates both the weight of the pipe and abrasion from potential pipe movement.

To install the repair, the Interseal crew first prepared the pipe with an MBX® bristle blaster to remove the existing pipe coating and provide the required anchor profile. To repair corrosion-damaged areas identified during inspection, Pipe Support fiberglass composite sleeves were installed directly over the defects with high-performance adhesive and filler material that permanently bonds the system to the pipe. Pipe Support was also installed at locations without signs of corrosion to protect the pipe against further defects. The system was installed by a crew of two over the course of five days, with installations at three to four locations per day, for a total of 14 installations. The repairs required 14 kits, with each kit including two layers of materials.

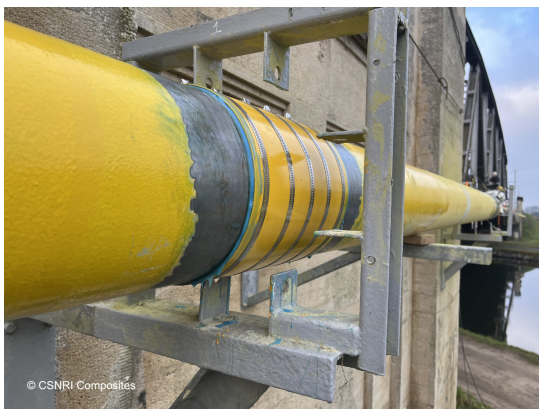


The repair area was accessed through a system of ropes and harnesses that lowered the crew to the pipe location.

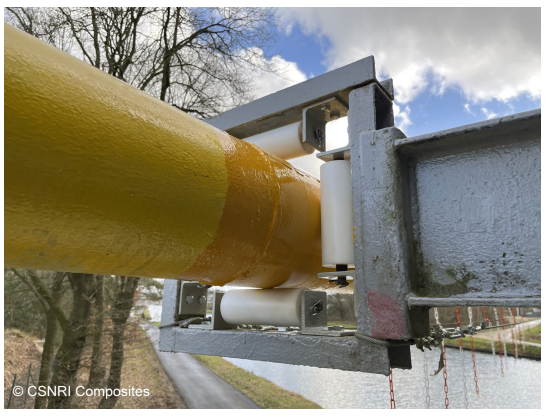
Results

The pipeline was permanently restored to its original structural integrity, protecting the contact points from further degradation. Repairs were completed without the construction of scaffolding or heavy-lifting equipment. The repair was easily scheduled, as there was no requirement for a hot permit to work. There was no need to drain down the line and all repairs were completed without interruption of pipeline operations.

Going forward, the pipeline owner has instituted a preventative maintenance program, inspecting all pipelines to address all possible touchpoints. The Pipe Support system not only restores asset integrity and protects pipe from future damage and corrosion, it also reduces costs through minimized future pipeline rehabilitation work.



The Pipe Support system creates a non-corrosive environment where the pipe comes into contact with the support, repairing defects and providing protection against future damage.



Once the system fully cured the retaining clips were removed and the existing coating extended over any surface preparation. New Pipe Support contact point rollers where also installed.