

BlackDiamond® 12" Lamination Repair on Liquids Pipeline in USA

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United States

Pipe Details

- Customer: Liquid transmission pipeline operator
- Pipe Diameter: 12"
- Design Pressure: 1440 psi MAOP
- Pipe Contents: Refined products
- Pipe Defect: Lamination defect in the seam weld

Summary

A major refined products pipeline operator discovered laminations in the seam weld of a 12" pipe. Additionally, the repair was on a 5% field bend, and therefore a Type B welded sleeve was not an acceptable repair solution. Many miles of pipeline would have to be blocked in and purged in order to cut the line and weld in a fresh section of pipe. The result would be a costly repair with heavy equipment and lots of hot work, amounting to lost pipeline operation time.

CSNRI's team of engineers designed a permanent repair for the defect according to ASME PCC-2 Article 4.1, and recommended a BlackDiamond® repair solution. 6 layers of BlackDiamond® were required to repair the defect, even with the high design pressure.

CSNRI mobilized a trainer within a couple days to train and certify several of the pipeline operators' employees. Once trained and certified, the installers applied 6 layers of carbon fiber over a 21-foot repair length, according to the calculations prepared by the CSNRI engineer. The actual installation time was less than half a day, and the pipeline operator was able to backfill the dig in the same day. No heavy equipment or hotwork was required for the installation, and the line was in operation throughout all rehabilitation activities. Below is a photo of the completed repair.

This pipeline was able to maintain full operation throughout the repair installation with no need to shut down or reduce capacity. CSNRI successfully designed and implemented this repair with a cost-effective and reliable solution. The pipeline operator was very satisfied with CSNRI quality, service, and delivery of the BlackDiamond® engineered composite solution.

