

Black Diamond Restores 36-inch Gas Pipeline

PIPE DETAIL

36-inch (914.4-mm) gas line

1,440 PSI (99.28bar)
Maximum Operating Pressure

70°F (21.1°C) pipe temperature

95°F (35°C) ambient temperature

SUMMARY

- 36-inch (914.4-mm) high-pressure gas line was corroded and pitted
- Clock Spring trained technicians completed the installation in 2.5 hours
- No welding was required
- No shutdown required

An inspection on a 36-inch (914.4-mm) natural gas pipeline in Northwest Texas revealed significant corrosion and pitting around a girth weld. The line, designed for 1,440 psi (99.28 bar) maximum operating pressure, would need to remain in service while the repair was carried out. This meant that the product selected would have to be installed without introducing hot work.



Primer is mixed and poured over the prepared pipeline.



A trained technician uses a 2-inch (50.8-mm) OD tube to help keep tension the carbon-fiber fabric while installing it on the pipe.

Having used composite solutions in the past, the owner looked to Clock Spring Company, Inc. for a repair. After evaluating the damage to the line, experts at Clock Spring suggested using the BlackDiamond® carbon-fiber wrap. Engineered to provide strength that enables line restoration to maximum operating pressure (MOP) without shutting down, BlackDiamond® has a long and successful track record

for rehabilitating and restoring damaged pipelines to their original operational strength. The system comprises three components: a solid epoxy primer, bi-directionally woven carbon-fiber material, and polymeric epoxy resin.

The team of technicians received training for Clock Spring certification immediately prior to the installation. To carry out the repair, they used filler putty in all the defected areas on the pipeline and on the entire girth weld bead to ensure a smooth transition for the fabric. Once the putty was in place, primer was mixed and poured over the entire area. Then the carbon-fiber fabric was wetted and wrapped around a 2-inch (50.8-mm) OD tube to help keep tension on it while it was being installed on the pipe. The team applied 6 layers, centered over the weld cap. This design, using wider fabric, expedited installation and greatly reduced the number of layers needed to restore the line to MOP.



The repaired line is cured and ready for continued service.

The repair was completed in approximately 2.5 hours and was fully cured in 8 hours. This approach returned the line to safety, delivering a quick, reliable repair that did not require the line to be taken out of service.



EASY TO INSTALL
COST EFFECTIVE TO DEPLOY
DURABLE FOR DECADES

There are nearly 3,000 trained Clock Spring installers around the world who are qualified to provide repairs with Clock Spring products. Clock Spring regularly offers [training classes](#) for installers and can custom design training for individual company needs.

