

Composites Take on Air-to-Soil Interface Corrosion on Gas

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California

Pipe Details

- Installations on ½-inch (12.7-mm) to 42-inch (1,066.8-mm) carbon steel natural gas pipelines
- Temperature >175° F (79.4° C)

Summary

- Lines ranging from ½-inch (12.7-mm) to 42-inch (1,066.8-mm) on a natural gas transmission system required repair/reinforcement.
- SnapWrap, Contour WA™ (now **SynthoGlass XT**) and Pipe Support were used to limit the effects of corrosion and the environment 1,118 areas along the natural gas transmission lines
- Repairs were executed on a tight schedule
- The system remained in service while the composite solutions were installed
- The composite repairs will allow simplified maintenance

The owner of natural gas compressor stations along a large transmission pipeline supplying the US West Coast market was developing a proactive approach to corrosion mitigation ahead of government audits. There were two objectives in creating the plan: to assure compliance and to achieve long-term preventive maintenance.

Typical solutions for addressing air-to-soil interface corrosion have relied on wax tapes or recoat systems, many of which have limited life spans or are subject to damage by climate or mechanical processes that can occur through normal wear and tear.

Having used CSNRI products for several years to mitigate corrosion at transitions between the open-air atmosphere and the soil, the owner was interested in a composite solution. The drivers for this choice were the need for a fast, permanent, robust repair and to minimize maintenance once the composite solution was in place.

This project presented a number of challenges. There was a very tight timeline. The installers would have to deal with the climate in the remote locations where the work would be carried out.



CSNRI trained and certified technician apply Contour WA™ to a prepared line.



Pipe supports are installed to limit the effects of corrosion and the environment for the gas transmission lines.

And service could not be interrupted while the composite solutions were being installed. Some of the pipe on the discharge side of the compressors called for high-temperature adhesive and filler due to temperatures in excess of 175° F (79.4° C).

The CSNRI team has developed expertise in providing fast and permanent installations and has delivered on this competency for decades. The range of requirements for the transmission system would require multiple products, including Snap Wrap, Contour WA™ and Pipe Support.

Once the repairs were designed, a CSNRI trained team of 25 technicians provided by a qualified third-party contractor removed soil overburden around the pipeline and began the process of abrasive blasting the first of 1,118 locations that eventually would be covered by the Snap Wrap, Pipe Support and Contour WA™ products. With the surface prepared, the team could apply the necessary adhesive and install the composite solutions.

Over the 2 months of repair work, there was no disruption of service or operations at the compressor locations.

Technicians worked in zones within the location to make sure that all the air-to-soil locations were addressed completely and efficiently, systematically making more than one thousand

repairs. This lengthy project was finished on time and within budget with no system downtime.

The installation team executed the work without incident, delivering a range of solutions that have met with the approval of government auditors, who were impressed with the speed of installation and the permanent nature of the composite material system.

This successful project highlights the value of CSNRI composite solutions as a proactive way to mitigate corrosion at the air-to-soil interface.



Installers secure Snap Wrap to strengthen the pipe and protect it at the air/soil interface.