



Project Data

Location	Midwestern Region, USA
Completion	October 2025
Project Type	Pipeline Structural Repairs
Products Used	Protal™ 2800CF Tape, Protal™ 7300, Protal™ 3210 Filler, Denso Polywrap

Project Details

In October 2025, a section of 16" high pressure natural gas pipeline exhibiting external corrosion defects was identified for a composite repair. The affected area measured approximately 24 inches in length with <50% wall loss. Following assessment and surface preparation, the repair zone was defined as a 36" linear section to ensure full coverage beyond the corroded area and proper load transfer of the composite system. For this project, the Denso Protal™ 2800CF Composite System was selected due to its proven performance in corrosion rehabilitation and mechanical reinforcement applications. The system was applied using the "Spiral Wrap" method to ensure consistent overlap, uniform tension, and optimized adhesion throughout the carbon composite zone. The proper number of layers were installed to meet the design requirements per ASME PCC-2 Art. 401. Prior to application, environmental conditions were verified to ensure compliance with the Denso's specifications. The dew point was monitored throughout the installation and recorded between 52°F and 44°F, confirming suitable ambient conditions for proper curing and adhesion.

The surface was prepared by mechanical cleaning to remove any residual corrosion products and achieve the optimal surface profile. Once prepared, the Protal™ 3210 Filler and Protal™ 7300, used as an epoxy primer, were applied accordingly, followed by successive spiral wraps of the Protal™ 2800CF composite material. Each layer was firmly tensioned to eliminate trapped air and ensure intimate contact between layers. Denso Polywrap film was finally applied and perforated, compressing the moisture-cured urethane material down against the substrate. The repair process was completed in approximately 30 minutes, demonstrating the efficiency and ease of application of the Protal™ 2800CF system. Throughout the composite wrap install process, all Denso material batch numbers were documented for traceability and quality assurance purposes.

This project highlights the effectiveness of the Denso Protal™ 2800CF System in addressing wall loss due external corrosion defects quickly and reliably. The resulting composite reinforcement provides long-term protection against corrosion and mechanical stresses, restoring the pipeline's integrity and extending its operational life with minimal downtime.



Protal 3210 Load Transfer Filler was applied.



Protal 7300 Epoxy applied next as an adhesive primer for the carbon fiber system.



Completed section of the Protal 2800CF pipeline repair system in place.

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