

INDUSTRIAL CASE STUDY

CORROSION PREVENTION IN WET PIPE



SITUATION

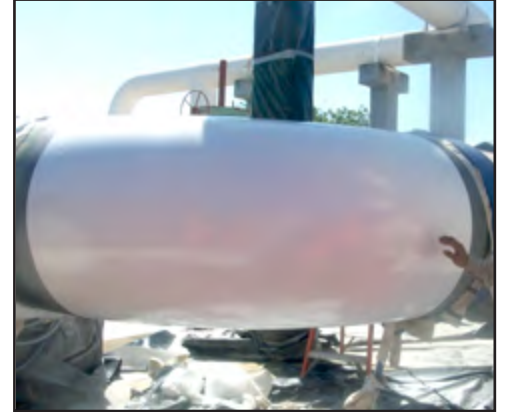
Carbon steel pipes that operate in a very corrosive environment face the challenge of having a continuously wet surface. The cold natural gas constantly flowing through the pipe keeps the surface temperature below Dew Point, promoting condensation and corrosion over time. Anticorrosive protection is essential to mitigate the effects of corrosion generated by the corrosive conditions of the environment, prolong the service life of the facilities, minimize risk and exposure.

For PEMEX Exploration and Production, their challenge was to find a high-performance coating that could prevent corrosion and be applied to a wet pipe with limited downtime and zero VOC's.



SOLUTION

Especialidades en Turbomaquinaria S.A de C.V. (partner of LINE-X®) provided a solution using LINE-X® XS-350 pure polyurea coating. The wet pipe required mechanical cleaning to white metal in accordance with SSCP-SP10 and NACE No. 2. The pipe had to be dried utilizing specialized equipment and techniques. In these environments, moisture becomes present almost instantly, so ETM engineered specific pre-treatment methods to extend the time frame before condensation builds up. The application of XS-350 occurred within a short timeframe. Due to the quick drying time of XS-350 and the specialist pre-treatment of the pipe conditions, the freshly applied coating is dry before any moisture being able to form on the pipe, ensuring a successful application. Finally, LINE-X® ULTRA, a fast-drying UV stable topcoat was applied to ensure the pipe will not discolor over time.



RESULTS

This application proved groundbreaking as it was the first time that LINE-X technology was applied to a compression pipe while in operation and under external condensation conditions. Surface preparation methods and application procedures were successful and considered satisfactory by PEMEX and ASTM standards. Thanks to the rapid cure of the XS-350 coating, ETM is confident their anticorrosion solution is will benefit PEMEX for many years to come. The LINE-X® coated section of pipeline has performed to all evaluation criteria set out by PEMEX. After two years in operation, there are no corrosion points, no permeability, no degradation or heating – and third-party evaluations conclude that LINE-X® technology performs the function of protecting the metal substrate of a pipe in operation and under external condensation conditions.

PROJECT OVERVIEW: Corrosion Prevention in Wet Pipe at The Cunduacán Natural Gas Compression Station

PRODUCTS USED: LINE-X XS-350, LINE-X Ultra

CERTIFICATIONS: MIL-STD-810F - Fungus Resistance, ASTM B117 Salt Spray, ASTM G95 Cathodic Disbondment



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