

Scar-Guard Protects Field Joint Coating During HDD

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USA

Pipe Details

New, 24-inch (609.6-mm) steel pipeline was being installed using HDD

The line was being pulled 1,600-ft (488-m) through granite

ARO was used to protect the FBE coating

Summary

- A gas utility company installed a new, 24-inch (609.6-mm) steel pipeline using HDD
- The line was being pulled 1,600-ft (488-m) through granite
- Scar-Guard™ was used to protect the FBE coating during installation
- Smooth profile reduced damage during pull through, preserving line integrity
- Non-hazardous
- No UV light or heating required
- No negative impact on project schedule or budget

A natural gas utility company that was installing a new, 24-inch (609.6-mm) steel pipeline via horizontal directional drilling (HDD) had concerns that the field-applied, field joint coating would sustain damage during the estimated 1,600-ft (488-m) pullback through granite.

The company had taken steps to mitigate the risk of damage, using an abrasion resistant overcoating (ARO) to protect the fusion bonded epoxy (FBE), but there was uncertainty about the efficacy of this approach as the previous installation was unable to pass post construction coating inspection. If any damage occurred during installation leading to the pipeline entering service with holidays or unseen scarring, the line would have to be pulled and the damaged areas restored. The cost to remove the pipeline and re-install it would have pushed this project over budget.

This is a common concern for HDD pipeline installations in harsh geological environments. When coatings experience integrity issues on lines that are inaccessible, the only solution is to re-pull or replace the line, and the associated costs can be daunting.

Hoping to find a way to ensure a reliable installation, the company contacted ClockSpring|NRI with a request to test the proprietary Scar-Guard™ to determine if it would meet the requirements for this installation.

Scar-Guard is a composite, ARO made of fiberglass cloth that is pre-impregnated with a durable, flexible polyurethane resin. It is activated by water and cures in a matter of minutes, creating a sacrificial outer laminate system that protects preapproved, anticorrosion field joint coatings and mainline coatings such as FBE, liquid epoxies, shrink sleeves, and tapes. It is designed to protect these coatings from the mechanical stresses and scarring associated with HDD, thrust-boring, direct pipe and microtunnel pipeline installation methods.



A natural gas utility company was installing a new, 24-inch (609.6-mm) steel pipeline through granite via horizontal directional drilling (HDD).

To test this ARO, technicians welded a length of pipe to the line and applied four layers of Scar-Guard over the first field joint 40 ft (12 m) behind the bore head as a sacrificial, mechanically protective coating. The location was specifically chosen to ensure that the composite reinforced coating would be exposed to the brunt of



all forces to which this pipeline would be subjected. Due to the relatively large application area, which covered 5 ft (1.5 m), ClockSpring|NRI engineers selected a relatively slow-curing resin to allow sufficient working time.

With the Scar-Guard system applied, the pilot section of pipe was installed following the same methodology that would be used for the pipeline. After the line was installed, it was pulled back and examined for damage. Although there were some areas of the sacrificial composite reinforced coating that experienced abrasion, there was no damage to the corrosion coating protecting the pipeline. A close inspection by the coating inspector, utility engineer, and contractor's superintendent revealed that Scar-Guard provided the necessary protection to ensure a successful job.

On the basis of this test, the gas utility company completed the HDD installation using Scar-Guard to protect the pipeline from damage and avoid having to re-pull sections of the line.

By working with a trusted partner, the company was able to implement a safer approach to executing HDD installations that will deliver considerable savings by maintaining the integrity of the anti-corrosion coating.

After the line was installed with Scar-Guard applied, it was pulled back and examined for damage.



Scar-Guard provides added security in high-consequence areas to ensure the pipeline coating remains intact.



The gas utility company completed the installation using Scar-Guard to protect the pipeline from damage.