

Ensuring Additional Mechanical Protection of HDD Coatings



Denso Bore-Wrap®
Ideal for Larger Diameter Pipes



InduMar Stop It® BoreShield
Ideal for Smaller Distribution Pipelines

ABSTRACT

The use of **horizontal directional drills (HDDs)** is an ever-increasing pipeline installation technique. As HDDs increase, there is an increased probability for coating damage, even when coated with traditional mill or field applied abrasion resistant overcoat (ARO). This coating damage includes shear, abrasion, impact, and gouging (SAIG) (among others) and that damage may exist for the life of the pipeline due to an HDD being inaccessible for future maintenance. Ensuring the long-term quality and performance of the coating applied to pipe within an HDD is critical for the life of the asset.

Current subscale tests provide a good starting point for the ability of any given coating to provide protection from obstructions within an HDD, however, those test protocols do not currently assure or quantify additional mechanical protection currently mentioned in several ASME and ISO specifications. Therefore, there remains a need for a full-scale test alternative to provide qualitative shear, abrasion, impact, and gouging data for any given coating to be used in an HDD. The developed full-scale test alternative includes several features or obstructions that are engaged against the pipe/coating while mechanically pulling the pipe through the test cage. These features were designed to replicate the loading experienced within an HDD.

The result of this test helps quantify the damage experienced. This is done through several quantitative assessments including holiday detection, gouge depth measurements, and shear disbondment.

These results are then benchmarked against several commonly used mill applied coatings.

INTRODUCTION

As onshore pipeline rights-of-way become more congested and urban sprawl increases, the number of horizontal directional drills (HDDs) will likely increase. HDD is a trenchless pipeline installation method that requires drilling a larger pilot hole where the mainline pipe can be subsequently pulled through the drilled hole. However, HDDs have an increased probability for coating damage, even when coated with traditional mill or field applied abrasion resistant overcoat (ARO). This coating damage includes shearing, abrasion, impact, gouging, denting, tearing, bending, etc. and that damage may exist for the life of the pipeline due to an HDD being inaccessible for future maintenance. Therefore, there remains a need for a high quality, sacrificial overcoat to protect the underlying coating, both on the mainline and field joints. A representative photograph of coating damage occurring during an actual HDD is shown in Figure 1. In this example, gouging occurred along the length of the pipe, both to the FBE+ARO base coating and sacrificial overcoating.

SOURCE: David B. Futch; Ron Raphoon - Paper presented at the AMPP Annual Conference + Expo, Denver, Colorado, USA, March 2023.



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Are you ready for the change of the season?

If you are a pipeline operator, most likely it's your job to choose a coating that will meet the pipeline operating parameters. There are two to be most aware of:

- #1 Your coating choice should be suitable for the environment where it will be used.
- #2 In the case of field application, you would want your choice to require the least effort and complexity (saving you time and money).

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October 10

Great Lakes AMPP on Prestressed Concrete Pipe in Cathodic Protection Areas (Ann Arbor, MI)

October 17 - Quarterly AMPP Chicago Section Meeting (Joliet, IL)

PRODUCT HIGHLIGHT

Denso Bore-Wrap®

Denso Bore-Wrap® is an Abrasion Resistant Outerwrap (ARO) that has excellent performance against impact, gouge, abrasion, and fracture to protect anti-corrosion coatings during pipeline installations in difficult terrain or by means of trenchless installation methods such as directional drilling, HDD or boring.

- Prevents coating damage
- Rapid application and cure time
- No mixing or VOCs
- Tapered surface profile
- Outstanding abrasion, gouge and impact resistance
- Resistant to aggressive soil conditions

**Call us @ 248.735.7000
for a FREE demonstration.**

<https://www.usigroups.com/product/denso-bore-wrap/>



PRODUCT HIGHLIGHT



InduMar Stop It® BoreShield

STOP IT® BoreShield system includes a strong fiberglass knitted tape, pre-coated with fast setting water-activated urethane resins. Installation simply involves wrapping the tape around the area in need of protection.



STOP IT® BoreShield can be installed by one person with no special tools or hot work, and provides for quick, in-field applications, regardless of weather conditions, pipe orientation, or local geometries. **Recommended for use on pipes up to 48 inches in diameter.**

- Can be applied to wet or dry surfaces
- Superior resistance to environmental degradation
- Excellent abrasion and impact resistance
- Strong adhesion to pipe surfaces
- Water activated urethane resin system fully cures to an inert fully encasing matrix
- Requires minimal pipe preparation
- Knitted fiberglass construction ensures excellent conformability to tees, elbows, saddles, joints, and step profiles

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for a FREE demonstration.**

<https://www.usigroups.com/product/indumar-stop-it-boreshield/>

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