# TECHNICAL DATA SHEET
# BORE-WRAP™ - ABRASION RESISTANT OUTERWRAP

TESI CORROSION PROTECTION

Premier™

## BORE-WRAP IS A FIBREGLASS CLOTH, IMPREGNATED WITH A WATER ACTIVATED RESIN, WHICH CREATES AN ABRASION RESISTANT, SACRIFICIAL OUTER LAMINATE TO PROTECT PRE-APPROVED PIPELINE'S FIELD JOINT COATINGS AND MAINLINE COATINGS

Bore-Wrap minimises the need for spot repairs or re-pulling pipe from damage, while providing the best mechanical protection of the underlying field-joint and/or mainline coatings.

BORE-WRAP™

## USES

Bore-Wrap is an **Abrasion Resistant Outerwrap (ARO)** that offers excellent performance against **Shearing, Abrasion, Impact, Gouge (SAIG)**, and fracture to protect field joint anti-corrosion coatings during pipeline installations in difficult terrain or by means of trenchless installation methods such as directional drilling, HDD, Direct Pipe or boring. Bore-Wrap creates an abrasion resistant, sacrificial outer laminate which protects pre-approved field joint coatings and mainline coatings such as epoxies, shrink sleeves, 3LPE, 3LPP and FBE.

## CHARACTERISTICS

- easily applied in the field;
- compatible with all coatings (FBE, 3LPE, 3LPP, epoxy, shrink sleeves);
- manually applied - no special tools required;
- fast curing – can be ready for backfill in less than one hour;
- no mixing or VOCs (Volatile Organic Compounds);
- outstanding shear, abrasion, gouge and impact resistance;
- resistant to any type of aggressive soil.

## CONSTRUCTION

The fiber used in Bore-Wrap has 2 distinct Layers:

- **Base Layer** is a woven roving with fibers that go both circumferentially and laterally along the pipe surface.
- **Top Layer** is a randomized strand mat fiberglass that has fibers going in every possible direction.

The fabric is pre-impregnated with a moisture cured polyurethane resin.

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Bore -Wrap performance is in accordance with Snam technical specification **GASD 07.10.02 REV.4 "Mechanical protection for HDD and trenchless technologies".**

## TECHNICAL DATA

| Property | Typical Value | Test Method |
|---|---|---|
| THICKNESS | 1,041 microns/layer | ISO 21809-3, Annex B |
| IMPACT | 113.9 Joules | NACE RP 0394 |
| INDENTATION AT 10 N/MM² | No observable damage | ISO 21809-3, Annex E |
| GAUGE DEPTH | 609 microns @ 50 kg double burr | CSA Z245.20 Clause 12.15 |
| 3MM GOUGE DEPTH | 625 kg Load | NFPCA HDD Load to Fail |
| 10MM GOUGE DEPTH | 2000 kg Load | NFPCA HDD Load to Fail |
| FLEXIBILITY | 3 deg/PD | CSA Z245.20 Clause 12.11 |
| ABRASION RESISTANCE | 40,164 cycles/ply | ASTM D-4060 C-17 wheel |
| FRACTURE TOUGHNESS | 21.1 MPa. m 1/2 | ASTM E1922 |
| TG | 131°C | DSC |
| TENSILE STRENGTH | 230 MPa (33,380 psi) | ASTM D638 |
| TENSILE MODULUS | 15,320 MPa | ASTM D638 |
| TENSILE ELONGATION | 1.66% | ASTM D638 |
| FLEXURAL STRENGTH | 195 MPa | ASTM D7262 |
| FLEXURAL MODULUS | 13,721 MPa | ASTM D7262 |
| COMPRESSION STRENGTH | 820 MPa (119,000 psi) | ASTM D695 |
| SHORE D | 78 (pull back ready at 65) | ISO 868 /ASTM D2240 |
| SPECIFIC GRAVITY | 1.71 g/cm³ | ASTM D792 |
| WATER ABSORPTION 2H @100°C | 0.26 grams | ASTM D570 |
| WATER ABSORPTION 24H @23°C | 0.11 grams | ASTM D570 |
| ADHESION TO FBE/EPOXY/PU | 7.38 MPa / 3.83 MPa no primer | ISO 4624 |
| ADHESION TO PE/PP COATINGS | 1.63 MPa | ISO 4624 |
| DIELECTRIC STRENGTH | 110 V/mil | ASTM D149 |
| WORKING TIME | 7 minutes | |
| CURE SCHEDULE | 30 minutes @ 21°C - 26°C | |
| MODULUS OF ELASTICITY 15.32 GPA ASTM D3039 (YOUNG'S MODULUS) | 15.32 GPa | ASTM D3039 |
| LAP SHEAR | 1.63 MPa (2,348 psi) | ASTM D5868 |
| SHELF LIFE | 1 year with proper storage | |

## AVAILABILITY

| TAPE WIDTH | ROLL LENGTH | ROLLS / CARTON |
|---|---|---|
| 150 mm (6") | 9 m (30 ft) | 6 |
| 250 mm (10") | 9 m (30 ft) | 4 |
| 250 mm (10") | 15 m (50 ft) | 3 |

**N.B.** The material is sealed in a nitrogen filled foil bag and boxed in quantities depending on roll size.