



SCARGUARD

MECHANICAL PROTECTION SYSTEMS

**FIBER-REINFORCED COMPOSITE MECHANICAL
PROTECTION SYSTEM FOR HDD AND OTHER
TRENCHLESS CROSSING INSTALLATIONS**

WHY MECHANICAL PROTECTION MATTERS

Pipeline projects frequently encounter installation conditions that place significant stress on protective coating systems. While traditional corrosion protection coatings are not designed to withstand the severe mechanical forces experienced during trenchless installations.

Damage sustained during installation could result in:

- Increased project costs
- Delays and rework
- Coating repairs and inspections
- Future corrosion risk
- Reduced asset integrity

In some cases, pipelines may need to be removed, repaired and reinstalled following coating damage, leading to significant schedule and budget impacts

SCARGUARD IS AN ENGINEERED, MOISTURE CURABLE, POLYURETHANE IMPREGNATED, MULTI-DIRECTIONAL FIBREGLASS PROTECTION SYSTEM.

IT PROVIDES EFFECTIVE PROTECTION AGAINST THE SHEAR FORCES, ABRASION, IMPACTS AND GOUGING DAMAGE COMMONLY ENCOUNTERED DURING HDD, THRUST BORING AND OTHER TRENCHLESS INSTALLATION METHODS.

SCARGUARD OFFERS

- Unparalleled mechanical properties for protection against impact, abrasion, gouge, punctures and tears.
- Pre-impregnated moisture cured polyurethane resin means – fast and easy installation!
- Non-Shielding composite design technology. ScarGuard has been rigorously tested for shielding and proven compatible with ICCP.

APPLICATIONS

- Onshore Pipelines
- Offshore Pipelines
- Abrasion Resistant Overcoat (ARO)
- HDD, Drilling and Boring
- Girth-Weld Joints
- Mainline Coating Protection



SCARGUARD HELPS TO SOLVE COMMON PROBLEMS FOUND IN HDDS AND OTHER TRENCHLESS CROSSING INSTALLATIONS.



SOIL CONDITIONS/ GEOLOGY

Difficult soil conditions such as sandstone, shale, cobble, or granite.



MECHANICAL STRESSES

Coatings are susceptible to damage from gouging, abrasion, impacts, shear forces, and bending.



CATHODIC PROTECTION

Can be ineffective within the HDD section due to soil resistivity variations or high resistivity rock stratum.



COSTLY REPAIRS

Repairs of detected bare pipe sections significantly more costly than trench laid pipes, requiring pipe to be pulled, repaired, then repulled through the HDD section.

SCARGUARD OFFERS THE BEST SOLUTION FOR:

- Any pipe configuration: small/large OD, thick/thick wall, high weld seams, etc.
- Any coating type: epoxies, heat shrink sleeves, cold-applied visco-elastics, etc.
- Any type of trenchless crossing: HDD, micro-tunneling, casings, etc.
- Any application type: field joints, full encapsulations, cable & fiber optic attachments, etc.
- Any type of geology: sand, cobble, shale, etc.

SCARGUARD CHARACTERISTICS

Characteristic	ScarGuard
Resin Type	Polyurethane
Fabric Type	Moisture cure urethane
Pre-impregnated	Yes
Layer thickness	34 mils
Total thickness (applied)	68 mils (2 layers)
Curing agent	Water
Curing time	30 to 90 min at 23°C (73.4°F)
Surface preparation	SSPC SP1 solvent clean (For full encapsulation, abrasion of the base coat is recommended)
Application temperatures	0°C (32°F) to 60°C (140°F)
Storage temperatures	5°C (40°F) to 35°C (95°F)
Shelf Life	12 months

SCARGUARD MECHANICAL PROPERTIES

Property	ScarGuard
Impact Resistance (ASTM G14-04)	48 Joules (35.4 ft-lb)
Gouge Resistance (CSA Z245.20.10)	16 mils at 50 kg (110.2 lb)
Abrasion Resistance (ASTM D4060)	1667 cycles/mil
Hardness (ASTM D2240)	78 Shore D @ 23°C (73.4°F)
Layer thickness	34 mils
Total thickness (applied)	68 mils (2 layers)

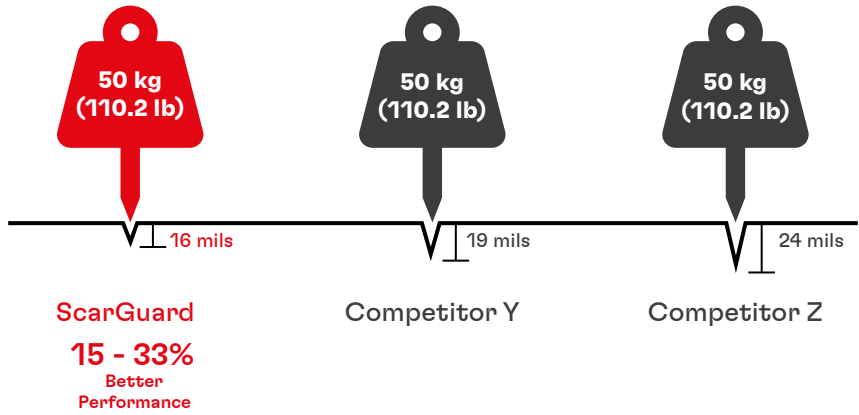
COMPLIANCE
WITH INDUSTRY
STANDARDS

- AMPP
- ISO
- API
- ASME
- ASTM



MECHANICAL
PROTECTION SYSTEMS

SUPERIOR GOUGE RESISTANCE



ScarGuard has 15-33% more gouge resistance and 41% more abrasion resistance than other products in the market.



CASE STUDIES

HDD ROCKY RIVER PROJECT

A 2,400-foot section of a 30-inch OD gas pipeline was to be installed under the Rocky River in North Carolina by Horizontal Directional Drilling (HDD). To protect the Canusa-CPS HBE-95 field joint coating during the tough HDD pull, Canusa- CPS offered ScarGuard, a fiber-reinforced composite mechanical protection system. Typically applied as a 2-layer system, a 4-layer system was selected for this project due to the rocky terrain, tough drilling conditions, size of the pipe, and tight construction window.



M&N ENERGY SERVICES LTD. GAS PIPELINE

M&N Energy Services Ltd. required a mechanical protection system over and above an existing plant applied abrasion resistant overcoat. A fully encapsulated system was required to cover a 10" diameter 550 meter gas transmission pipeline for a horizontal directional drill in British Columbia, Canada. Canusa-CPS supplied 10" x 30' ScarGuard for its fiber-reinforced composite mechanical protection system for the 10" diameter pipeline. ScarGuard minimizes the need for costly repairs after pull back, and provides the most robust protection for any underlying pipeline coating.



COMPLETE PIPELINE PROTECTION

For complete pipeline protection, ScarGuard can be combined with our liquid epoxy lines from Canusa CPS and Powercrete, offering a comprehensive solution for you next project.





LOCAL INVENTORY

In many cases, the need for a field applied ARO is not known until the pipe is ready to be pulled. SFL has inventory in our Houston location at all times and with our partners around North America.

For more information please visit:

[csnri.com](https://www.csnri.com)