

SYLSHIELD

ABRASION PROTECTIVE WRAP WITH CORROSION INHIBITORS

Description

SylShield is a water-activated, fibreglass, abrasion-protective wrap with a tri-axial structure for extreme thickness and a fast-working resin incorporated with highly effective corrosion inhibitors. It has been formulated for the protection of anti-corrosion coatings during the installation of pipelines using trenchless methods such as horizontal directional drilling. SylShield acts as a sacrificial layer to protect field joint coatings and factory-applied coatings against abrasion during pipeline installation.

The fibreglass bandage used in SylShield is more than 3 times thicker than standard SylWrap HD. The extra thickness allows layers of protection to be built more quickly around pipes and structures, with less wrapping required.

SylShield cures to provide a robust, toughened, protective outer shell capable of withstanding most forms of trenchless installation. Wrapping a pipeline with SylShield before it undergoes such processes protects coatings, welds and joints from damage and scarring. This avoids the need to make pipeline repairs after pull back. SylShield can be used in conjunction with anti-corrosion coatings, epoxies, shrink sleeves and other composite wraps to enhance protection.

In abrasive and harsh environments such as mines, quarries, and onshore and offshore pipelines, SylShield protects systems and structures against corrosion, chemical attack and impact damage.

Surface Preparation

Apply directly over the pipe's anti-corrosion coating. If necessary, remove any gloss from existing coating by roughening the surface before application.

Directions for Use

Wrapping

- SylShield is water-activated - apply water using a sprayer to each layer during application. Ensure enough water is used to fully activate the resin and ensure full cure.
- Only open foil pouch when ready to use - SylShield begins to cure in contact with moisture in the air.
- *For Field Joint Coatings, begin wrapping at a minimum of 150mm ahead of the coating.*
- Apply the first wrap twice around the pipe with 100% overlap to make 2 layers.
- Continue to wrap in a spiral pattern with 50% overlap along the pipe, ensuring each layer is sprayed with water.
- If using more than one roll, ensure that each subsequent roll overlaps the end of the previous roll by 150mm.
- Continue wrapping until desired area is wrapped.
- *Field Joint Coatings: ensure SylShield is wrapped 150mm beyond the coating.*

Compression Film

Compression film should be applied to improve lamination to the pipe whilst SylShield cures.

- Wrap the compression film in the same direction as the SylShield, ensuring the film overlaps by at least 50mm at each end. 2 - 3 wraps should be sufficient to hold the SylShield in place.
- Perforate the compression film using a spiked roller after application to allow SylShield to degas during curing.
- Remove compression film immediately prior to pipeline installation. Ensure SylShield has cured to a hard shell before installation.

Cure Time

SylShield has a working time of 2-5 minutes and a functional cure is achieved in 30-45 minutes. It is temperature resistant to 250°C and effective on pipes of all sizes made of steel, stainless steel, copper, malleable iron, GRP, ceramic, most plastics, clay, concrete, rubber, and lead.

Cold Weather

SylShield will take longer to cure at lower temperatures.

Use ethylene glycol or propylene glycol in the water used to activate SylShield at a rate of 40 - 50% to prevent the water freezing. Additional heat in the form of electric warming blankets will be needed to enable SylShield to cure at temperatures below 5°C.

Hot Weather

To extend the cure time, store SylWrap at a cool temperature before application and use chilled water to slow the curing process

Applications

- Pipe protection:** Protect pipes and welds undergoing trenchless installation processes, including horizontal directional drilling, auger boring, impact moling and microtunnelling. Enhance protection provided by anti-corrosion coatings, epoxies, shrink sleeves and other composite wraps.
- Wear protection:** Protects pipes and metal parts against abrasive wear in gravel and sand plants, quarries, sugar mills, oil refineries, grain hoppers, coal chutes, etc.

Technical Data

- Working time**2-5 minutes depending upon temperature
- Cured material life**10 - 20 years depending upon repair quality, repair thickness, condition of pipe, environmental conditions, pipe temperature, etc. Consult Sylmasta for further information and design life for specific applications.
- Initial cure time**7 - 10 minutes
- Functional cure**30 - 45 minutes
- Full cure (maximum properties)**24 hours
- Service conditions**
- Max service temperature**250°C / 480°F (SylShield has been used at 250°C with steam at 20 bar for a two week temporary repair and at 200°C at 20 bar for more than six weeks) (Lab tests show thermal stability up to 300°C)
- Pipe reinforcement**.....For pipe reinforcement, pressure resistance can be designed to the requirements of ASME PCC-2 - Repair of Pressure Equipment and Piping. Consult Sylmasta for further information
- Chemical resistance**Acetone, ammonia, sulphuric acid (30%), ethyl alcohol, mineral spirits, gasoline, MEK, toluene, diesel, hydrochloric acid, Varsol, ethylene glycol, crude oil, hydraulic oil (test period of 40 days)

Storage

SylShield should be stored unopened in its original foil packaging in cool, dry conditions. Piercing or damaging the pouch will cause SylShield to cure prematurely. Under such conditions, it has a shelf life of 24 months from date of manufacture.

Health & Safety

Plastic gloves should be worn when handling SylShield. For health and safety information, please refer to the relevant Safety Data Sheet.