

VISCOWRAP ST

**Amorphous, Apolar, Visco-Elastic, Semi-Solid, Polyolefin Coating
for Moderate Temperatures**

Description

ViscoWrap ST is an amorphous, apolar, visco-elastic, semi-solid, polyolefin coating for corrosion prevention of underground and aboveground substrates for moderate temperatures. It is part of the Viscotaq coating system which consists of a corrosion protective inner layer (ViscoWrap ST) and a mechanical protective outer layer. This coating system offers exceptional corrosion prevention and waterproofing for a variety of substrates.

Uses

- Coating for concrete, steel, PVC, metal, wood, vinyl, and other coatings
- Soil-to-air transitions
- Pipe, flanges, valves and fittings
- Girth welds
- Buried pipelines with minimal surface preparation
- Pipeline coating rehabilitation applications
- CUI applications
- End seal for pipe casing
- Tank chimneys
- Waterproofing for bell and spigot joints

Features

- Impermeable to moisture and gases
- Immediate adhesion to substrate / permanent wetting characteristics
- No primer needed
- Easy to apply, no mixing or messy clean-up
- Minimal surface preparation required (SP2-wire brush)
- Excellent cathodic protection / low cathodic disbondment
- Self-healing characteristics
- Inert material, no deterioration over time
- Resistant to aggressive soil conditions such as water, acid, salts, or soil organics
- Quick long-term protective coating, ready for immediate service
- Contains no solvents, no carcinogens, non-toxic, non-flammable
- Contains fire retardant materials and self-extinguishing
- UV resistant and never cracks or becomes brittle
- Flexible, pliable, conforms to irregular shapes easily
- Freeze / thaw resistant
- Thermal resistance from -45°F to 158°F (-45°C to 70°C)
- Ability to fill voids and anomalies of substrate
- Meets NACE 0109:2019 and ISO 21809-3:2016



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Surface Prep

Surface preparation should include the following:

- Surface inspected prior to application with any defects documented.
- Minimum surface preparation should be ST2/SSPC-SP2 (Hand Tool Clean).
- Once loose material are removed, clean surface with denatured alcohol or acetone to remove any remaining dust, grease, and moisture.
- Surface of substrate should be 5°F (3°C) or greater above the dew point.
- Keep the working area clean and dry at all times. Avoid the presence of water.

Any adjacent coating should be roughened by means of sandpaper or a grinding machine, if applicable. Suggested overlap onto the existing pipe coating is 4" for 30" and smaller diameter and 6" for greater than 30" diameter.

Application

ViscoWrap ST is applied in the following manner:

- Remove the release liner and place the adhesive side onto the substrate (pipe).
- The initial wrap should be a straight circumferential wrap.
- Once completed, wrap the pipe with slight tension and a minimum of ½" overlap.
- Wrap at an angle to create a smooth overlap and to ensure no air pockets are formed during wrapping.
- End wrapping with a straight circumferential wrap.
- For coating repairs and difficult to reach areas Viscowrap ST can be applied in pieces, strips, or individual circumferential wraps (cigarette wrap).

After wrapping of ViscoWrap ST is completed, immediately begin wrapping over the ViscoWrap ST with PE Outerwrap or PVC Outerwrap to complete the Viscotag Coating System. PE Outerwrap or PVC Outerwrap is applied in the following manner:

- PE Outerwrap or PVC Outerwrap should be wrapped with tension and a minimum of 50% overlap.
- The first and termination wraps should be a straight circumferential wrap.
- A ¼" section of ViscoWrap ST should still be visible at each end of the outer wrap application.

Denso™ Glass Outerwrap can be used in place of or in addition to the PVC Outerwrap or PE Outerwrap when additional mechanical protection is required. Glass Outerwrap is applied in the following manner:

- Do not open the foil pouch until ready to apply product.
- Once ready to apply the Denso Glass Outerwrap, remove from the hermetically sealed, foil pouch using protective gloves and place in room-temperature water

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(salt or fresh) for 20-30 seconds. The roll should be immersed in water for a longer time when the environment is cold and / or dry.

- Remove and begin wrapping the surface tightly, overlapping a recommended 50% (55% for severely corrosive environments).
- After wrapping is completed, immediately begin wrapping Denso™ Clear Outerwrap the same direction the layers of Denso Glass Outerwrap were applied to compress it quickly and with tension applied.
- Overwrap each end of the Denso Glass Outerwrap by at least 2 inches (50 mm) to ensure the ends lay flat and the resin is retained.
- Once compressed, use the Denso Perforating Tool to puncture the Denso Clear Outerwrap. This will allow for excess resin, moisture, and carbon dioxide from the reaction to escape. Apply only enough pressure to puncture the Denso Clear Outerwrap and not the layers of Glass Outerwrap.
- When the material has cured, the Denso Clear Outerwrap may be removed. Cure can be checked by using a Shore D gauge on a high point of the resin (avoid measuring near ridges and fibers as the gauge tip can move). The product is ready to be used at a Shore D of 65 or greater.

Cold Weather Installations: Follow normal procedure but add ethylene glycol in the water to prevent freezing and to progress the curing process.

Hot Weather Installations: Follow normal procedure but use ice water to slow down the curing process to allow more working time for installation.

Storage

Store in a dry, well-ventilated area between 40°F and 140°F (4°C to 60°C) in original, unopened containers. Shelf life is unlimited under these conditions. It is recommended that all components be stored between 68°F to 86°F (20°C to 30°C) for 24 hours prior to use for optimum product application characteristics.

Due to the adhesive nature of the product, release films / papers should be kept in place during storage and whenever the material is placed on its side after removal from the case.

Packaging

Tape Width	Tape Length	Rolls*/ Case
in.	ft.	ea.
2" (50 mm)	16.5' (5 m)	20
2" (50 mm)	33' (10 m)	12
4" (100 mm)	33' (10 m)	6
6" (150 mm)	33' (10 m)	4
12" (300 mm)	33' (10 m)	2

ViscoWrap ST

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PROPERTIES	ENGLISH	METRIC
Material State	Semisolid	<i>Semisolid</i>
Thickness (ISO 4593:1993E)	>70 mils	>1.8 mm
Density (DIN 53479)	1.1-1.4	1.1-1.4
Glass Transition Temperature (ASTM E1356-03)	-45.26°F	-42.92°C
Softening Point (ASTM E1356-03)	306°F	152°C
Water Vapor Permeability (ASTM E96/96M-10)	<5.6 x 10 ⁻⁴ lb/day/ft ² /psi	<4 x 10 ⁻⁴ g/day/m ² /Pa
Water Absorption (ISO 62)	<0.03%	<0.03%
Cathodic Disbondment at 73°F (23°C) (ASTM G8-96/ISO 21809-3)	0 mm (Self-healing)	0 mm (Self-healing)
Cathodic Disbondment at 122°F (50°C) (ASTM G8-96/ISO 21809-3)	0 mm (Self-healing)	0 mm (Self-healing)
Volume Resistivity (ASTM D257-07)	>8.7 x 10 ¹² ohm*in	>2.2 x 10 ¹³ ohm*cm
Surface Resistivity (ASTM D257-07)	>6.0 x 10 ¹⁶ ohm*ft ²	>5.6 x 10 ¹⁵ ohm*m ²
Thermal Resistance	-45°F to 158°F	-45°C to 70°C
Dielectric Strength (ASTM D149-09)	>445 KV/in	>17.5 kV/mm
Impact Strength (ISO 21809-3 (2016) Annex D)	>133 in-lb _i	>15 J (Immediate)
Indentation (ISO 21809-3 (2016) Annex E)	No holidays	No holidays
UV/Weather Cycle Test (ASTM D4587, 1000 Hours)	Excellent, rating 10	Excellent, rating 10
Wet Adhesion Test (CSA Z245-20-06 Sec. 12.14)	Excellent	Excellent
Chemical Resistance in Aggressive Soils Tested in Sulfuric Acid (30%), Nitric Acid (10%), Phosphoric Acid (20%), Hydrochloric Acid (10%)	Excellent No deterioration, 72 hours at 158°F / No corrosion, 72 hours at 158°F	Excellent No deterioration, 72 hours at 70°C / No corrosion, 72 hours at 70°C

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