SKPS

Sap & Kaps Petroleum Services l.l.c

FIELD JOINT COATING PROTECTION

SYSTEM DESCRIPTION

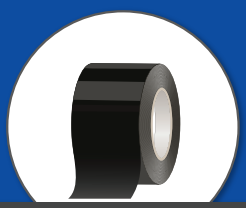
1051/TD/20 REV02

info@skps.com

Introduction

VISCOTAQ® Viscowrap HT is an amorphous (non-crystalline) a-polar viscous elastic solid polyolefin coating in roll form used for the protection of under and aboveground substrates against corrosion.

VISCOWRAP



OUTER WRAP

COMPOSITE WRAP

TOPCOAT

VISCOTAQ® VISCOWRAP is a 2-layer system that consists of a corrosion protective inner wrap and mechanical protective outer wrap or outer coating. VISCOTAQ® has proven to be non shielding due to its van der Waals bonding on molecular level and its amorphous nature forming a continuous coating. VISCOTAQ® is a unique viscous-elastic non crystalline a-polar polyolefin for the protection of shaped and non-shaped substrates. VISCOTAQ® offers the pipeline industry an unrivaled technology when it comes to corrosion prevention. Unlike other coatings VISCOTAQ® always has a permanent and intimate contact with the surface of a substrate.

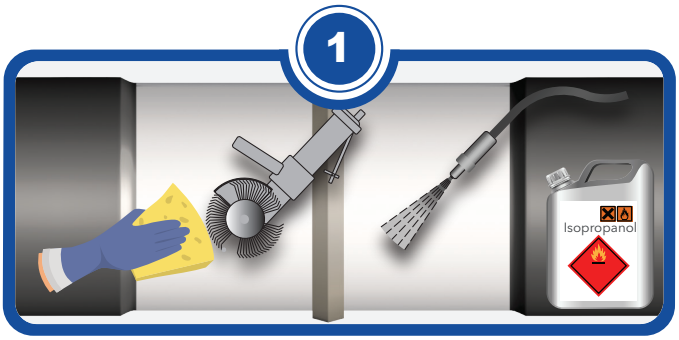
FEATURES

- Softening point +152,8° C/+307,04° F.
- Glass transition temperature -40° C/-40° F CD value 0 - 3 mm (ISO 21809-3) ASTM G8) at +23° C/+73,4° F.
- Self healing in case of small damages.
- Impervious to moisture and gases.
- Adhesion to the substrate without primer.
- Remaining flexibility over decades.
- Completely amorphous, forms one continuous coating.
- Permanent wetting characteristics.
- Eliminates Microbiological Induced Corrosion (MIC).
- No curing time.
- Extreme high chemical resistance.
- No sensitivity to salts and osmosis.
- Cohesive fracture.
- 100% inert formulation: no reactive groups and no deterioration in the course of time.

System Description

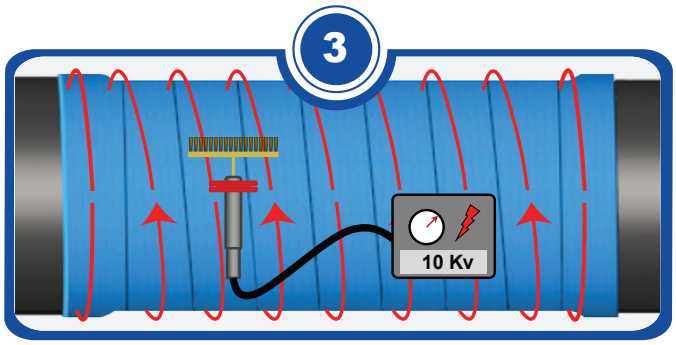
SURFACE PREPARATION & CLEANLINESS

01 Recommended surface preparation SA 2-½ or SSPC/ SP-10. Surface preparation minimum SSPC / SP-2 .
Degrease with Isopropanol. Cleaning is required.



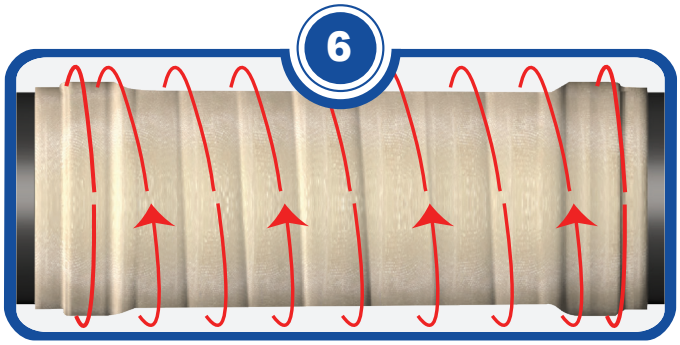
VISCOTAQ® VISCOWRAP APPLICATION

02 Viscotaq® Viscowrap is applied by removing the release liner and placing adhesive side on the pipe.Once initial straight circumference wrap is completed, wrap with slight tension and a minimum 1/2" overlap. Wrap at an angle to create a smooth overlap.



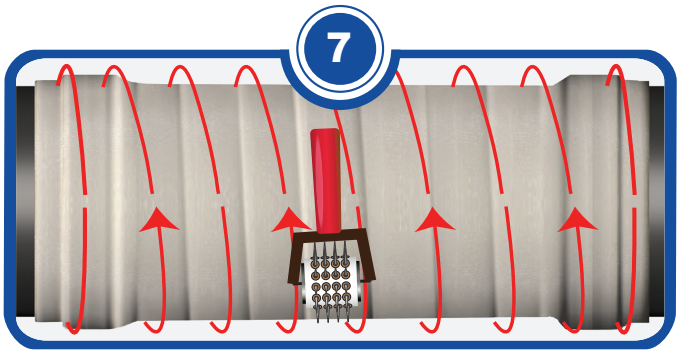
PU COMPOSITE WRAP APPLICATION

03 Start applying PU composite wrap with 2circumferential wrap. During application of PU composite wrap should be wetted by spraying with water. Apply composite wrap with minimum tension and 50% circumeference overlap.



COMPRESSION FOIL

04 Wrap compression foil. Start beyond the extremity of PU composite wrap and wrap with tension. Use puncture roller to cautiously perforate the compression foil. During the curing of PU composite wrap, some resin might get visible through performations.Remove compression foil after the PU composite is cured.



UV RESISTANT TOP COAT

05 PU composite has to be painted with an UV resistant top coat for above ground applications.

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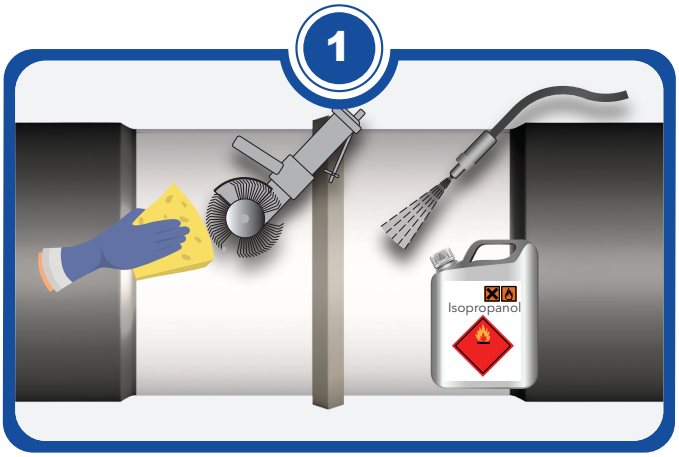

VISCOTAQ® VISCOWRAP APPLICATION

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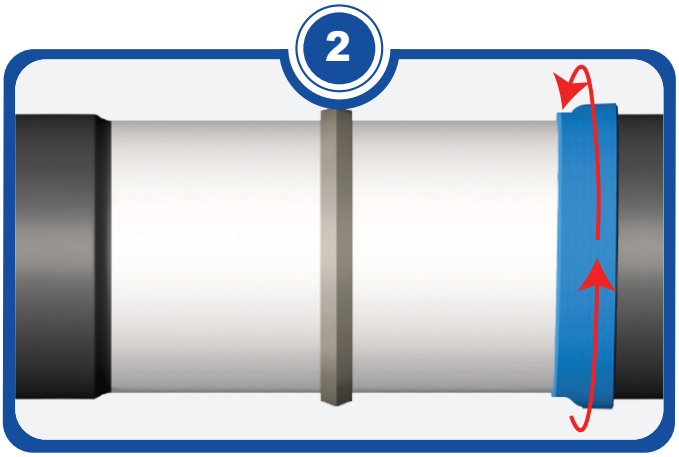

VISCOTAQ® VISCOWRAP APPLICATION

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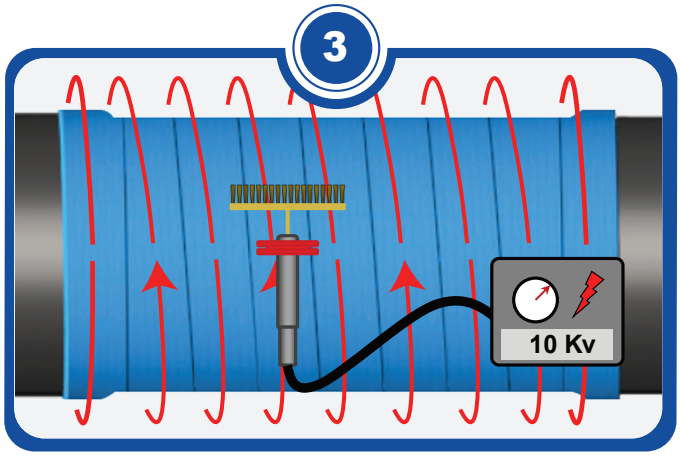
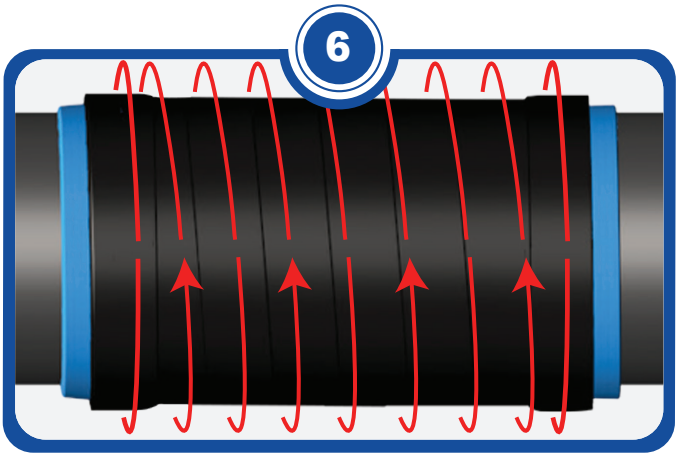
A Holiday test using a high voltage tester shall be carried out on the Viscotaq® Viscowrapprior to the application of any outerwrap. The test shall be carried out at a minimum of 10 Kv.



OUTER WRAP, PE/PVC APPLICATION

05 Outer Wrap should be wrapped with tension and a minimum of 50% overlap. First wrap and termination wrap should be a straight circumference wrap. A 1⁄4" section of Viscotaq® Viscowrap should still be visible at after the PVC or PE Outer Wrap had been applied.



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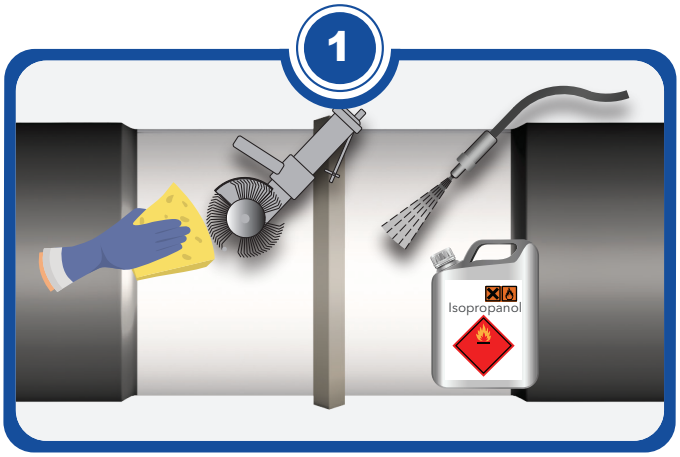
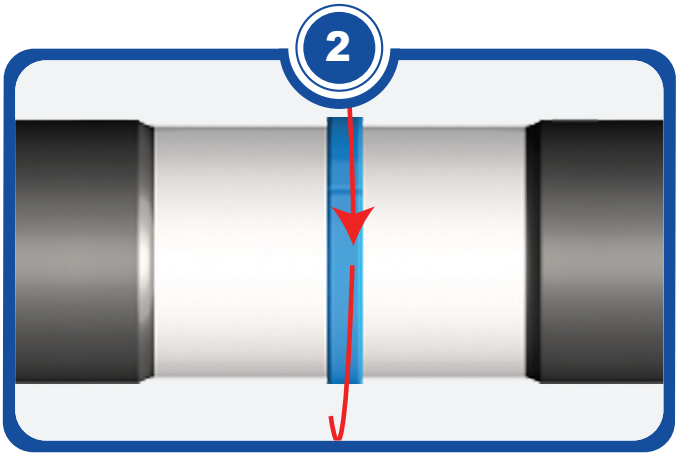


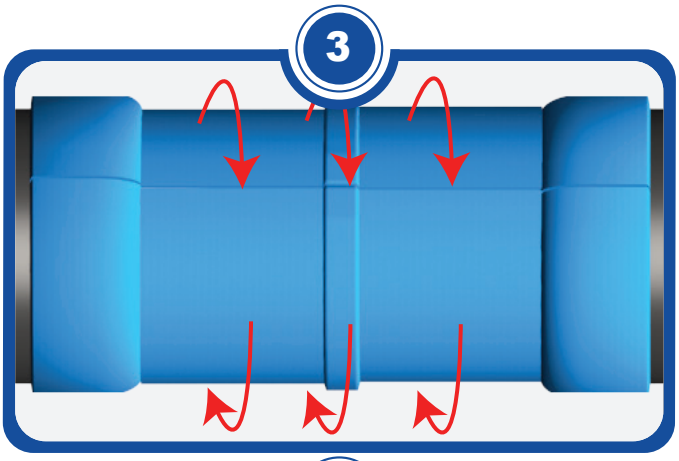
VISCOTAQ® VISCOWRAP APPLICATION

02 Start with a circumferential wrap of 100mm wide Wrappingband over the weld. Apply with minimum tension. Avoid air enclosures.



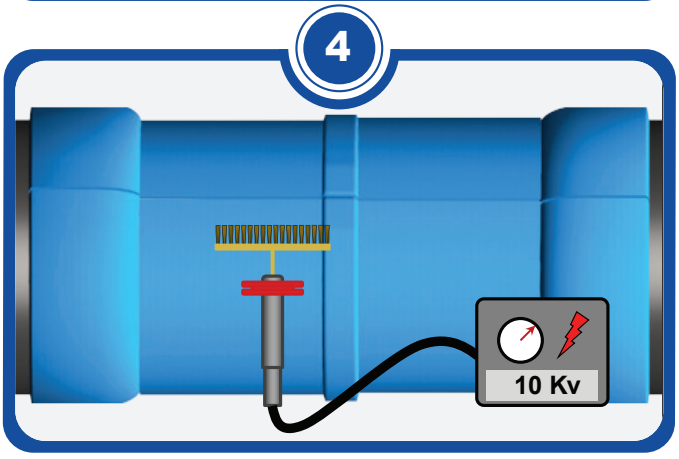
VISCOTAQ® VISCOWRAP APPLICATION

03 Start with circumferential wrap of Viscotaq® Viscowrap at 10 O' clock position by making 100mm overlap from one end to another end. Widths of the Viscotaq® Viscowrap depending on client specific field joint and cutback dimension. Apply with minimum tension.



HOLIDAY TEST

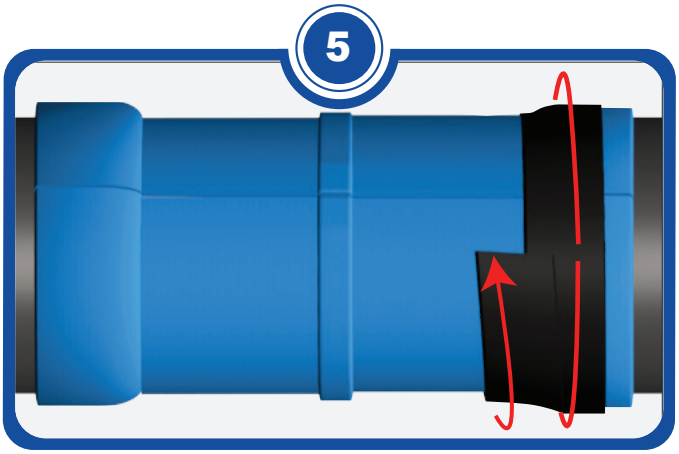
04 A Holiday test using a high voltage tester shall be carried out on the Viscotaq® Viscowrap prior to the application of any outerwrap. The test shall be carried out at a minimum of 10 Kv.



System Description

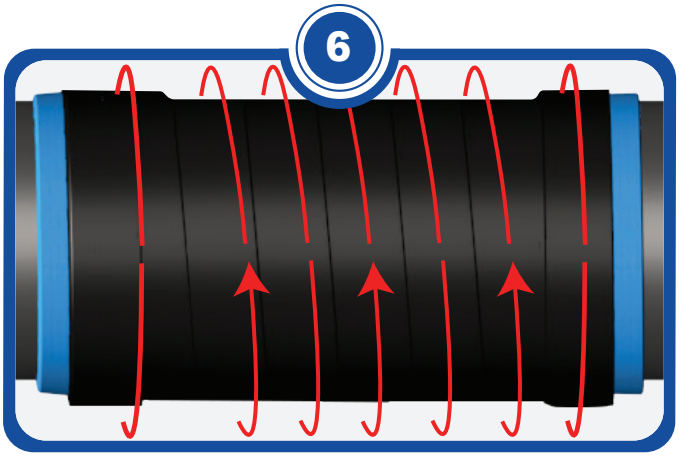
OUTER WRAP, PE/PVC APPLICATION

05 Begin application of outerwrap with a circumferential wrap. Keep 1/4" viscowrap exposed. Apply outerwrap with tension. Start on the 9 O clock position with the outerwrap facing downwards. Outer Wrap should be wrapped with tension and a minimum of 50% overlap.



OUTER WRAP, PE/PVC APPLICATION

06 A 1⁄4" section of Viscotaq® Viscowrap should still be visible at after the PVC or PE Outer Wrap had been applied.



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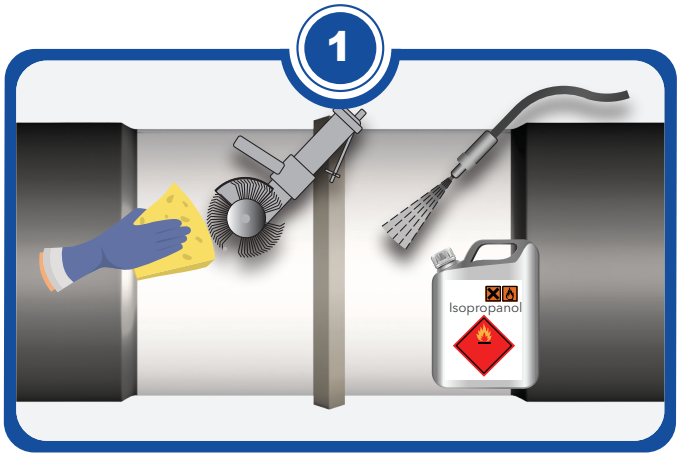
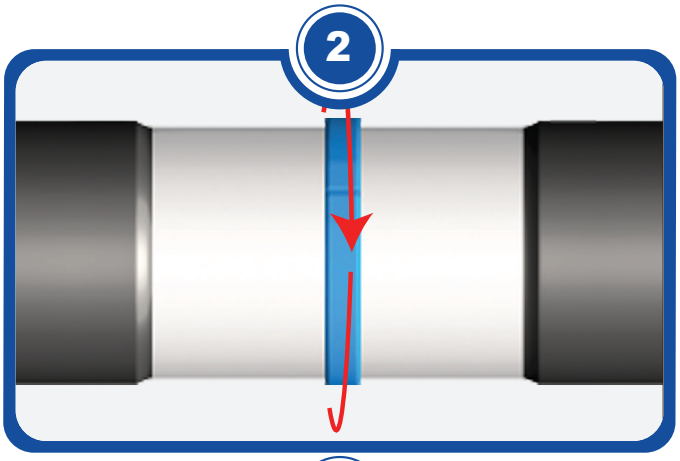


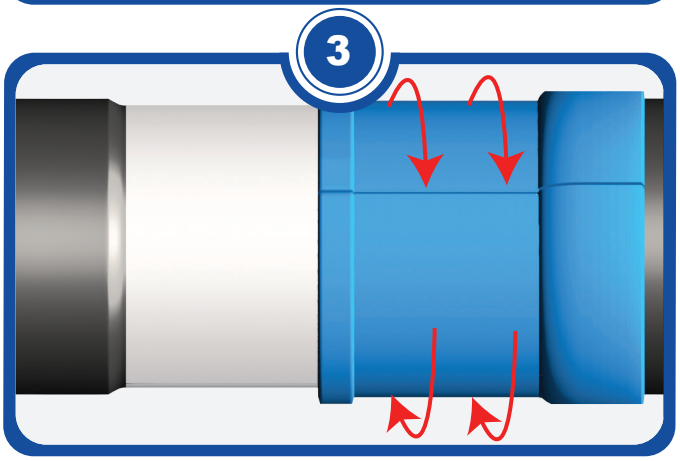
VISCOTAQ® VISCOWRAP APPLICATION

02 Start with a circumferential wrap of 100mm wide Wrappingband over the weld. Apply with minimum tension. Avoid air enclosures.



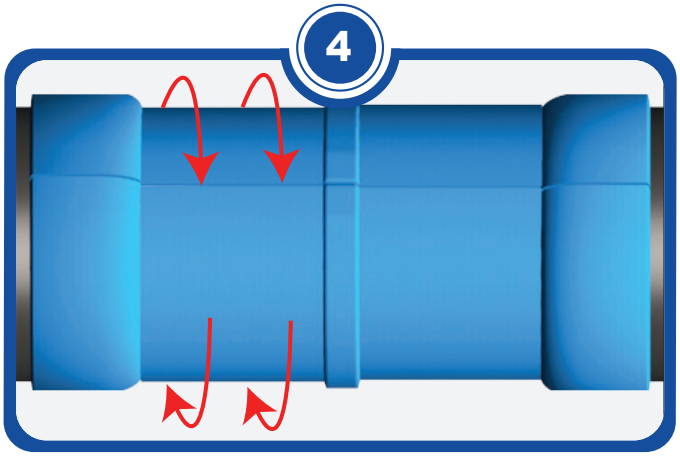
VISCOTAQ® VISCOWRAP APPLICATION

03 Start with circumferential wrap of Viscotaq® Viscowrap at 10 O' clock position by making 50mm overlap from the weld on one end and 100mm overlap to factory coating. Widths of the Viscotaq® Viscowrap depending on client specific field joint and cutback dimension. Apply with minimum tension.



VISCOTAQ® VISCOWRAP APPLICATION

04 Apply the second circumferential wrap of Viscotaq® Viscowrap at the 10 O' clock position, with an overlap of approx. 50mm over the weld.



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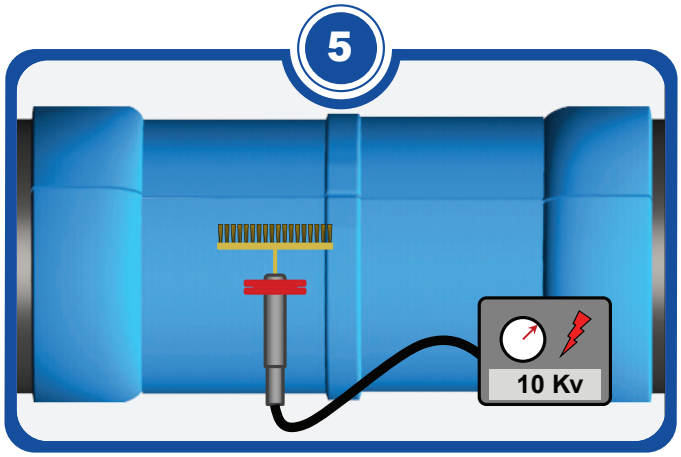
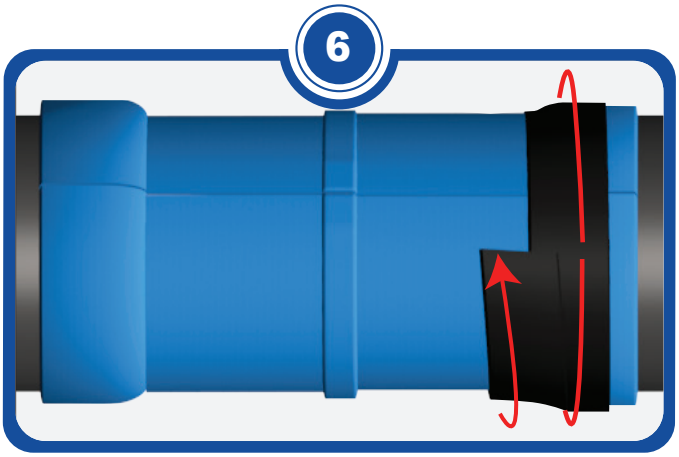


OUTER WRAP, PE/PVC APPLICATION

06 Wrap the strips around the pipe with slight tension and avoid air inclusions.

Outer Wrap should be wrapped with tension and a minimum of 50% overlap.



OUTER WRAP, PE/PVC APPLICATION

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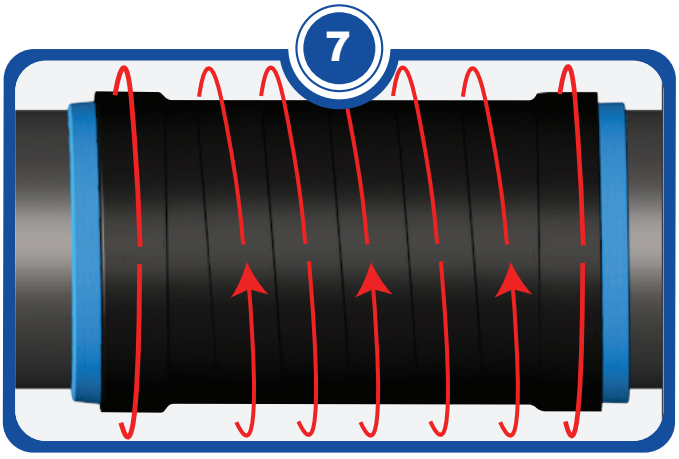

Technical Details

USE AND APPLICATION

To determine the proper choice of Viscotaq® materials with respect to design and/or operating temperature one can let the ISO 21809-3:2016 standard be the driving factor. In any case, advice can be given from Amcorr which will be leading. Underneath table shows the different Viscotaq® products and the applicable temperature classification of ISO 21809-3:2016.
Note that the temperature range of the products is wider and that this standard is applicable to underground field joint applications. Since there are multiple standards nowadays describing the Visco-elastic style technology (amorphous low viscosity polyolefin based coatings), advice and recommendations for your specific project can be obtained directly from skps Products and Services and/or it's representatives.

Inner	Outer	Standard	Tmin	Tmax
Viscowrap ST	PVC or PE tape	ISO21809-3:2016	-40 ºC	+ 50 ºC
Viscowrap HT	PVC or PE tape	ISO 21809-3:2016	-40 ºC	+ 70 ºC
Viscowrap XHT	HDPE Outerwrap	ISO 21809-3:2016	-40 ºC	+ 95 ºC
Viscowrap XHT	Composite coating*	ISO 21809-3:2016	-40 ºC	+ 110 ºC

Measurement	Value	Method
Glass Transition	<-40° C/-31° F	ASTM E1356-03
Material State	Semi-Solid	NA
Density	1.1-1.4	DIN 53479
Thickness	>1.8 mm/ >70 mils	ISO 4593:1993(E)
Softening Point	152.09° C/306° F	ASTM E1356-03
Yield Point	Yes	ISO 3219
Water Vapor	< 4 *10-4 g/day/m2/Pa	ASTM E96/96M-10
Water Absorption	< 0,03%	ISO 62
Water penetration	<0.14% (1800 hrs, 6V, 3% NaCl)	ASTM G9-87
Cathodic Disbondment	< 3 mm	ASTM G8-96
	0 mm, Self-healing	ISO 21809-3
Dielectric Strength	>17.5 kV/mm	ASTM D149-09
Tensile Strength	222 N/cm	ASTM D638
Impact Strength	> 15 J (immediate)	EN 12068:1998 Annex H
	> 18 J (self-healing, 96 hours)	
Indentation	No holidays	EN 12068:1998 Annex G
Peel Adhesion (total system)	Cohesive fracture, >0.2 N/mm	ISO 21809-3
Heat ageing 95 °C	Po/P1 >0.75	ISO 21809-3
Hot water immersion 95 °C	P0/P1 >0.75	ISO 21809-3
Wet Adhesion Test	Excellent	CSA Z245-20-06