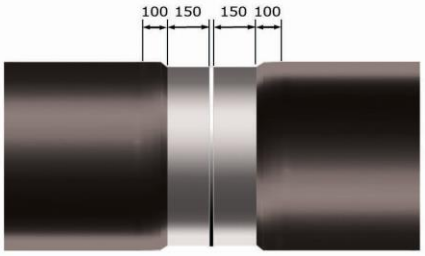
VISCOTAQ® Girth Weld Application

VISCOTAQ® is a unique viscous-elastic amorphous a-polar polyolefin for the protection against corrosion of underground and aboveground substrates. VISCOTAQ'S® molecular chemistry is unique and designed in such a way that the viscosity gives it permanent wetting characteristics; forcing the material to flow into the pores and anomalies of the substrate. The elasticity of the product gives it the strength and feeling of a solid. VISCOTAQ® always remains in a semi solid state, offers immediate adhesion without the need for primer, requires minimal surface preparation and forms a homologue, continuous, self-healing corrosion protective coating.

Field welded joints, also called girth welds, can be coated with VISCOTAQ VISCOWRAP and an Outer Wrap for corrosion prevention.

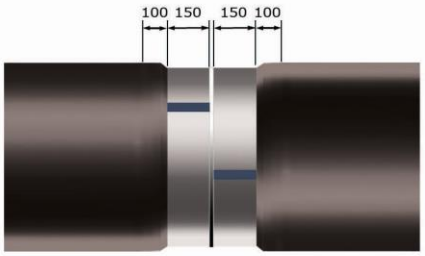


Materials necessary

- VISCOTAQ VISCOWRAP (12"x33'), part # SA 42312
- PE or PVC Outer Wrap
- PU COMPOSITE Wrap (if applicable)

Preparation

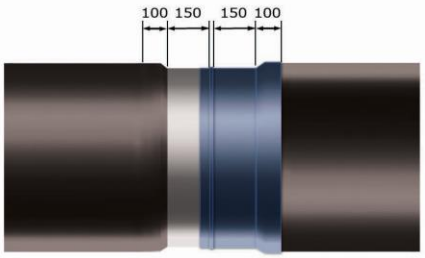
Excavate the field-welded joint in such way that it is freely accessible from all sides. Make sure that there is enough space under the pipeline. The minimum excavated space is 12" from the bottom of the trench to the lower part of the pipeline.



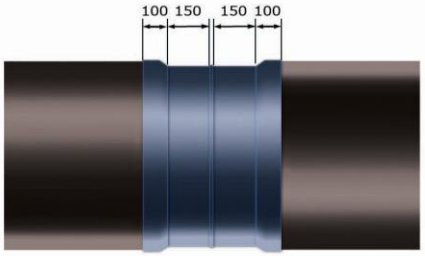
- Keep the working area clean and dry at all times. Avoid the presence of water.
- Regularly check to make sure the surface of the pipeline is 4F+ above the dew point.
- Protect the working area from rain and other moisture.

Surface preparation

The surface area to be coated should be inspected prior to coating; known defects must be documented and photographed prior to application



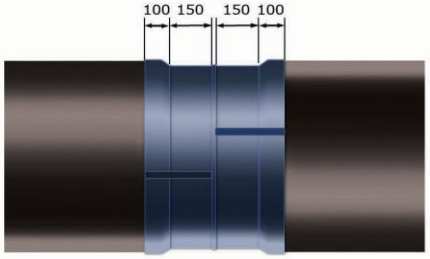
- In case of rehabilitation the old coating should be removed. Remove loose parts, grease, debris and moisture.
- The minimum surface should be ST2/ SSPC-SP2 (Hand Tool Clean), however where possible prepare to ST3/SSPC-SP3 (Power Tool Clean). In order to obtain best values blast the pipe to a surface level near white metal SA 2.5/SSPC-10.
- Remove sharps edges on the welds. This can be accomplished with a grinding machine.
- Bevel the factory/adjacent coating of the pipeline to which a connection must be made to an angle of 45 degrees.
- The adjacent coating should be roughened by means of sand paper or a grinding machine. Advised overlaps onto the existing pipe coating: < 30" pipelines 4"overlap, > 30" pipelines 6" overlap.



Application of the VISCOTAQ VISCOWRAP (Inner Wrap)

- If weld area to be coated including overlap (see surface preparation section for overlap requirements) onto existing coating is ≤12",a single cigar wrap of VISCOTAQ VISCOWRAP, part # SA 42312 (12"x33') shall be applied. If girth weld area to be coated is > 12" multiple individual wraps can be made.

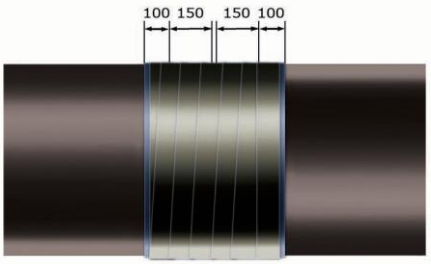
- VISCOTAQ VISCOWRAP is applied by removing the release liner and placing adhesive side on the pipe or substrate.
- Cigar Wrap the VISCOWRAP with slight tension with a minimum 2" overlap.
- If multiple wraps are needed, overlap the individual wraps a minimum of 1".
- VISCOTAQ VISCOWRAP shall be gently smoothed out by hand to ensure there are no wrinkles, folds, or entrapped air. Ensure that the wrap has completely adhered to the substrate.
- Test the coating with a holiday detector at minimum 10 kV.



OUTER WRAP is applied for mechanical protection of the VISCOTAQ VISCOWRAP; either of the following outer wraps can be used. Where heavy mechanical forces are expected, Composite Wrap is recommended.

Application of VISCOTAQ PE or PVC Outer Wrap

- PE/PVC Outer Wrap shall be wrapped with a 50% minimum overlap with tension.
- The first wrap should be straight, then followed by wrapping with tension down the pipe. .
- The last section should end on a 4 o'clock position and be applied onto the pipe without tension.
- A 1⁄4" section of VISCOWRAP material should still be visible after the PVC/PE Outer Wrap has been applied.
- In case the PVC/PE Outer Wrap is applied in above ground situations, the last section of the PVC/PE Outer Wrap should be applied without tension and at the spot where the last sections is applied the surface underneath should be lightly roughened with sandpaper and cleaned with isopropyl alcohol to ensure proper adhesion.



Application of VISCOTAQ COMPOSITE Wrap

- Composite wrap is applied in situations where heavy mechanical impacts can be expected.
- Remove VISCOTAQ Composite Wrap from package, wearing rubber gloves, and spray wrap with water.
- Wrap Composite Wrap over ViscoWrap. Wrap with 50% overlap and continue to spray with water as applying. A double thickness of Composite Wrap is sufficient for most areas. When applying at pipe saddles and supports, additional thickness may be required.
- After Composite Wrap is applied, wrap with plastic wrap (shrink-wrap) to keep moisture in during curing.
- Gently poke holes in plastic wrap for ventilation. Holes should be every few inches around the circumference of the pipe.
- Remove plastic wrap (shrink-wrap) when Composite Wrap has cured. System can be backfilled after 30 minutes. Average curing time to full cure is 1-3 hours.
- Composite Wrap can be painted if desire