

## STOPAQ® OUTERWRAP HSPEX

### Product Information

**Product description:** Stopaq® Outerwrap HSPEX is an outer wrap tape providing mechanical protection to corrosion preventing coating systems comprising e.g. Stopaq® Wrappingband (various types). It is made of a radiation cross-linked high density polyethylene backing (HDPE) and high tack butyl rubber adhesive, provided with a siliconized PE release liner for proper unwinding of the roll. Stopaq® Outerwrap HSPEX is well suited for above ground, underground and submerged applications. The butyl rubber adhesive layer provides good adhesion to the backing of Stopaq® Wrappingband, to existing plant applied PE coating, as well as to its own backing. Stopaq® Outerwrap HSPEX is a highly flexible UV-resistant tape, providing good resistance of the complete coating system to impacts, indentations and abrasion, as well as resistance against the influences from various chemicals.

#### Features:

- Cold applied tape
- High tack adhesive
- Good conformability
- Good adhesion to Stopaq® Wrappingband as well as to its own backing
- Provides excellent impact and indentation resistance.
- Very high resistance to ageing and weathering, even when exposed to maximum or minimum service temperature for longer periods of time.

#### Benefits:

- Very suitable for manual application
- Easy to stretch and to apply
- Suitable for cold weather installation
- Resists impacts and indentations which may occur during installation and backfilling.

### Application examples

**Pipes and Vessels:** Provides mechanical protection of Stopaq® corrosion preventing coating systems applied on pipeline structures and reservoirs.

**Field joints:** Provides mechanical protection of Stopaq® corrosion preventing coating systems applied on girth-weld joints of on-shore and offshore pipelines.

**Pipe fittings:** Provides mechanical protection of Stopaq® corrosion preventing coating systems applied on pipe fittings like elbows, bends, tees, reducers and flanges.

**Wet or immersed structures:** Provides mechanical protection of Stopaq® corrosion preventing coating systems applied on wet or immersed steel structures.

### Product properties of Stopaq® Outerwrap HSPEX

<b>Colour</b>	Black
<b>Thickness</b>	Backing 0,25 mm [10 mils] Total 0,90 mm [36 mils]
<b>Temperature ranges</b>	Service: -45 to +50 °C [-49 to +122 °F] Short term max.: +70 °C [158 °F]
<b>Peel strength between layers</b>	Before ageing: <sup>A)</sup> – @ +23 °C [73 °F]: ≥ 0,2 N/mm [≥ 18 ozf/in] (1,3 N/mm typical [146 ozf/in]) – @ +50 °C [122 °F]: ≥ 0,02 N/mm [≥ 1.8 ozf/in] (0,2 N/mm typical [23 ozf/in])  After thermal ageing for 100 days @+70 °C[158 °F] – P'100 / P'o: ≥ 0,50 (1,3 typical) <sup>A)</sup>  After hot water immersion for 100 days @+50 °C[122 °F] – P'100 / P'o: ≥ 0,75 (1.0 typical) <sup>A)</sup>
<b>Peel strength to plant coating PE</b>	Before ageing: <sup>A)</sup> – @ +23 °C [73 °F]: ≥ 0,8 N/mm [≥ 73 ozf/in] – @ +50 °C [122 °F]: ≥ 0,10 N/mm [≥ 9.0 ozf/in]  After thermal ageing for 100 days @+70 °C[158 °F] – P'100 / P'o: ≥ 0.75 <sup>A)</sup>  After hot water immersion for 100 days @ +50 °C[122 °F] – P'100 / P'o: ≥ 0.75 <sup>A)</sup>
<b>Thermal ageing resistance</b>	After thermal ageing for 100 days @+70 °C[158 °F] <sup>A)</sup> – Elongation at break E100 / E0: ≥ 0,75 (0,9 typical)

### Properties of coating system comprising Stopaq® Wrappingband CZH and Stopaq® Outerwrap HSPEX

<b>Total thickness</b>	3,6 – 4,0 mm [145 – 160 mils]
<b>Self-healing test</b>	Self-healing of an artificial defect of Ø 6 mm [1/4"]: – @ +23 °C [73 °F]: no holiday (≤ 24 hr.) – @ +50 °C [122 °F]: no holiday (≤ 24 hr.)
<b>Impact resistance</b>	Tested at 15 J [132 in.lbf] and @ +23 °C [73 °F] <sup>A)</sup> – no holidays
<b>Indentation resistance</b>	Tested @+23 °C [73 °F] and @+50 °C [122 °F] with test pressure 10,0 N/mm <sup>2</sup> [1450 psi]: <sup>A)</sup> – Residual thickness ≥ 0,6 mm [1/4"] (within 1 hour after removal of load)
<b>Cathodic disbondment resistance</b>	Tested @+23 °C [73 °F] and @+50 °C [122 °F]: <sup>A)</sup> – No holiday, disbondment 0 mm. Artificial defect Ø 6 mm [1/4"] self-healed within 24 hours

<sup>A)</sup> ISO 21809-3:2016 coating type 13A

### General order information

<b>Product</b>	Stopaq® Outerwrap HSPEX is available in rolls, wound on cardboard cores, packed in cardboard boxes:
<b>Art. Nr.:</b>	<b>Product dimensions and contents:</b>
1290-01524	2 inch x 50 ft, 24 rolls/box, 648 rolls/pallet
1291-01524	3 inch x 50 ft, 16 rolls/box, 432 rolls/pallet
1292-01524	4 inch x 50 ft, 12 rolls/box, 324 rolls/pallet
<b>Handling</b>	Handle with care. Keep boxes upright.
<b>Storage</b>	Store indoor, clean and dry, away from direct sunlight in a cool place below +40 °C [104 °F].

Application instruction - Job preparation	
<b>Tools, equipment and auxiliaries</b>	– Scissors, knife, and measuring tape
<b>Additional coating materials</b>	Stopaq® Outerwrap HSPEX is applied as part of a coating system that consists of other Stopaq® coating materials, e.g. Corrosion preventing materials: – Stopaq® Wrappingband (various types) – Stopaq® Paste (various types) Additional mechanical protective materials: – Stopaq® Polyester – Stopaq® Outerglass Shield XT Grey
<b>High humidity</b>	Stopaq® Outerwrap HSPEX can be applied in a humid atmosphere. The substrate should be free from condensing water which can be reached by keeping the temperature at least 3 °C [6 °F] above dew point.
<b>Work area and substrate</b>	The substrate should be dry, clean and protected against negative weather influences. Temperature of the substrate should preferably be between +10 °C [50 °F] and +30 °C [86 °F].
<b>Product conditions</b>	Stopaq® Outerwrap HSPEX should be dry and the temperature should preferably be between +10 °C [50 °F] and +30 °C [86 °F] for the ease of application.

Application instruction - Brief version	
Specific application instructions are available at Seal For Life Industries, e.g. for wrapping of pipes, field joints, fittings, etc.	
<b>Example: Pipe wrapping</b>	<p>Stopaq® Outerwrap HSPEX has a release liner on the adhesive side of the tape that must be removed just prior to application onto substrates.</p> <p>Horizontal pipelines should be wrapped circumferentially from left-to-right or from right-to-left. Pipelines positioned with an angle deviating from horizontal should be wrapped from bottom to top (e.g. risers).</p> <p>In general Stopaq® Outerwrap HSPEX should be applied with tension by gently pulling the roll of material, unless stated otherwise in specific application instructions.</p> <p>Avoid air inclusions. Avoid tenting and bridging.</p> <p>Start wrapping Outerwrap HSPEX with two full circumferential wraps perpendicular to the pipe, leaving 3 mm [1/8"] of the previously applied Stopaq® Wrappingband visible at the boundary.</p>

<b>Example (continued)</b>	<p>After the first circumferential wrap, consecutive wraps should have an overlap of ≥ 50%, which can be obtained by spiral application of Outerwrap HSPEX.</p> <p>Continue spiral wrapping until reaching the boundary of the area to be coated, leaving 3 mm [1/8"] of the previously applied Stopaq® Wrappingband visible at the boundary.</p> <p>When more than one roll of Outerwrap HSPEX is needed to continue wrapping, an overlap on the end of the previously applied Outerwrap HSPEX should be created of at least 100 mm [4"].</p> <p>End wrapping with two full circumferential wraps perpendicular to the pipe. End with a quarter circumferential wrap of Outerwrap HSPEX without tension. In case of wrapping on horizontal pipes, the tape end should face downwards ending at 3 o'clock position. Cut off in a tie-form.</p> <p>The applied Outerwrap HSPEX must look smooth and tight and should be shaped around all details and into corners.</p>
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Handling and commissioning	
<b>Exposure to loads</b>	Objects coated with Stopaq® coating systems should not be exposed to excessive loads e.g. from supports- or lifting equipment.
<b>Immersion or burying</b>	Immersion or burying is possible immediately after completion of the coating application. Consult data sheets for specific instructions of additional materials used. Backfill and compact with clean sand and filling material without sharp stones or hard lumps of soil.

Information	
<b>Documentation</b>	Extensive information is available on our web-site. Application instructions and other documentation can be obtained by contacting our head office, from our local distributor or by sending email to <b>info@stopaq.com</b>
<b>Certified staff</b>	Application of the described coating system should be carried out by certified personnel.



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DISCLAIMER: Seal For Life Industries warrants that the product conforms to its chemical and physical description and is appropriate for the use stated on the technical data sheet when used in compliance with Seal For Life Industries' written instructions. Because many installation factors are beyond the control of Seal For Life Industries, the user shall determine the suitability of the products for the intended uses and assume all risks and liabilities in connection herewith. Seal For Life's liability is stated in its General Terms and Conditions of Sale. Seal For Life Industries makes no other warranty either express or implied. All information contained in this technical data sheet is to be used as a guide and is subject to change without notice. This technical data sheet supersedes all previous data sheets on this product.