STOPAQ®
Self-healing corrosion prevention & sealant technology
SEALFORLIFE

PRODUCT DATA SHEET

STOPAQ® VINYL ESTER

Product Information

Product description: Stopaq® Vinyl ester is an epoxy novolac vinyl ester resin pre-impregnated glass-fibre reinforced outer wrap material, curing by means of Ultraviolet light.

Stopaq® Vinyl ester is especially designed for continuous operation at high temperatures. It is applied on top of Stopaq® corrosion preventing coating systems to provide additional resistance against mechanical impacts, weathering, UV-radiation and chemicals.

After curing with UV-light, Stopaq® Vinyl ester forms a hard and rigid shell on top of previously applied Stopaq® coating systems.

Features:

- Fast and easy to apply
- High resistance to mechanical impacts and indentations
- Long-term resistance to ageing effects, even when used continuously at maximum temperature specified
- Resistant to cold, hot, wet and chemically aggressive environments
- Wide operational temperature range
- Long pot life when sheltered from UV-light sources

Benefits:

- Fast curing, relatively independent from ambient temperature
- Complete curing can be obtained by UV-A light sources or by sunlight
- Low styrene emission
- Top coats can be applied immediately after complete curing

Application examples

Soil-to-air transitions of pipelines: Rigid mechanical protection of Stopaq® corrosion preventing coating systems on risers against soil shear, mechanical impacts, indentations and weathering.

Field joint coatings: Rigid mechanical protection of Stopaq® corrosion preventing coating systems on pipeline girth welds against soil shear, mechanical impacts and indentations.

Pipe saddles: Rigid mechanical protection of Stopaq® corrosion preventing coating systems on pipe saddles against indentations and abrasion by movements of the pipeline.

Pipelines and fittings: Rigid mechanical protection of Stopaq® corrosion preventing coating systems on above ground and buried pipeline sections, bends, tees, valves and flanges against soil shear, mechanical impacts, indentations and weathering.

Product properties of Stopaq® Vinyl ester		
Colour	Grey (opaque)	
Thickness	2 mm (1.5 mm on request)	
Density	1.7 g/cm³	
Light sources for curing	UV-A lamps (wavelength 380 – 400 nm) Sunlight	
Curing time to final hardness	20 – 60 minutes, depending on temperature and UV-light intensity	
Temperatures	Ambient during application: Operation:	Above -15°C -45°C to +135°C
Heat distortion temperature	≥ 255°C (ASTM D648)	
Hardness	Barcol: ≥ 60 (ASTM D-2583)	
Elongation at break	1.0 % (ISO 527, for 2 mm thickness)	
Impact resistance	Izod: ≥ 60 kJ/m² (ISO 180, for 2 mm thickness)	
Tensile strength	≥ 70 MPa (ISO 527, for 2 mm thickness)	

General order information		
Product	Stopaq® Vinyl ester is supplied in rolls with various widths and lengths, provided with light-blocking foil, packed on cardboard cores in cardboard boxes:	
	Art. Nr.:	Product dimensions and contents:
	1153	2mm x 180mm x 10m, 3 rolls/box
	1150	2mm x 600mm x 10m, 1 roll/box
		1.5 mm thickness on request
Handling	Handle with care. Avoid unnecessary exposure to light	
Storage	Store in a cool, dark, dry, and well ventilated place in original light-blocking foil in original cardboard boxes. Storage temperature between +5°C and +25°C. Shelf-life ≥ 6 months when stored in original package. Do not use if product is hardened.	

Application instruction - Job preparation

OHSE measures	Consult Safety Data Sheet for applicable exposure controls and personal protection
Tools, equipment and auxiliaries	– Scissors, knife, measuring tape, application roller – UV-A lamps (depending on surface dimensions, two or more lamps are needed), or – in case of curing by sunlight – UV-reflective mirrors. – Personal protective gear according to Safety Data Sheet, UV-blocking safety glasses.
Additional coating materials	– Stopaq® Compression Foil – Stopaq® Vinylester Gelcoat
Ambient conditions	Ambient temperatures should be above -15ºC. During application of Stopaq® Vinyl ester, the rolls, the cut pieces of material and the work area should be shielded against: – UV-radiation and light to prevent premature curing. – Water, rain, moisture and condensing water on the substrate to prevent detrimental effects on the curing process. Premature curing of the sheets of Vinyl ester may occur when ambient UV intensity is (too) high. It should then be considered to conduct application in UV-sheltered habitats, or even shift to application at night time.
Work area and substrate	The substrate should be dry and clean. The substrate should be free from condensing water which can be reached by keeping the temperature at least 3°C above dew point.
Product conditions	Stopaq® Vinyl ester should be dry and the temperature should preferably be between +10°C and +20°C for the ease of application.
Calculation of material consumption	Stopaq® Vinyl ester is applied in straight wraps perpendicular to the pipe with the following overlap-dimensions: – Circumferential overlap: ≥ 50 mm – Side-by-side overlap of consecutive pieces: ≥ 30 mm

Application instruction – Brief version

See specific Stopaq coating instructions for e.g. soil-to-air risers, field joints, pipe wrapping, coating of fittings, etc.

Cutting to size	Take the roll of Stopaq® Vinyl ester from its original package and cut off the appropriate length. Immediately after cutting, the remaining roll of Stopaq® Vinyl ester shall be stored into its original package to prevent premature curing.
Release liners	The inner release liner (yellow colour, opaque appearance) and the outer release liner (colourless, transparent) must be carefully removed from the Stopaq® Vinyl ester prior to wrapping.
Wrapping	Start wrapping the cut piece of Stopaq® Vinyl ester, complete the full circumferential wrap while applying slight tension and create a circumferential overlap of ≥ 50 mm. With consecutive wraps: – circumferential overlaps shall be made alternatingly at opposite sides of the object. – side-by-side overlaps should be ≥ 30 mm onto the previously applied piece of Vinyl ester. Minimize air entrapment underneath the Vinyl ester. An application roller may be used to shape the Vinyl ester towards the contour of the coated object.
Compressing and fastening	Prior to curing the applied pieces of Stopaq® Vinyl ester should be compressed and fastened by tensioned wrapping with Stopaq® Compression foil on top of the applied Vinyl ester. Compression foil should be spirally wrapped with an overlap of ≥ 50%.
Curing	Place UV-lamps – or, in case of curing by sunlight, the reflective mirrors - around the object coated with Stopaq® Vinyl ester. Ensure that the entire coated surface will be enlightened. Switch on the UV-lamps; be careful not to watch UV-light sources without adequate eye protection! After curing time has elapsed, check for completion of curing. The cured Vinyl ester shall feel hard.
Removing foil	After curing the Compression Foil should be removed from the Vinyl ester.
Coating of Vinyl ester	Stopaq® Vinyl ester should be coated with Stopaq® Vinylester Gelcoat to enhance durability and performance of the Vinyl ester.
Sealing of coating transition area	Above ground situated coating transition area should be sealed against ingress of water (rain, condensation) by circumferential application of suitable Stopaq® Outerwrap tape. This tape must overlap the coated Vinyl ester and the original pipe coating.

Handling and commissioning

Handling before complete curing	Coated objects should not be exposed to loads before curing of the coating has completed.
Handling after curing	Cured coatings should not be exposed to excessive forces. Burying and commissioning is possible after full curing of Stopaq® Vinyl ester. Backfill and compact using clean fill materials not containing foreign objects such as stones, hard lumps, etc. Such objects would otherwise cause excessive impact on the coating.

Information

Documentation	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 **info@stopaq.com**
Certified staff	Application of the described coating system should be carried out by certified personnel.

SEALFORLIFE Industries A BERRY GLOBAL COMPANY

Seal For Life Industries LLC
Charlotte NC, USA
Tel: +1 858 633 9708
sales@sealforlife.com

Seal For Life Industries Mexico S de R.L. de C.V.
Tijuana, Mexico
Tel USA: +1 858 633 9797
Fax USA: +1 858 633 9740
Tel Mx: +52 664 647 4397
Fax Mx: +52 664 607 9105
mexico@sealforlife.com

Seal For Life Industries Stopaq B.V.
Stadskanaal, the Netherlands
Tel: +31 599 696 170
Fax: +31 599 696 177
info@sealforlife.com

Seal For Life Industries BVBA
Westerlo, Belgium
Tel: +32 14 722 500
Fax: +32 14 722 570
belgium@sealforlife.com

Seal For Life India Private Ltd.
Baroda, India
Tel: +91 2667 264 721
Fax: +91 2667 264 724
india@sealforlife.com