STOPAQ®
Self-healing corrosion prevention & sealant technology
SEALFORLIFE

PRODUCT DATA SHEET

STOPAQ® WRAPPINGBAND CZHT

Product Information

Product description: Stopaq® Wrappingband CZHT is a high temperature corrosion preventing wrap material adhering extremely well to steel and factory applied pipeline coatings like PP, Liquid Epoxies and FBE. It is very suitable for use on buried and immersed pipes, for use on pipes and risers in offshore atmospheric conditions, and for use on pipes susceptible for corrosion under insulation.

Stopaq® Wrappingband CZHT is a non-toxic, cold-applied, prefabricated wrap coating, based on a compound containing non-crystalline, low-viscosity, non-crosslinked (fully amorphous), pure homopolymer Polyisobutene.

Stopaq® Wrappingband CZHT is viscous at the indicated operating temperatures. Due to its liquid nature it has a set of unique properties, like cold-flow into all irregularities of the substrate, and self-healing of the complete coating system. The compound does not cure and is unable to build up internal stress. Stopaq® Wrappingband CZHT is fully resistant to water, salt spray and UV-radiation, and has a low gas- and water vapour permeability.

Stopaq® Wrappingband CZHT requires application of a polymeric outerwrap like Stopaq® Outerwrap HTPP or Stopaq® High Impact Shield HT. This improves impact and indentation resistance of the coating system and supports the self-healing ability of small damages like dents and cuts. Optionally an additional mechanical protective layer can be applied on top like Stopaq® Polyester, Stopaq® Vinylester or Stopaq® Outerglass Shield XT.

Features:

- Controlled cold flow providing inflow into the finest pores of the substrate
- Resistant to high temperatures
- Inert to ageing and weathering
- Conforms to irregular shapes
- Self-healing of small dents, voids and cracks
- Low surface tension; adheres on many dry substrates at a molecular level
- Adhesion based on vanderWaals forces
- Surface tolerant: no blasting techniques required, wire brushing is sufficient
- Constant film thickness
- Environmentally friendly, no health and safety hazards to humans
- Resistant to many chemicals like water, salts, acids, alkalis, polar solvents, etc. For additional information, please consult Stopaq B.V.

Benefits:

- Very well suited for application on new-built pipes, and for pipe coating rehabilitation
- Fast and easy field application
- Can be moulded onto various types of irregular shaped objects
- No osmosis or underfilm migration of moisture
- No cathodic disbondment
- Cathodic Protection (CP) of steel structures is not affected
- Guaranteed performance

Application examples

Buried and immersed pipes: For protection against external corrosion of buried and immersed pipes, fittings and field joints made of carbon steel, alloy steel or ductile iron.

Above ground and offshore pipes and risers: For protection against external corrosion of carbon steel, alloy steel and ductile iron pipes, field joints and fittings exposed to extreme atmospheric conditions.

Corrosion Under Insulation: For protection against corrosion under insulation of thermally insulated pipes, field joints and fittings made of carbon steel, alloy steel pipes and ductile iron..

Pipe coating repair and rehabilitation: For repair and rehabilitation and protection against external corrosion of pipeline coating defects.

General order information

Product		Stopaq® Wrappingband CZHT is available in rolls:
	Art. Nr.:	Product dimensions and contents:
	6301	50mm x 10m; 12 pcs/box; 360 pcs/pallet
	6302	100mm x 10m; 6 pcs/box; 180 pcs/pallet
	6303	200mm x 10m; 2 pcs/box; 96 pcs/pallet
	6304	200mm x 20m; 2 pcs/box; 96 pcs/pallet
	6305	300mm x 10m; 2 pcs/box; 80 pcs/pallet
Handling		Handle with care. Keep boxes upright.
Storage and shelf life		Store indoor, clean and dry, away from direct sunlight in a cool place below +45°C [113°F]. Unlimited shelf life.

Product properties of Stopaq® Wrappingband CZHT

Colour	Green
Thickness	2.0 ± 0.2 mm [80 ± 8 mils] A)
Density	1.5 ± 0.1 g/cm³ [12.5 ± 0.8 lbs/gal] (ISO 1183-1)
Temperature ranges	Buried and immersed conditions: – Operational: -45°C [-49°F] to +95°C [+203°F] Atmospheric and CUI conditions: – Operational: -45°C [-49°F] to +120°C [+248°F]
Glass transition temp.	≤ - 65°C [-85°F] A)
Crystallization temp.	Temperature test range -100°C to +170°C A) – No evidence of crystallization
Holiday detection	– No holidays at 15 kV A)
Drip resistance	Tested 48h @ +155°C [+293°F] A) – No dripping of compound
Peel tests before and after accelerated ageing tests	Tested on carbon steel (St 3, Sa 2½) and 304 stainless steel, and on plant coatings PP, FBE, and liquid epoxy. Before ageing A) – Peel strength: – @+23°C [+73°F] ≥ 0.2 N/mm [≥ 18 oz/in] – @+95°C [+203°F] ≥ 0.05 N/mm [≥ 4.6 oz/in] After thermal ageing for 100 days at +115°C [+239°F] A) – Peel strength ≥ 0.2 N/mm [≥ 18 oz/in] After hot water immersion 100 days at +95°C [+203°F] A) – Peel strength ≥ 0.2 N/mm [≥ 18 oz/in] In all cases: – Cohesive separation mode – ≥ 95% coverage of surface
Lap shear tests	Tested on carbon steel Sa 2½ A) – Lap shear strength: – @+23°C [+73°F] ≥ 0.02 N/mm² [≥ 2.9 psi] – @+95°C [+203°F] ≥ 0.002 N/mm² [≥ 0.29 psi] – Cohesive separation mode – ≥ 95% coverage of surface
Specific electrical insulation resistance	Rs_{100} > 10^8 Ω.m² [> 10^7 Ω.ft²] A)
Ageing resistance test	Acc. ISO 20340:2009 Annex A (4200 h), tested on carbon steel (St 3, Sa 2 ½), on 304 stainless steel, and on existing liquid epoxy coating over carbon steel – Corrosion creep from scribe: M ≤ 8.0 mm – ISO 4628-2 Blistering: 0(S0) – ISO 4628-3 Rusting: Ri 0 – ISO 4628-4 Cracking: 0(S0) – ISO 4628-5 Flaking: 0(S0) – ISO 4628-6 Chalking: 0

Properties of coating system comprising Stopaq® Wrappingband CZHT and Stopaq® Outerwrap HTPP

Impact resistance	Tested at 15 J [132 in.lbf] A) and at 40 J [354 in.lbf] – @+23°C [+73°F]: no holidays A) – @+95°C [+203°F]: no holidays
Indentation resistance	Tested with 10 N/mm² [1450 psi] A) @ +23°C [+73°F] and @ +95°C [+203°F]: – no holidays, residual thickness ≥ 0.6 mm [24 mils] B)
Cathodic disbondment resistance	Tested @ +23°C [+73°F] and @ +95°C [+203°F] A) – Disbondment 0 mm, no holiday. Defect Ø 6mm [1/4"] self-healed within 24 hours.
Self-healing test	Tested @ +23°C [+73°F] and @ +95°C [+203°F] – Completed < 24 hours, no holiday.
Cyclic thermal shock resistance	After hot dry/wet thermal shock cycling C) – Peel strength ≥ 0.2 N/mm [≥ 18 oz/in] – Cohesive separation – ≥ 95% coverage of surface
Cyclic freeze/thaw resistance	After immersed freeze/thaw cycling D) – Peel strength ≥ 0.2 N/mm [≥ 18 oz/in] – Cohesive separation – ≥ 95% coverage of surface

A) According to ISO 21809-3:2016 (2nd ed.) for coating type 13
B) After removal of load within 3 hrs.
C) 80 cycles 1) ≥16h dry +120°C; 2) 1m water quench +10°C; 3) 8h water quench +95°C
D) 50 cycles immersed in water 1) in 24h to +95°C; 2) in 24h to -15°C

Application instruction - Job preparation

Tools, equipment and auxiliaries	– Temperature probe, Dew point tester, High voltage holiday tester – Scissors, Knife, Measuring tape – Abrading pads, Wire brushes – SFL Substrate cleaner – or, alternatively - Isopropyl alcohol, cas. nr. 67-63-0 – Personal protective gear, if applicable
Additional coating materials	Stopaq® Wrappingband CZHT requires application of a polymeric outerwrap, such as: – Stopaq® Outerwrap HTPP – Stopaq® High Impact Shield HT Additional mechanical protective layers may also be applied over the complete coating, e.g. – Stopaq® Polyester – Stopaq® Vinylester – Stopaq® Outerglass Shield XT
High humidity	Stopaq® Wrappingband CZHT 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.
Work area and substrate	The substrate should be dry, clean and protected against negative weather influences.
Product conditions	Stopaq® Wrappingband CZHT should be dry and the temperature should preferably be between +20°C [+68°F] and +50°C [+104°F] for the ease of application.

Application instruction - Surface preparation

General	The area to be coated has to be clean, dry, and free from oil, grease and dust. All contamination including mill-scale has to be removed.
Degreasing	Degrease surfaces with SFL Substrate Cleaner and e.g. a lint-free cloth. Alternatively Isopropyl alcohol can be used.
Salts and bacteria	No need for additional cleaning.
Condensation of water	Prior to and during the application, the temperature of the substrate(s) must be at least 3°C [6°F] above the dew point.
Substrate temperature	Temperature of the substrate should preferably be +30°C [+86°F] or more for fast and easy application. Preheating may be required.
Steel	Minimum requirement for surface preparation is St 2 according to ISO 8501-1. Roughness profile is not essential for adhesion but In case abrasive blast techniques are used, the preferred roughness is less than 50 µm.
Other substrates	De-gloss and degrease the surfaces by using an abrasive pad and SFL Substrate Cleaner. Alternatively Isopropyl alcohol can be used.
Cleanliness check	Take a piece of Wrappingband of ± 150 mm [6"] length, remove the release foil and fold it back for about 25 mm [1"]. Put the Wrappingband onto the surface, press it firmly for 5 minutes. Pull the Wrappingband from the substrate with an angle of app. 135 deg. and a speed of 100 mm/min [4"/min]. Cohesive separation should occur and coverage of the surface with remaining material should be ≥ 95%. If this is less, surface cleaning is insufficient. Note: at too low substrate temperatures this test may not be successful. Preheat the substrate to adequate temperature and repeat the test.

Application instruction - Brief version

See specific Stopaq coating instructions for e.g. field joints, pipe wrapping, coating repair, fittings, etc.

Wrapping	Start with removal of a small part of the release liner and apply the Wrappingband on the substrate. Apply Wrappingband without any tension onto the substrate. Avoid air-enclosures. Mould the Wrappingband tight onto the substrate.
Release foil	Do not remove the release foil before application of the Wrappingband. Remove just prior to application of the Wrappingband to the surface.
Overlap of wraps	Side-by-side overlap: ≥ 10 mm [3/8"] Consecutive rolls: ≥ 50 mm [2"] Overlap on factory applied coating: see specific Stopaq coating instructions.

Application instruction - Quality control

Visual inspection	The appearance of Stopaq® Wrappingband CZHT must look smooth and tight and should be shaped around all details and into corners.
Holiday detection	Immediately after application of Stopaq® Wrappingband CZHT, holiday testing should be carried out with a voltage of 15 kV. A brush probe is recommended. No further testing is required.

Application instruction – Mechanical protection

Mechanical protection	Once applied, Stopaq® Wrappingband CZHT should be protected against impacts, indentations, soil pressure and other influences by application of Stopaq® Outerwrap or Stopaq® High Impact Shield HT, eventually followed by Stopaq® Polyester, Stopaq® Vinylester or Stopaq® Outerglass Shield XT. Please consult Stopaq B.V. for further information.

Handling and commissioning

Exposure to loads	Objects coated with Stopaq® Wrappingband CZHT should not be exposed to loads e.g. from supports- or lifting equipment.
Immersion or burying	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

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.
Stopaq® performance	Extensive laboratory tests and more than 15 years of service in extreme wet and chemical aggressive environments have proven that corrosion, bacterial growth or stress corrosion cracking cannot develop on substrates coated with Stopaq® coating systems.

SEALFORLIFE Industries
PART OF THE BERRY PLASTICS ENGINEERED MATERIALS DIVISION

Seal For Life Industries LLC
Franklin, MA, USA
Tel: +1 508 918 1600
Toll Free: +1 800 248 7659
Fax:+1 508 918 1905
franklin@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

Anodeflex® - Stopaq® - Polyken® - Covalence® - Powercrete® - Sealtaq® - Blockr® - Easy.Qote® - SynergyQ®