STERLING® TECHNOTRADE
The Specialist Construction Chemical Company

TechnoFlex® CombiSeal GS System

High performance, Flexible Joint sealing system for construction joints, Expansion joints, Movement joints in structural and civil engineering.

Description:

TechnoFlex®CombiSeal GS System is High performance joint sealing, root proof and chemically resistant system for construction, expansion and connection Joints as well as for cracks. When fixed to the joint, allows irregular and high movement in more than one direction, whilst maintaining a durable high quality seal.

The TechnoFlex®CombiSeal GS System consists a combo system of two products TechnoFlex®CombiSeal 800 -highly elastomeric TPE based joint sealing tape with advanced adhesion designed for water tightness of expansion & construction joints. It is extremely durable has excellent resistance to weathering and is UV and chemically stable and TechnoSeal® EPA (HS)- High Strength, 2-Component, Solvent Free Thixotropic Epoxy Adhesive.

Note: The system configuration as described must be fully complied with and it should not be changed.

Typical applications include

TechnoFlex®CombiSeal GS System can be used for following application-

1- Sealing system for expansion, construction and Connection joints, as well as for cracks in

- Tunnels and culverts
- Hydroelectric power plants
- Sewage treatment plants
- Roof joints
- Basements
- Water retaining structures and drinking water reservoirs Joints between rigid and flexible surfaces
- Around iron, steel and concrete pipes Swimming pools

2. Sealing of joints with extreme movement

- Building sections where varying settlement is expected Cracks
- Repair / over banding of leaking or failed joint sealants
- Joints with extreme movement

Features and Benefits

- Easy to install, Suitable for both dry and damp concrete surfaces
- Extremely flexible, Fast curing, weather, water resistant & Performs well within a wide range of temperatures
- Suitable for contact with potable water
- Root, UV resistant & Good resistance, adhesion to many chemicals
- Versatile system suitable for many difficult situations
- User friendly heat welding of tape overlaps
- Can be applied horizontally, vertically and even overhead

TechnoSeal® EPA (HS) Gel & *Dry Curing Times					
Substrate Temp.	+5C	+10C	+20°C	+30°C	+40°C
Gel time(mins)	120	90	50	35	20
Dry time(hrs)	72	48	24	12	6

*The table is for dry conditions. In wet/damp conditions, the curing time will double. Be aware that the substrate temperature can vary significantly from the ambient temperature.

Properties & Performance Indexes					
TechnoSeal® EPA (HS)					
Appearance when mixed		Grey			
Flexural Strength @25°C (ASTM C580 Part 7)		20MPa (7day)			
Compressive Strength (According to ASTM C-579) @ 30°C.		45-55 MPa @1day 50-60 MPa @ 3day 55-65MPa @ 7day 65-75 MPa @ 14 days			
Slant shear Bond Strength (According to ASTM C 882)		>10MPa (Concrete Failure)			
Tensile strength		7-8 MPa @ 3day 8-10 MPa @ 7 days			
Setting Time		12 hours @@30°C.			
Application Temperature		+10°C -40°C.			
Pot Life		>1 hr @20°C. 50 minutes @30°C. 30 minutes @40°C.			
TechnoFlex®CombiSeal 800 TPE					
Elongation at break	EN ISO 527-3	>700%	Hardness (Shore A)	ISO 868	80
Tear growth resistance	EN 12310-2	> 870 psi	Peel off strength		> 290 psi
Tear resistance lengthwise	EN ISO 527-3	> 1300 psi	Resistance to bitumen	DIN 16726	Resistant
Tear resistance crosswise	EN ISO 527-3	> 870 psi	Resistance to water pressure	EN 1928	> 8 bar
Resistance to cold / heat	SIA 280/3	-40°C to +80°C	Resistance to UV radiation	SIA V280/ 10	> 7500 hours
Chemical resistance		Water and bitumen based, waterproofing products, water, sea water, waste water, UV radiation, hydrolysis, micro organisms			
pH resistance		pH = 2 to 10 (below 30°C) pH = 5 to 10 (below 40°C) pH = 6 to 8 (below 60 °C)			
Limited resistance to		Acids and alkalis, organic solvents (Ester, Ketone and similar).			

Substrate Moisture Content

Cementitious substrates:

- Dry, damp tolerant when applied to damp concrete, brush the adhesive well into substrate.
- Relative Air Humidity - 85% max. (at +25°C)
- Dew Point - Avoid condensation.

Mixing of TechnoSeal® EPA (HS) - Bond Adhesive

- Mix parts A+B together for at least 3 minutes with a mixing spindle attached to a slow speed (200 -300 RPM) electric drill (max 600 rpm) until the material becomes smooth in consistency and a uniform grey colour.
- Avoid aeration while mixing. Then, pour the whole mix into a clean container and stir again for approx. 1 more minute at low speed to keep air entrapment at minimum.
- Mix only that quantity which can be used within its pot life.
- For sealing cracks, or narrow joints the TechnoSeal® EPA (HS) should not be bonded along the centre line of the tape.
- A minimum unbonded width of 20mm is recommended to allow for expansion and contraction.

Application of TechnoFlex®CombiSeal GS System

- For over bonding existing sealants expansion joints or cracks. The center of the TechnoFlex®CombiSeal 800 must not be "bonded" to the substrate. In this case, apply masking tape on top of the sealant / joint / crack and on both sides of the joint before applying the adhesive. Apply thoroughly the mixed TechnoFlex®CombiSeal 800 adhesive on both sides of the sealant/joint/crack onto the prepared substrate, using a suitable trowel. If the concrete substrate is damp, work the adhesive well into the substrate with a brush.

- Layer thickness of adhesive should be 1- 2 mm and the bonding width on each side of the sealant/joint/crack should be at least 50 mm on 200 mm wide tape, 40mm on 100mm wide tape.

- Before placing the TechnoFlex®CombiSeal 800 remove the masking tape on top of the sealant / joint / crack.

- Apply the TechnoFlex®CombiSeal 800 within the open time of the adhesive. Press the tape firmly and without trapping air into the adhesive by using a suitable roller.

- The adhesive should be squeezed out on both sides of the tape by ~ 5 mm. Apply the TechnoFlex® CombiSeal 800, Let the base layer of the TechnoFlex®CombiSeal 800 Bond Adhesive achieve initial set before the top layer is applied.

- Wipe the edges of the tape with TechnoFix® Eco Cleaner, then place the clean and well-aired tape immediately into the adhesive layer and press well in with a roller. For very wide joints draw the tape suitably into the joint so that a hollow is formed. Holes punched at the edges provide added anchorage.

- If necessary, activate the tape again if more than 8 hours' elapses. Apply a Masking tape at the middle of

Application Process

		
Stage 1- Surface preparation: Prepare the cleaned, weight bearing underfloor by mechanical means.	Stage 2- Cleaning: Prepare the surface mechanically before cleaning it thoroughly	Stage 3- Masking off the surface: Mask off the expansion area on the Subfloor and on the tape. Mask off at the margin, the grout should overlap the building component by at least 10mm.
		
Stage 4- Mixing of the Epoxy mortar: Stir comp. A and comp. B together and put the mixture into a clean bucket. Then stir the mixture for a second time.	Stage 5- Applying the adhesive: In order to ensure all-over bedding applyTechnoSeal®EPA (HS) at least 10mm wider than the amount of TechnoFlex®Combi Seal 800 TPE Tape you use.	Stage 6- Removing the adhesive tape: Remove the adhesive tape in the area of the joint.
		

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the TechnoFlex®CombiSeal 800. Ensure that the tape should be properly adhered to the concrete.

- Apply the adhesive at a thickness of ~ 1 mm over the full width of the TechnoFlex®CombiSeal 800 and extended a minimum of 10mm beyond edges of the TechnoFlex®CombiSeal 800. This is followed by the immediate removal of the masking tape middle as well on both sides to ensure a neat and precise detail.

- The adhesive top layer may be smoothed with a brush using a diluted detergent. Allow adhesive to start curing first.
- Note: Do not use detergent if any coating is to be applied.

Jointing/Connection of TechnoFlex®CombiSeal 800

Tape ends are connected by hot air thermal welding. This is assisted by simultaneously applying TechnoPur ® Eco Cleaner just before welding. The layer to be over lapped approx. 40 to 50 mm in case of old tape or repairs, must be cleaned with wire wool and TechnoPur® Eco Cleaner followed by careful hot air welding.

Forming internal/external 90° corners.

All internal/external corners should be formed by welding the TechnoFlex®CombiSeal 800 on site by careful use of a hot air welding gun.

Notes on Application / Limitations

If joints are to be subjected to positive water pressure, the tape must be supported in the joint. Hard foam, filler board or joint sealant is recommended. For exposure to negative water pressure the TechnoFlex®CombiSeal 800 must be supported with steel plates secured on one side.

Limit without support:

For 5 mm joints at +20°C and max. 0.5 bar water head a tape of 2 mm thickness has to be used.
If a bituminous wearing layer is installed on top of TechnoFlex®CombiSeal 800, the temperature of the hot mix must not exceed +180°C. Up to 10 mm thickness the temperature may be max. +220°C. If necessary, apply in layers and allow to cool in between.

The TechnoFlex®CombiSeal 800 must be protected from mechanical damage.

DISCLAIMER: The product information & application details given by the company & its agents has been provided in good faith & meant to serve only as a general guideline during usage. Users are advised to carry out tests & take trials to ensure on the suitability of products meeting their requirement prior to full scale usage of our products. Since the correct identification of the problems, quality of other materials used and the on-site workmanship are factors beyond our control, there are no expressed or implied guarantee / warranty as to the results obtained. The company does not assume any liability or consequential damage for unsatisfactory results, arising from the use of our products.

EDITION: 10/2019/001
IDENTIFICATION NO: PD-346

Please note that this datasheet supersedes all previous versions.

Stage 7- Laying and pressing: Lay out the TechnoFlex® CombiSeal 800 TPE Tape and press it on-with a suitable tool.	Stage 8- Grouting: Ensure the TechnoSeal® EPA (HS) is spread over all of the TechnoFlex® CombiSeal 800 TPE Tape.	Stage 9- Bonding: Ensure that there is an overlap of 5omm–100mm with a minimum layer thickness of 1 mm when bonding the TechnoFlex® CombiSeal TPE Tape to the TechnoSeal®EPA (HS).
		
Stage 10- Removing the adhesive tape: Take out various adhesive strips.	Stage No 11- Final Finish without cover plate	Stage No 12- Final Finish with cover plate

Cleaning of Tools

Clean all tools and application equipment with TechnoPur® Eco Cleaner immediately after use. Hardened / cured material (adhesive) can only be mechanically removed.

Packaging

TechnoSeal® EPA (HS) is available in 6 Kg & 30 Kg packing.
TechnoFlex®CombiSeal 800 will be available in 100mm and 200mm, 300mm width and length of 25 meter for all sizes.

Storage & Shelf Life

Following are months of shelf life from date of production if stored properly in undamaged unopened, original sealed packaging, in dry conditions at temperatures between +5°C and +25°C Protect from direct sunlight and frost

- TechnoSeal® EPA (HS) = 12 months
- TechnoFlex®CombiSeal 800 = 24 months

Additional information

Techno Builders Solutions® By Sterling Technotrade India Pvt.Ltd -The Specialist Construction Chemicals Company® range of associated products includes high performance concrete Admixtures, Adhesives, Protective Coatings, Concrete Repairs, Industrial Flooring, Grouts & Anchors, Joint Sealants, Surface Treatments, curing compounds, repair mortars, release agents, Grinding Aids & Waterproofing.

*Separate datasheet are available on these products.