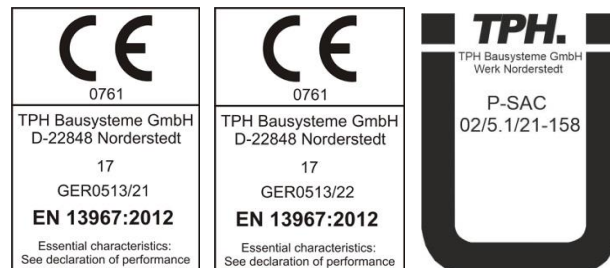


PROOFMATE RTX-SYSTEM

CE-marking in accordance with EN 13967 for PROOFMATE GR Tape 1 mm

CE-marking in accordance with EN 13967 for PROOFMATE GR Tape 2 mm

General Building Authority Test Certificate



Properties:

The *PROOFMATE RTX-SYSTEM* is an external strip sealing and connection system against pressing water for the sealing of construction joints, connection joints, elements for controlled crack joints, expansion joints etc.

It consists of a high-performance sealing tape based on flexible Polyolefins (FPO), the *PROOFMATE GR* tape, and the two-component, creamy epoxy resin-based system adhesives *PROOFMATE TX-S* and *TX-W*.

PROOFMATE GR tape is weldable with waterstops and conventional plastic sheets based on TPO/TPE/FPO. It is used as connection system between concrete elements, e.g. segments in tunnelling or between in-situ concrete structures and plastic sheets / waterstops.

Due to the special material base and creamy consistency of *PROOFMATE TX-S* resp. *PROOFMATE TX-W* adhesives it can be applicated even on sligth moist subsurfaces in horizontal, vertical and overhead areas.

Suitability according to DIN 18532-4:

Table 1.8, according to EN 13967

- Type of construction 1a, 2a, 2b
- Type of use N1-V to N3-V
- Material thickness 2 mm

Suitability according to DIN 18533-2:

Tab. 3.7

- Type of waterproofing W1.1-E, W1.2-E, W2.1-E, W2.2-E, W3-E, W4-E

- The *PROOFMATE GR-SYSTEM* can be used for sealing construction joints and predetermined crack cross-sections with a maximum opening width of 1 mm in structural elements made of concrete with high water penetration resistance against:
 - Soil moisture and non-pressing water as well as against

- pressurized water up to a maximum water pressure of 2 bar -(20 m water column) can be used.

The waterproofing system is suitable for water change zones. The waterproofing meets the requirements of service class A for stress class 1 and 2 according to the WU guideline: 2017.

Technical data:

PROOFMATE GR tape 1 mm:

Substance data:

Material base:	flexible polyolefines (FPO)	
Colour:	grey	
Mass per unit area:	935 g/m ²	DIN EN 1849-2
Shore A hardness:	approx. 87	DIN EN ISO 7619-1
Thickness:	0.99 mm	DIN EN 1849-2
Straightness:	10 mm	DIN EN 1848-2
Length:	20 m	
Width:	150, 200, 300, 400 mm	
Temperature resistance	-30 to 90°C	
Maximum burst pressure	> 4 bar	
Maximum tensile force		DIN EN ISO 527-3
longitudinal	approx. 14 N/mm ²	
lateral	approx. 14 N/mm ²	
Elongation at break		DIN EN ISO 527-3
longitudinal	approx. 1000%	
lateral	approx. 1000%	
Force absorption		DIN EN ISO 527-3
at 25% lateral elongation	approx. 3.0 N/mm	
at 50% lateral elongation	approx. 3.5 N/mm	
Resistance to water pressure	> 4 bar	DIN EN 1928 B
Joint shear resistance	390 N/50mm	DIN EN 12317-2
Resistance to impact		DIN EN 12691
Method A: AI sheet	300 mm	
Method B: EPS sheet	1750 mm	
Resistance to static load		DIN EN 12730
Method A: EPS sheet	20 kg	
Method B: concrete	20 kg	
Tear resistance		DIN EN 12310-2
longitudinal	approx. 100 N	
lateral	approx. 100 N	
Maximum tensile force		DIN EN 12311-2
longitudinal	92.3 N/6 mm	
lateral	89.0 N/6 mm	
Tensile strength		DIN EN 12311-2
longitudinal	15.6 N/mm ²	
lateral	15.0 N/mm ²	
Elongation at break		DIN EN 12311-2
longitudinal	621 %	
lateral	673 %	
Tear resistance (nail shank)		DIN EN 12310-1
longitudinal	266 N	
lateral	263 N	
Foldability at low temperatures	-30°C	DIN EN 495-5
Water vapour permeability (s _d)	61 m	DIN EN 1931 B
UV resistance	min. 6500 h	DIN EN ISO 4892-3
Exposure to liquid chemicals	passed	DIN EN 1847
Exposure to bitumen	passed	DIN EN 1548
Fire classification	B2	DIN EN 4102
Reaction to fire	class E	DIN EN 13501-1
Testing for artificial ageing *	passed	DIN EN 1296
Watertightness **	passed	DIN EN 1928
Weldability:	Product is weldable with conventional hot-air	

welder according to RVS 8T / DVS 2225-5.

- * 12 weeks at 70°C
- ** 24 h at water pressure of 60 kPa

PROOFMATE GR tape 2 mm:

Substance data:

Material base:	flexible polyolefines (FPO)	
Colour:	grey	
Material weight:	approx. 1830 g/m ²	
Shore A hardness:	approx. 87	DIN EN ISO 7619-1
Total thickness:	approx. 2.0 mm	
Length:	20 m	
Width:	150, 200, 300, 400 mm	
Temperature resistance	-30 to 90°C	
Maximum burst pressure	> 5 bar	
Maximum tensile force		DIN EN ISO 527-3
longitudinal	approx. 14 N/mm ²	
lateral	approx. 14 N/mm ²	
Elongation at break		DIN EN ISO 527-3
longitudinal	approx. 1000%	
lateral	approx. 1000%	
Force absorption		DIN EN ISO 527-3
at 25% lateral elongation	approx. 5.6 N/mm	
at 50% lateral elongation	approx. 6.5 N/mm	
Resistance to water pressure	> 5 bar	DIN EN 1928 B
Tear resistance		DIN EN 12310-2
longitudinal	approx. 200 N	
lateral	approx. 200 N	
Water vapour permeability (s _d)	125 m	DIN EN 1931 B
UV resistance	min. 6500 h	DIN EN ISO 4892-3
Fire classification	B2	DIN EN 4102
Tensile strength	8.0 N/mm ²	DIN EN 12311-2
Elongation at break	500 %	DIN EN 12311-2
Tear resistance (nail shank)		DIN EN 12310-1
longitudinal	400 N	
lateral	600 N	
Foldability at low temperatures	-30°C	DIN EN 495-5
Testing for artificial ageing *	passed	DIN EN 1296
Watertightness **	passed	DIN EN 1928
Weldability:	Product is weldable with conventional hot-air welder according to RVS 8T / DVS 2225-5.	

- * 12 weeks at 70°C
- ** 24 h at water pressure of 60 kPa

Chemical resistance:	DIN EN ISO 175
Classification:	
+ resistant (non or little effect)	
+/- limited resistant (moderate effect)	
- not resistant (serious effect)	

Chemical compound	Classification	Remarks
Hydrochloric acid 3 %	+	after test period of 7 days
Sulphuric acid 35 %	+	after test period of 7 days
Citric acid 100 g/l	+	after test period of 7 days
Lactic acid 5 %	+	after test period of 7 days
Potassium hydroxide solution 3 %	+	after test period of 7 days
Potassium hydroxide solution 20 %	+	after test period of 7 days
Sodium hypochlorite 0,3 g/l	+	after test period of 7 days
Salt water 20 g/l	+	after test period of 7 days

PROOFMATE TX-S

Substance data of components:

Component A

Consistency	highly viscous
Colour	grey
Odour	characteristic
Spec. density (23°C)	approx. 1.83 g/cm ³
Dyn. viscosity (23°C)	not determined

Component B

Consistency	liquid	
Colour	light yellow	
Odour	similar to amine	
Spec. density (23°C)	approx. 0.99 g/cm ³	DIN EN ISO 2811-1
Dyn. viscosity (23°C)	approx. 20 - 40 mPas	DIN EN ISO 2555

Mixture of A- and B-component:

Processing temperature	15 - 30°C	substrate temperature
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Reaction data (at 23°C):

Pot-life	approx. 30 min
Final curing	7 d

Properties after curing:

Compressive strength		DIN EN 196
1 d	approx. 20 N/mm ²	
3 d	approx. 44 N/mm ²	
7 d	approx. 51 N/mm ²	
Bending tensile strength		DIN EN 196
1 d	approx. 17 N/mm ²	
3 d	approx. 21 N/mm ²	
7 d	approx. 22 N/mm ²	
Bond strength at concrete at 10°		DIN EN 1542
1 d	not measurable	
2 d	approx. 1.5 N/mm ²	
3 d	approx. 3.0 N/mm ²	
7 d	≥ 4.0 N/mm ²	
Bond strength at concrete at 23°		DIN EN 1542
1 d	approx. 0.95 N/mm ²	
3 d	≥ 4.0 N/mm ²	
7 d	≥ 4.0 N/mm ²	
14 d	≥ 4.0 N/mm ²	
E-modulus		DIN EN ISO 527
7 d	approx. 2490 MPa	
14 d	approx. 3370 MPa	
Tensile strength		DIN EN ISO 527
7 d	approx. 13 MPa	
14 d	approx. 14 MPa	
Elongation at break		DIN EN ISO 178

7 d	approx. 1.0 %	DIN EN ISO 604
E-modulus		
7 d	approx. 3030 MPa	
14 d	approx. 3660 MPa	

PROOFMATE TX-W

Substance data of components:

Component A

Consistency	highly viscous	
Colour	grey	
Odour	characteristic	
Spec. density (23°C)	approx. 1,8 g/cm ³	DIN EN ISO 2811-1
Dyn. viscosity (23°C)	not determined	

Component B

Consistency	liquid	
Colour	light yellow	
Odour	similar to amine	
Spec. density (23°C)	approx. 1,0 g/cm ³	DIN EN ISO 2811-1
Dyn. viscosity (23°C)	approx. 75 mPas	DIN EN ISO 2555

Mixture of A- and B-component:

Processing temperature	10 - 30°C	substrate temperature
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Reaction data:

Processing temperature (at 23°C)	approx. 30 min	DIN EN ISO 9514
Processing temperature (at 10°C)	approx. 40 - 60 min	DIN EN ISO 9514
Final curing	7 d	

PROOFMATE GR-SYSTEM

Pull-off strength at concrete *	ca. 4,50 N/mm ²	DIN EN 1348
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* valid for 1 and 2 mm HYDROFIX T tape, measured after 7 d

Processing:

PROOFMATE GR-SYSTEM is to be applied to the joint to be sealed on the side of the component facing the water, so that the tape covers the joint evenly on both sides.

Subsurface preparation:

The subsurface must be stable and free of separating substances. Insufficiently firm layers and concrete slurry must be removed.

For this purpose the subsurface must be prepared by suitable mechanical processes such e.g. shot blasting, milling and subsequent shot blasting or blasting with other hard blasting abrasives.

Cavities and damage areas at horizontal surfaces can be smoothed out with *PROOFMATE TX-S* resp. *TX-W* to a maximum depth of 40 mm.

PROOFMATE TX-S resp. *TX-W* is supplied in a set defined mix-ratio of components (A : B). For the processing, the B component (hardener) is completely filled into the A component (resin mixture) and homogenously mixed by means of a slowly moving stirring device (max. 60 rpm) until a uniformly, streak-free, grey colouring and a creamy, steady consistency is produced.

It must be ensured that fringes are thoroughly mixed. Mixing must be carried out for at least 3 minutes. After filling in another container and short stirring again the mixture must be used up within 30 minutes.

The Adhesive can be applied to both dry and slightly moist subsurfaces (matt glossy surfaces without a standing film of water, pores not saturated with water).

Wet, water saturated subsurfaces must be dried before application.

Substrate and ambient temperatures:

PROOFMATE TX-S system adhesive is recommended for application at temperatures from 15°C to 30°C.

PROOFMATE TX-W system adhesive is recommended for application at temperatures below 15°C. The lowest recommended usability temperature without additional winter construction measures is 10°C.

For processing and curing of the *RTX-SYSTEM* at temperatures below 10°C, further measures must be taken on site to heat substrate, component, ambient and processing temperatures to the required values. This can be done, for example, by professionally manufactured enclosures with heating of the areas to be processed or, in the case of very local applications, by heating mats. The system components must be heated prior to processing so that they are also within the recommended temperature ranges when applied. The surface temperature of the substrate must be at least 3°C above the dew point temperature (dew point control required).

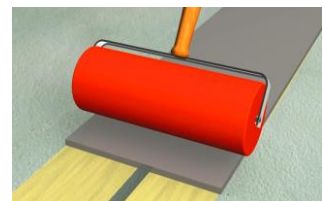
The recommended substrate and ambient temperature for the respective system must be maintained continuously for at least 3 days after application.

Application:

PROOFMATE TX-S resp. *TX-W* is applied on to the subsurface by means of a trowel. Ensure that any exiting expansion zone or joint is not covered by the adhesive.



In case the *PROOFMATE GR* tape is contaminated, the product has to be cleaned before, by using a dry or wet towel (water, no solvent). Afterwards the sealing tape has to be positioned on the adhesive layer during the open time of adhesive and rolled into the adhesive layer from the center to the edges with a wide draw roll. A full-surface bonding is necessary. Air pockets must be displaced outwardly by using the roll.



The joint seal must be protected against mechanical damage. For construction joints, this

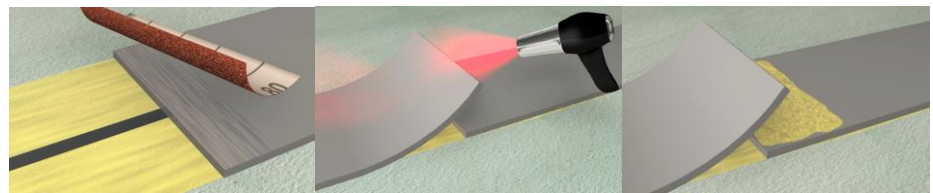
can be done by completely covering the tape with *PROOFMATE TX-S* or *TX-W* system adhesive.



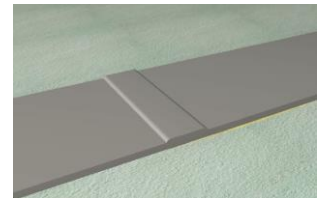
For expansion joints, the tape is completely covering with the system adhesive *PROOFMATE TX-S* or *TX-W*, leaving the expansion part uncovered.

The longitudinal connection of tapes can be made by welding according to RVS 8T / DVS 2225-5 or by bonding with *TX-S* or *TX-W* adhesive. If welding, sand the overlaps before with sandpaper (80 grit).

Attention: Do not sand the tape when bonding with adhesive!



The welded or glued *PROOFMATE GR* tapes are pressed completely into the adhesive layer. The edge of tape must be covered with a width of minimum 50 mm of *PROOFMATE TX-S* resp. *TX-W*.



Consumption:

Width of tape [mm]	Layer thickness	Quantity of <i>PROOFMATE TX-S</i> resp. <i>TX-W</i> [kg/lfm.]
150	2	0,50
150	4	1,00
150	6	1,50
200	2	0,67
200	4	1,34
200	6	2,01
300	2	1,00
300	4	2,00
300	6	3,00
400	2	1,34
400	4	2,68
400	6	4,02

Consumption quantities are values based on experience, which can vary depending on quality of substrate. Recommended layer thickness is 2 to 4 mm

Safety information:

PROOFMATE GR tape:

No special safety precautions required

PROOFMATE TX-S resp. TX-W:

PROOFMATE TX-S / TX-W component A contains epoxy resin. *PROOFMATE TX-S / TX-W* component B contains amines. Both components are classified as hazardous according to Regulation (EC) Nr. 1272/2008 (CLP).

It is therefore required, before beginning processing, to become familiar with the precautions and safety advice as indicated in the material safety data sheet.

Packaging:

PROOFMATE GR tape 20 m rolls, individually shrink-wrapped

Other dimensions on request.

PROOFMATE TX-S 8 kg combined metal drum
PROOFMATE TX-W 11 kg combined metal drum

Bigger packaging on request.

Storage:

PROOFMATE GR tape:

Shelf life maximum 12 month in original packaging when stored in cool and dry conditions, protected from UV radiation.

PROOFMATE TX-S resp. TX-W:

Shelf life at least 6 month in original packaging when stored in dry conditions between 15 - 25°C, protected from heat, frost and direct sunlight.

After the expiration the use of the product is generally not recommended, unless an approval has been provided by TPH. This approval can only be obtained by the quality assurance department of TPH releasing the material after verification of main properties being within specification.

Disposal:

PROOFMATE GR tape:

Recommendation:

Small quantities of product residues can be disposed of as normal domestic waste. Dispose of bigger quantities must be carried out in accordance with the corresponding local regulations.

PROOFMATE TX-S resp. TX-W:

Small quantities of cured product residues can be disposed of as normal domestic waste. Dispose of not cured product components must be Carried out in accordance with the corresponding local regulations. For further information please refer to the material safety data sheets.

Test certificates:

Determination of identifying properties and performance characteristics of *PROOFMATE RTX-SYSTEM* tape 1mm and 2mm; MPA Braunschweig 2016

General Building Authority Test Certificate of *PROOFMARE RTX-SYSTEM*; MFPA Leipzig 2018

Legal notice:

The correct and thus successful application of our products is not subject to our control. A guarantee can be issued for the quality of our products within the framework of our sales and supply conditions, however not for successful processing. All data and specifications in this specification sheet are based on the present state of the art and the right to changes and adaptations for the sake of development remains explicitly reserved. The consumption specifications designated by us can be only average empirical values, where deviations are possible on an individual basis and therefore cannot be excluded by us.

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