

# Technical Data Sheet



heating and cooling systems

**SlimaTherm®**

## SlimaTherm® TBS 19 / 30

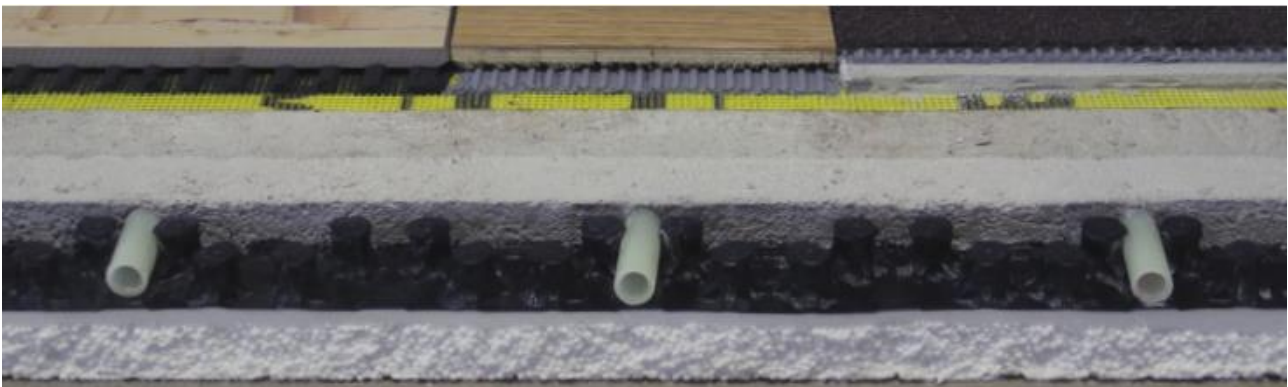
**Fast-reacting dry construction underfloor heating and cooling system with low construction weight and fast controllability without wet screed**

### At a glance

- Thin-layer underfloor heating and cooling system based on aluminium-coated system panels in combination with a special armour decoupling mat.
- Water-guided system - can be connected to any existing heating system with appropriate manifolds
- Room soundproofing - due to the SK-Bi compound base of the overlying decoupling mat
- Saves long construction times - completely without conventional wet screed
- Can be used for all covering materials - incl. special floor levelling compounds
- Energy-saving - fast reacting
- Easy to install thanks to the supplied installation plan
- Can also be used as wall heating - provided that the system panels are dowelled accordingly

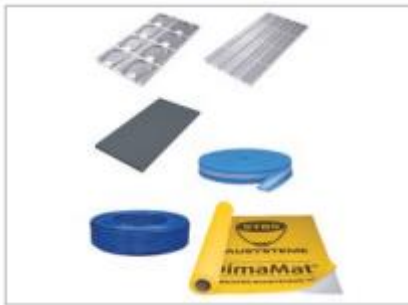
**The SlimaTherm® TBS system is based on the patented special armour decoupling mat DimaMat® SPZ1 and surface-bonded aluminium heat conducting plates including baffle plates.**

In this combination, this universal, thin-layer and safe floor and wall heating and cooling system can be combined with all surface covering materials. If necessary, special floor levelling compounds must also be used, which increase the wear resistance and also the evenness.



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## Delivery sizes

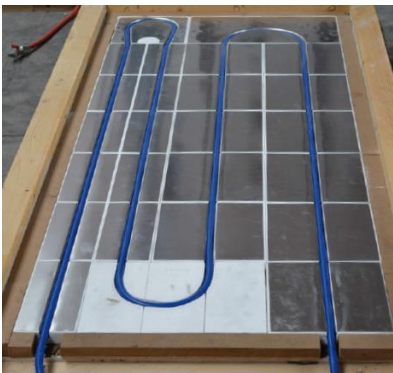


object-related as a complete package

## Technical information and tests

### Technical data:

	<b>TBS 19</b>	<b>TBS 30</b>
heat conducting plate::	Aluminum 0,5 mm	Aluminum 0,5 mm
insulation:	moulded foam EPS 032	moulded foam EPS 03
thermal resistance:	0,51 m <sup>2</sup> K/W	0,78 m <sup>2</sup> K/W
Lambda:	0,032 W (mK)	0,035 W (mK)
compressive strength:	240 kPa/mm <sup>2</sup> (24 kN/m <sup>2</sup> )	240 kPa/mm <sup>2</sup> (24 kN/m <sup>2</sup> )
nominal thickness:	19 mm	30 mm





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## Processing

The SlimaTherm® TBS system elements are to be glued to the prepared substrate according to the installation plan supplied. The MVR system pipe is pressed into the recesses according to the installation plan. The special decoupling mat can then be rolled out over the surface of the system elements and glued (self-adhesive).

## Substrates

The STBS® SlimaTherm® TBS system can be used on all load-bearing, level, standard building substrates in the renovation sector as well as in new buildings. The system can also be bonded to sufficiently pressure-resistant insulation.

Suitable substrates:

- Raw concrete ceilings
- Cement screeds
- Calcium sulphate screeds
- Mastic asphalt screeds, min. IC 10
- Wooden substructures

## Brief installation instructions

1. laying the self-adhesive edge dam strip along walls, pillars or stairs.
2. bonding of the SlimaTherm® frame wood along walls, columns or stairs to the substrate using suitable tile adhesive according to DIN EN 12004 / class C2.
3. gluing the SlimaTherm® dry construction elements according to the installation plan using a suitable adhesive (e.g. tile adhesive, etc.). 4.
4. shorten necessary intermediate pieces along the predetermined breaking points. 5.
5. fill in missing parts and edge areas with SlimaTherm® dry construction edge elements.
6. individual pipe runs, e.g. in front of the heating circuit manifold or for fixtures etc., can be cut out of the SlimaTherm® drywall edge elements using the hot cutting device.
7. Insert the SlimaTherm® TBS heating pipe into the  $\Omega$ -guide of the heat-conducting lamellae, taking into account the installation plan and the marking regarding flow and return contained therein.
8. Request/carry out a visual inspection, filling and pressure test according to DIN EN 1264 pressure protocol.
9. glue the self-adhesive armour decoupling DimaMat® SPZ 1 over the entire surface of the SlimaTherm® dry construction elements with an overlap of 5 cm (prior cleaning of the surface is required).
10. apply the extremely low-stress special floor levelling compound MortaColl® BAM 35-FS in 2-5 mm layers to create a surface with increased evenness requirements, e.g. for laying large-format tiles and natural stones or parquet. When using linoleum or carpet, we recommend increasing the minimum layer thickness of the floor levelling compound to at least 10 mm.

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## Load-bearing behaviour/testing:



Figure 2: Sticking on the system elements



Figure 3: Test setup with DimaMat SPZ 1

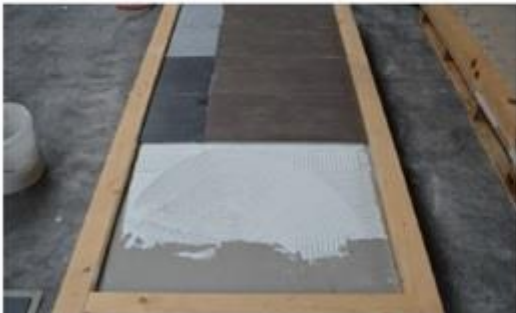


Figure 4: Test setup with laid tile floor

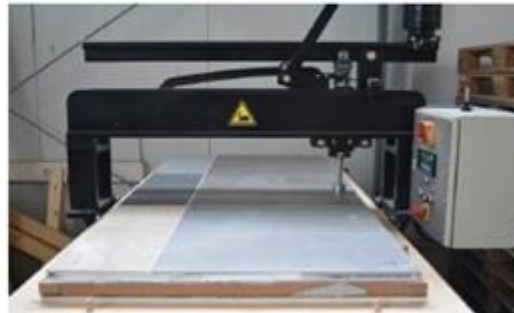


Figure 5: Test setup for determining the load deformation



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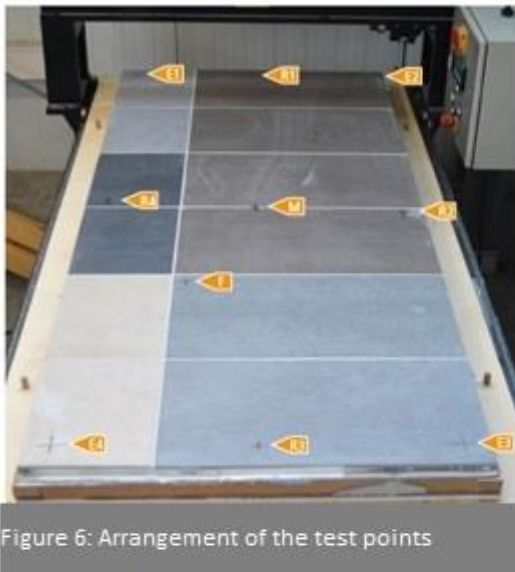


Figure 6: Arrangement of the test points

	Distance from lower panel edge in mm	Distance from left edge of panel in mm
R1	1790	420
R2	920	790
R3	50	420
R4	920	50
E1	1790	50
E2	1790	790
E3	50	790
E4	50	50
M	920	420
F	600	260

Table 1: Location of the test centres

Table 2: Deformation of the test object when the load is placed in the corner of the panel

	0 N	1.000 N	1.200 N	1.500 N	2.000 N	2.400 N	3.000 N	3.600 N	4.000 N	4.800 N	5.000 N	6.000 N
E1	0,00 mm	0,53 mm	0,62 mm	0,82 mm	0,99 mm	1,20 mm	1,43 mm	1,69 mm	2,22 mm			
E2	0,00 mm	0,72 mm	0,85 mm	1,02 mm	1,24 mm	1,37 mm	1,62 mm	1,81 mm	2,46 mm			
E3	0,00 mm	1,34 mm	1,46 mm	1,61 mm	1,83 mm	1,94 mm	2,20 mm	2,39 mm				
E4	0,00 mm	0,67 mm	0,78 mm	0,91 mm	1,08 mm	1,31 mm	1,49 mm	1,66 mm				
E <sub>Medium</sub>	0,00 mm	0,82 mm	0,93 mm	1,09 mm	1,29 mm	1,46 mm	1,69 mm	1,89 mm				

Table 3: Deformation of the test object when the load is placed at the edge of the panel

	0 N	1.000 N	1.200 N	1.500 N	2.000 N	2.400 N	3.000 N	3.600 N	4.000 N	4.800 N	5.000 N	6.000 N
R1	0,00 mm	0,43 mm	0,51 mm	0,61 mm	0,77 mm	0,90 mm	1,03 mm	1,20 mm				
R2	0,00 mm	0,40 mm	0,49 mm	0,60 mm	0,79 mm	0,89 mm	1,11 mm	1,21 mm	1,34 mm			
R3	0,00 mm	0,36 mm	0,42 mm	0,53 mm	0,67 mm	0,76 mm	0,85 mm	1,07 mm				
R4	0,00 mm	0,60 mm	0,67 mm	0,71 mm	0,96 mm	1,07 mm	1,19 mm	1,32 mm				
R <sub>Medium</sub>	0,00 mm	0,45 mm	0,52 mm	0,61 mm	0,80 mm	0,91 mm	1,05 mm	1,20 mm				

Table 4: Deformation of the test object when the load is placed in the centre of the panel and at the cross joint

	0 N	1.000 N	1.200 N	1.500 N	2.000 N	2.400 N	3.000 N	3.600 N	4.000 N	4.800 N	5.000 N	6.000 N
M <sub>centre</sub>	0 mm	0,57 mm	0,66 mm	0,75 mm	0,88 mm	0,96 mm	1,08 mm	1,19 mm				
F <sub>joint</sub>	0 mm	0,46 mm	0,56 mm	0,67 mm	0,79 mm	0,89 mm	1,00 mm	1,11 mm				

■ Tile crack



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The test carried out here serves to verify the pre-deformation (deflection) under an acting point load. The test yields the following results for a deflection of 3 mm or without damage to the topsoil:

Table 5: Test results

	Result	with security factor 1.2	with security factor 1.3
E1	3.600 N	3.000 N	2.769 N
E2	3.600 N	3.000 N	2.769 N
E3	3.600 N	3.000 N	2.769 N
E4	3.600 N	3.000 N	2.769 N
B1	3.600 N	3.000 N	2.769 N
B2	3.600 N	3.000 N	2.769 N
B3	3.600 N	3.000 N	2.769 N
B4	3.600 N	3.000 N	2.769 N
M	3.600 N	3.000 N	2.769 N
F	3.600 N	3.000 N	2.769 N

The tested drywall construction is suitable for a point load of 3,000 N with a safety factor of 1.2 and a point load of 2,769 N with a safety factor of 1.3.

Thus, this construction is to be approved with a safety factor of 1.2 for the application areas A1, A2, A3, B1, B2 and D1 according to EN1991/NA.

With a safety factor of 1.3, the construction is to be approved for the application areas A1, A2, A3, B1 and D1 according to EN 1991/NA.

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