

fischer 

TherMax and TherMax II.
Thermal separation with
secure hold.



TherMax: Secure stand-off installation on external thermal insulation composite systems.

The fischer TherMax solve a problem that has been prevented by any efficient building insulation (ETICS) so far. Until now, the classic distance installation with spacer tubes or wooden blocks was the standard. But every attached threaded rod or clamp tears a gap in the thermal insulation. But not with the fischer TherMax and

TherMax II stand-off installation system. fischer TherMax interrupts the thermal flow in the anchoring with the anti-cold cone made of glass fibre reinforced plastic. The cone is self-tapping and mills directly through the plaster into the insulation material. This enables economical and adjustable installation without special tools.



No chance for thermal bridges.

Building thermography shows where thermal bridges are threatening:

For example on windows, doors, joints and junctions. In other words, everywhere where the insulation is penetrated. This leads to higher transmission heat loss and thus to higher reheating thermal demand and higher heating costs. With fischer TherMax and TherMax II, the heat stays inside the building and damp spots that lead to mould are avoided.

Two systems, one goal. Avoid thermal bridges.



TherMax 8 and 10



TherMax II 12 and 16

TherMax II – four details that make the difference.

Drill hole compensation:
Unique compensation for angled drill holes of up to 5°.

Adjustability:
Maximum safety and flexibility thanks to approved adjustment without expensive special tools.

0-5 mm

0-7 mm

Driving rain resistance without additional sealing:
True driving rain resistance and lasting protection against moisture.

Optimal cone geometry:
For precise and easy milling without tearing the plaster surface.

Worry-free installation on ETICS – tested for driving rain resistance and especially easy to install.

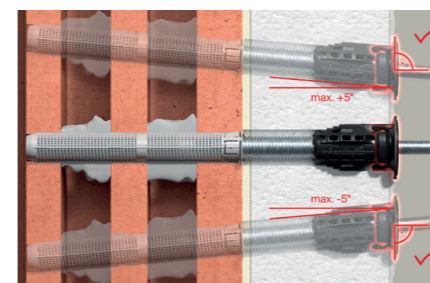
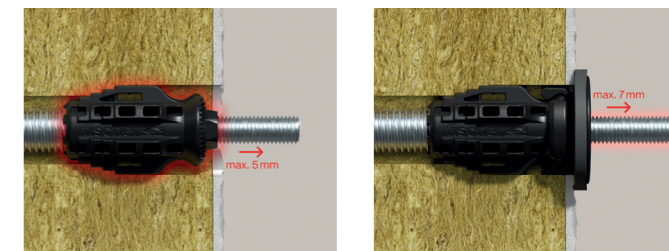


Driving rain resistance:

The elastic EPDM sealing ring is placed on the anti-cold cone at the end of installation. This ensures that the sealing is not damaged by the plaster during installation – a significant advantage compared to other systems. This ensures 100% functionality and guarantees driving rain resistance.

Approved adjustment:

The anti-cold cone and threaded pin can be adjusted retrospectively without expensive special tools to ensure precise alignment. This offers maximum flexibility and is covered by the approval – ensuring real safety.

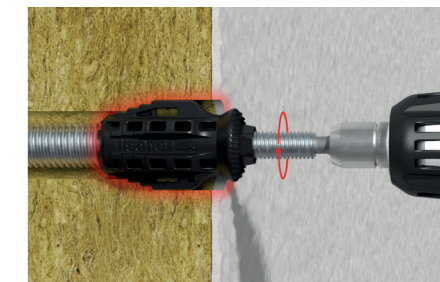


Levelling of angled drill holes:

Thanks to the articulated connection between the anti-cold cone and the cover cap, angled drill holes of up to 5° can be compensated for – while maintaining the system's unchanged structural properties.

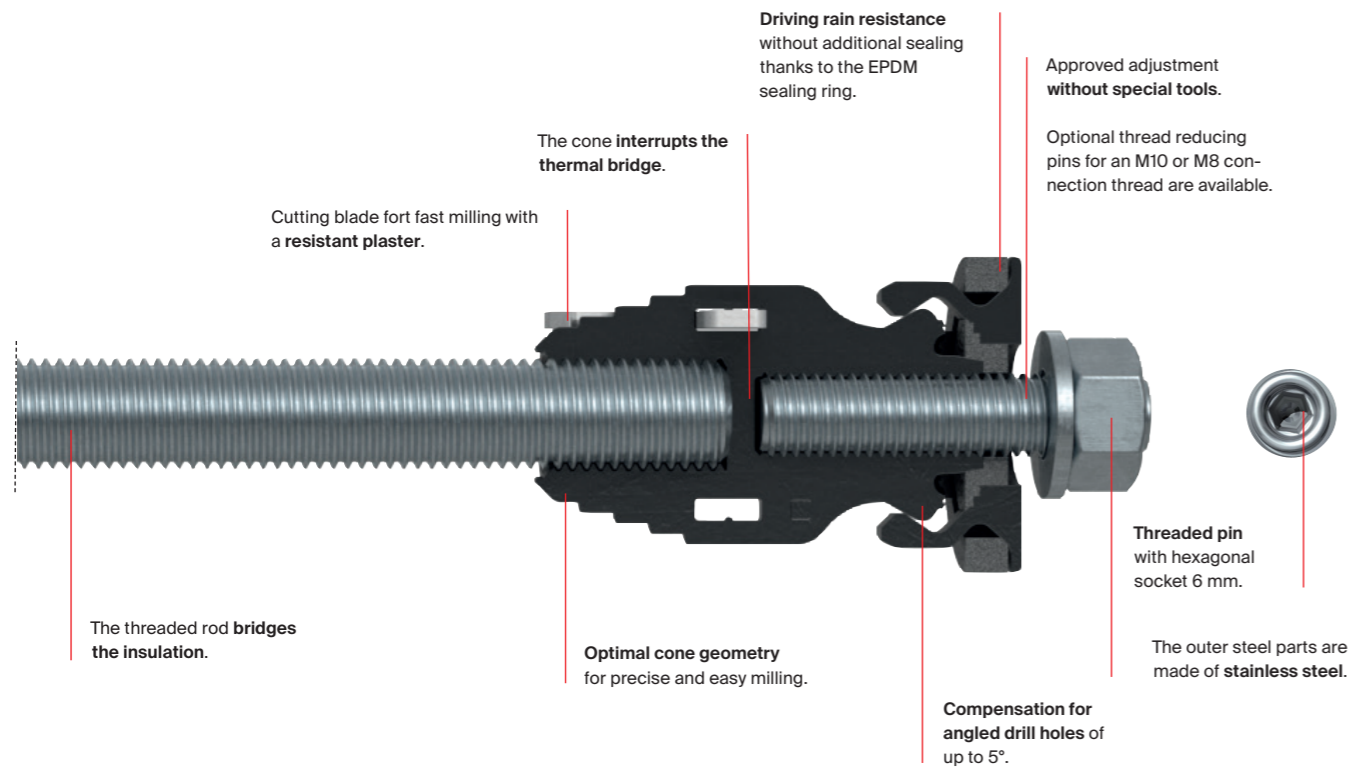
Optimized geometry of the anti-cold cone:

The optimized geometry of the cone enables easy and precise cutting into the ETICS. This makes installation particularly easy and at the same time prevents damage to the insulation material and plaster - ensuring a secure, clean, and long-lasting installation.



TherMax II 12 and 16.

The secure stand-off installation of heavy loads on ETICS.

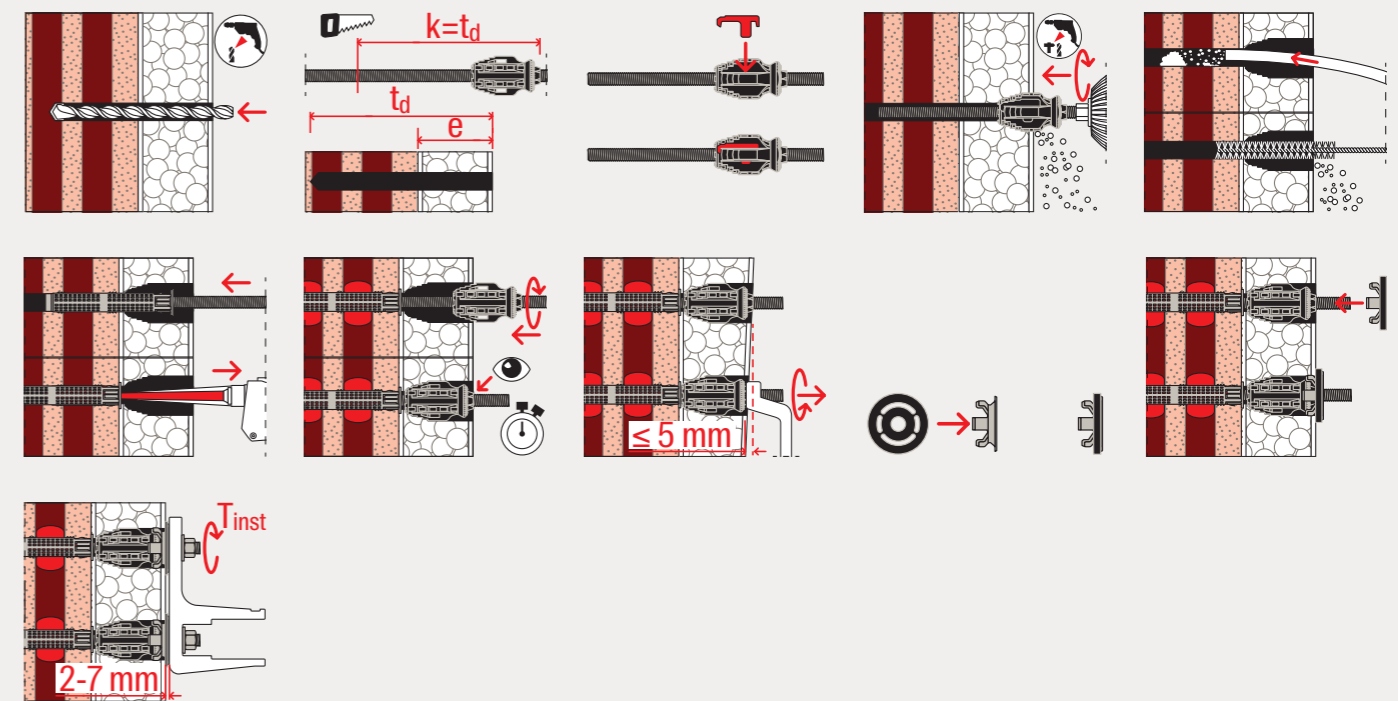


Your advantages at a glance

- The anti-cold cone made of glass fiber reinforced plastic interrupts the thermal bridge between the fixture and the anchorage in the masonry.
- The optimized geometry of the cone enables easy and precise cutting into the ETICS. This makes installation particularly easy and at the same time prevents damage to the insulation material and plaster.
- The elastic EPDM sealing ring is placed on the anti-cold cone at the end of installation. This ensures that the seal is not damaged by the plaster during installation and guarantees 100% functionality and resistance to driving rain. Additional sealing of the annular gap with an elastic sealant and adhesive is not necessary.
- The anti-cold cone and threaded pin can be adjusted retrospectively without expensive special tools to ensure precise alignment. This offers maximum flexibility and is also covered by the approval.
- Thanks to the articulated connection between the anti-cold cone and the cover cap, angled drill holes of up to 5° can be compensated for.
- The stand-off installation system is approved in combination with a wide variety of injection mortars for high loads in a wide range of building materials.
- With just one TherMax II, insulation thicknesses of 60 to 300 mm in concrete and up to 250 mm in perforated building materials can be covered. The threaded rod is shortened to the appropriate insulation thickness at the installation site.
- The parts of TherMax II that lie outside the insulation are made of stainless steel.

Installation

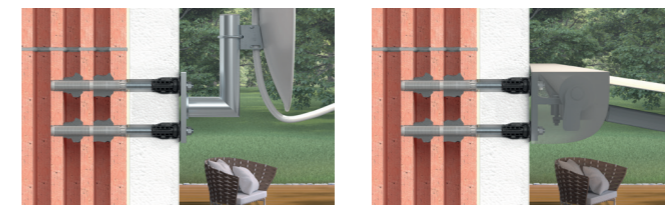
Installation



Functioning

- The TherMax II is suitable for pre-positioned installation.
- The self-tapping, glass fibre reinforced cone cuts its own way through the plaster into the insulation during installation.
- The anti-cold cone uses a thermal barrier to minimise heat losses.
- In the case of a resistant plaster (e.g. thick cement plaster), it is recommended to use the included TherMax II cutting blade for grinding out the plaster.
- Inclined drill holes up to 5° are levelled by the separated cover cap with sealing ring in combination with the rounded head of the anti-cold cone.
- The elastic EPDM sealing ring is placed loosely on the cover cap and thus provides permanent protection against moisture and driving rain.
- The anti-cold cone and the threaded pin can be subsequently adjusted.

Functioning



Certificates / Features



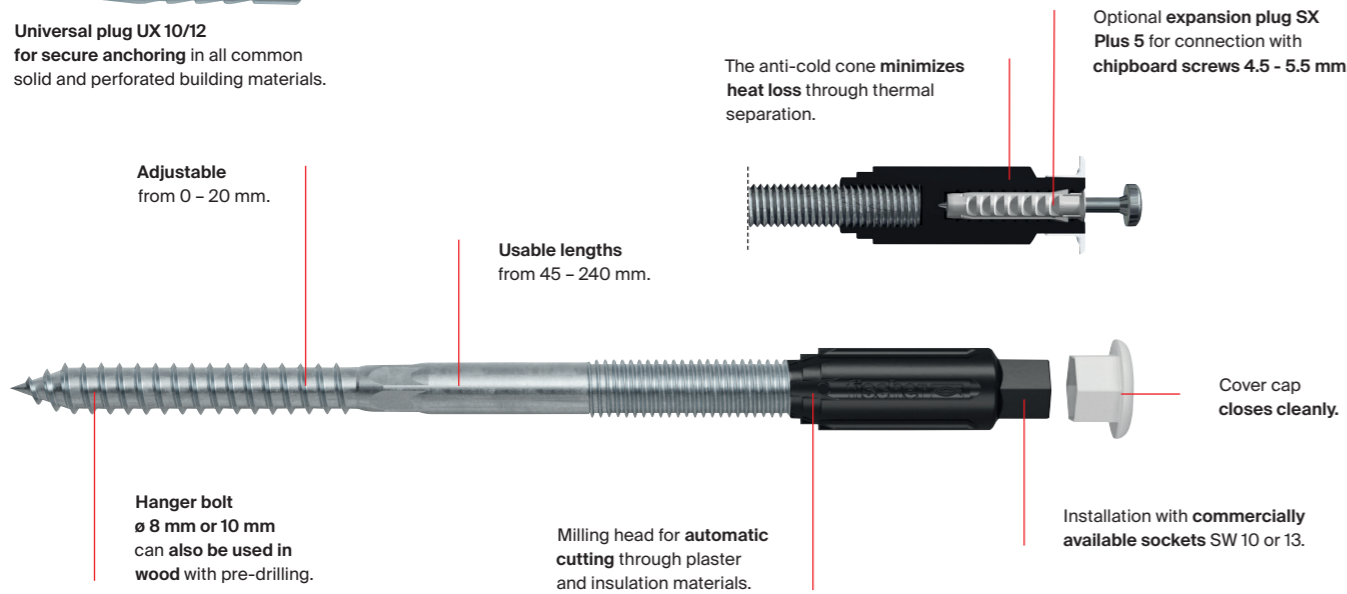


TherMax 8 and 10.

The simple form of thermal stand-off installation.



Universal plug UX 10/12 for secure anchoring in all common solid and perforated building materials.



Your advantages at a glance

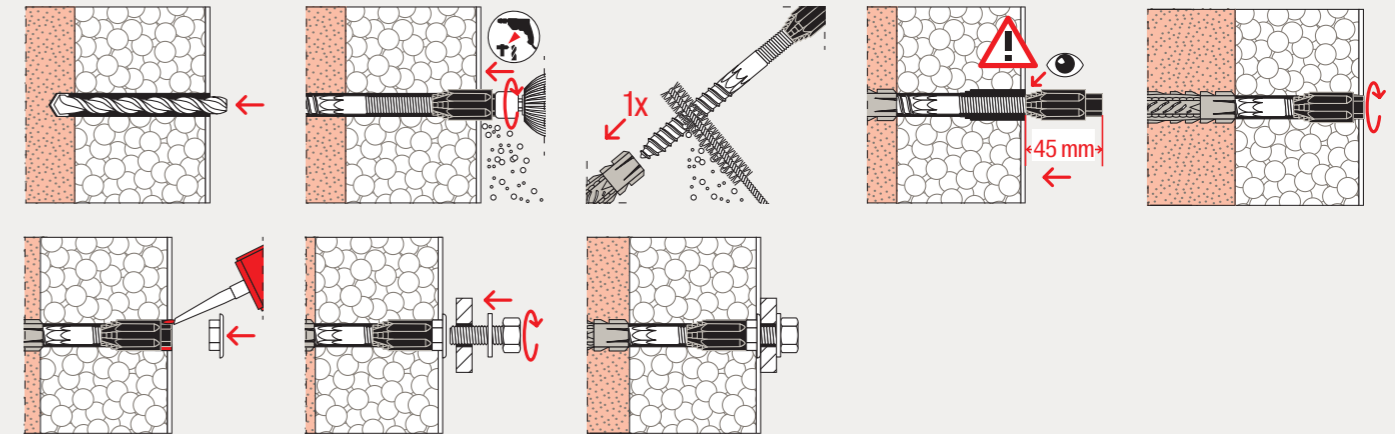
- The stand-off installation allows for the fixture to be adjusted to the exact position required, whereby pressure marks and damage to the ETICS are avoided.
- The plastic cone creates a thermal barrier between the fixture and the anchorage in the substrate and offers an energy-optimised fixing.
- The glass fibre reinforced plastic cone cuts its own way through the ETICS with a positive fit, and allows for a simple and fast installation without the need for any special tools.
- Combining TherMax 8 and 10 with the universal plug UX provides a secure anchoring in the substrate.
- Without UX plug, direct mounting in wood substrate is possible after pre-drilling.

Functioning

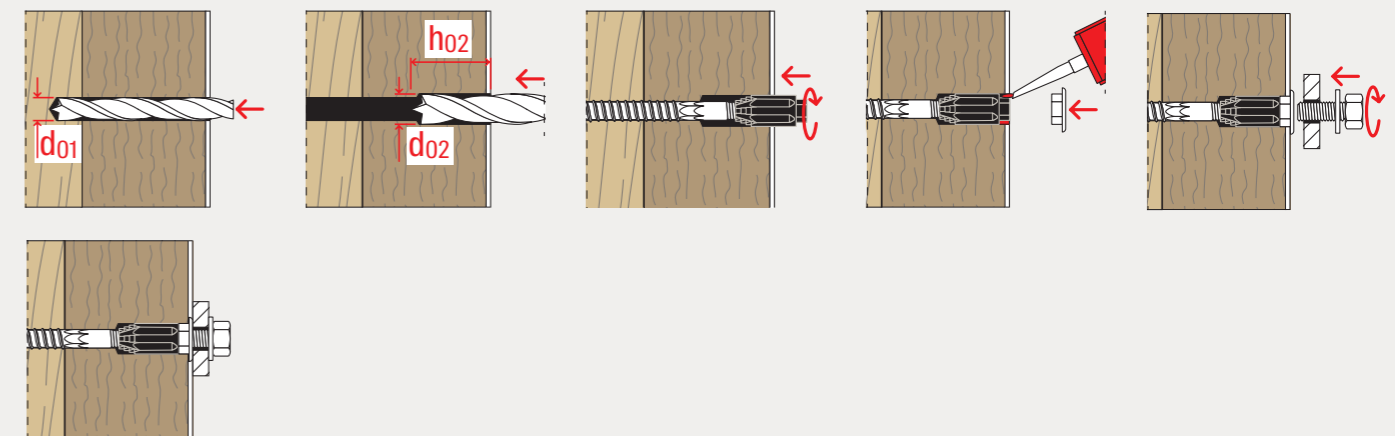


Installation

Installation in masonry



Installation in wood



Functioning

- TherMax 8 and 10 are suitable for pre-positioned installation.
- The self-tapping, glass fibre reinforced cone cuts its own way through the plaster into the insulation during installation.
- The anti-cold cone uses a thermal barrier to minimise heat losses.
- The installation does not require any special tools.
- For use in wood without a plug, the wood (see the footnote beneath the load table) and plaster must be pre-drilled.
- The assortment offers connection possibilities using M6/8/10 metric screws, 6.3 mm self-tapping screws, 6.0 mm chipboard screws, and 4.5 - 5.5 mm chipboard screws if using an SX Plus 5 plug.

TherMax 8:

d_{01} in wood = 5 mm
 d_{02} in the insulation = 14 mm
 h_{02} = 50 mm

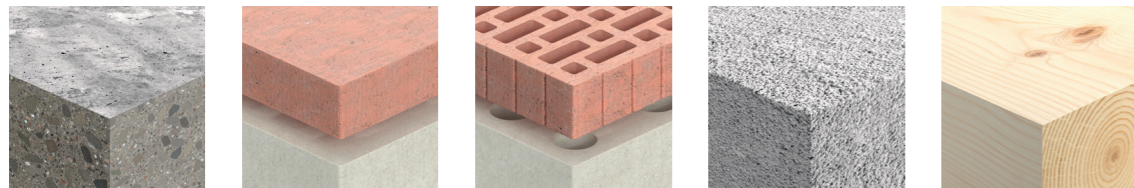
TherMax 10:

d_{01} in wood = 7 mm
 d_{02} in the insulation = 18 mm
 h_{02} = 50 mm

Recommendations and applications

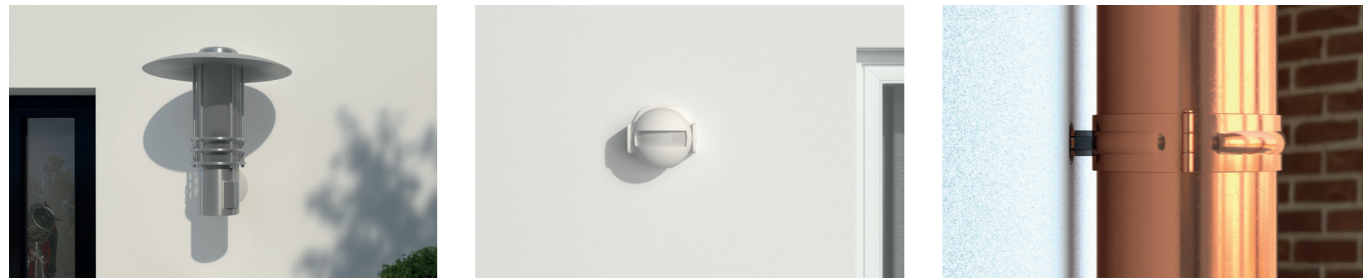
Recommendations

Suitable for building materials such as:

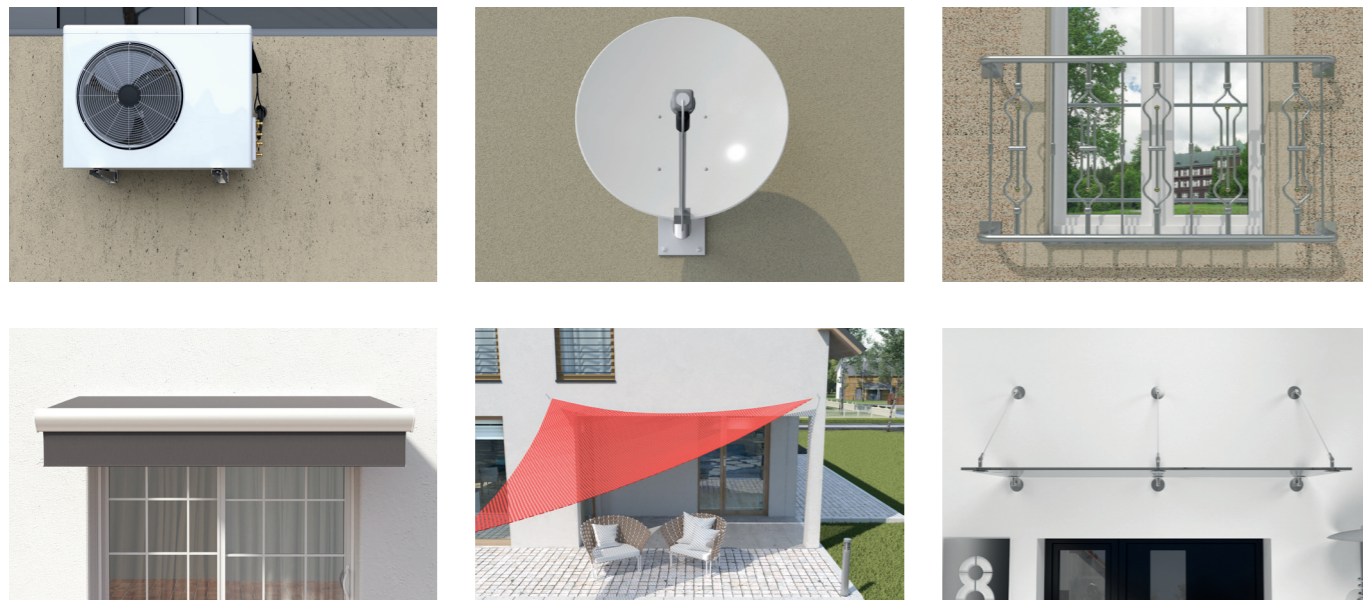


Concrete Solid brick Perforated brick Aerated concrete Wood
(Only TherMax 8 and 10)

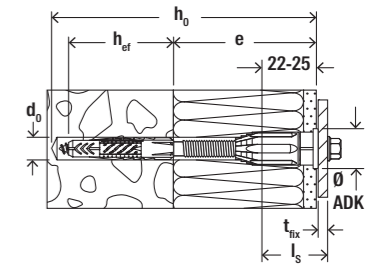
Applications TherMax 8 and 10



Applications TherMax II 12 and 16



Assortment TherMax 8 and 10



Stand-off installation TherMax 8 and 10



TherMax 8 and 10

Item	Item No.	Drill hole diameter	Drill hole depth	Max. thickness of non-bearing layer	Anchorage depth	Cover cap-ø	Width across nut	Chipboard/metric/sheet metal screw	Sales unit
		d _o [mm]	h _o [mm]	e [mm]	h _{ef} [mm]	ADK [mm]	SW [mm]		[pcs]
TherMax 8/60 M6	045685 ¹⁾	10	120	45 – 60	60	18	10	4,5 - 6,0 / M6 / 6,3	20
TherMax 8/80 M6	045686 ¹⁾	10	140	60 – 80	60	18	10	4,5 - 6,0 / M6 / 6,3	20
TherMax 8/100 M6	045687 ¹⁾	10	160	80 – 100	60	18	10	4,5 - 6,0 / M6 / 6,3	20
TherMax 8/120 M6	045688 ¹⁾	10	180	100 – 120	60	18	10	4,5 - 6,0 / M6 / 6,3	20
TherMax 8/140 M6	045689 ¹⁾	10	200	120 – 140	60	18	10	4,5 - 6,0 / M6 / 6,3	20
TherMax 8/160 M6	045690 ¹⁾	10	220	140 – 160	60	18	10	4,5 - 6,0 / M6 / 6,3	20
TherMax 8/180 M6	045691 ¹⁾	10	240	160 – 180	60	18	10	4,5 - 6,0 / M6 / 6,3	20
TherMax 10/100 M6	045692 ¹⁾	12	160	80 – 100	70	22	13	4,5 - 6,0 / M6 / 6,3	20
TherMax 10/120 M6	045693 ¹⁾	12	180	100 – 120	70	22	13	4,5 - 6,0 / M6 / 6,3	20
TherMax 10/140 M6	045694 ¹⁾	12	200	120 – 140	70	22	13	4,5 - 6,0 / M6 / 6,3	20
TherMax 10/160 M6	045695 ¹⁾	12	220	140 – 160	70	22	13	4,5 - 6,0 / M6 / 6,3	20
TherMax 10/180 M6	045696 ¹⁾	12	240	160 – 180	70	22	13	4,5 - 6,0 / M6 / 6,3	20
TherMax 10/200 M6	512605 ¹⁾	12	260	180 – 200	70	22	13	4,5 - 6,0 / M6 / 6,3	20
TherMax 10/220 M6	514250 ¹⁾	12	280	200 – 220	70	22	13	4,5 - 6,0 / M6 / 6,3	20
TherMax 10/240 M6	514251 ¹⁾	12	300	220 – 240	70	22	13	4,5 - 6,0 / M6 / 6,3	20
TherMax 10/100 M8	045697 ²⁾	12	160	80 – 100	70	22	13	M8	20
TherMax 10/120 M8	045698 ²⁾	12	180	100 – 120	70	22	13	M8	20
TherMax 10/140 M8	045699 ²⁾	12	200	120 – 140	70	22	13	M8	20
TherMax 10/160 M8	045700 ²⁾	12	220	140 – 160	70	22	13	M8	20
TherMax 10/180 M8	514252 ²⁾	12	240	160 – 180	70	22	13	M8	20
TherMax 10/200 M8	514253 ²⁾	12	260	180 – 200	70	22	13	M8	20
TherMax 10/220 M8	514254 ²⁾	12	280	200 – 220	70	22	13	M8	20
TherMax 10/240 M8	514255 ²⁾	12	300	220 – 240	70	22	13	M8	20
TherMax 10/100 M10	045702 ²⁾	12	160	80 – 100	70	22	13	M10	20
TherMax 10/120 M10	045703 ²⁾	12	180	100 – 120	70	22	13	M10	20
TherMax 10/140 M10	045704 ²⁾	12	200	120 – 140	70	22	13	M10	20
TherMax 10/160 M10	045705 ²⁾	12	220	140 – 160	70	22	13	M10	20
TherMax 10/180 M10	514256 ²⁾	12	240	160 – 180	70	22	13	M10	20
TherMax 10/200 M10	514257 ²⁾	12	260	180 – 200	70	22	13	M10	20
TherMax 10/220 M10	514258 ²⁾	12	280	200 – 220	70	22	13	M10	20
TherMax 10/240 M10	514259 ²⁾	12	300	220 – 240	70	22	13	M10	20

¹⁾ Including SX Plus 5

²⁾ Min. screw length l_s = 22mm + thickness of mounting member t_m; for use in wood without universal plug UX, consider drill hole diameter in footnote under load table.

Assortment TherMax II 12 and 16

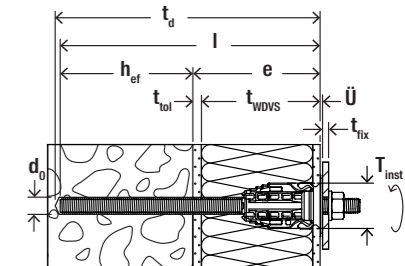
Installation data & accessories TherMax II 12 and 16

Stand-off installation TherMax II 12 and 16



TherMax II 12		TherMax II 16			Sales unit
Item	Zinc-plated steel gvz Item No.	Stainless steel R Item No.	Approval DIBt	Contents	[pcs]
TherMax II 12/110 M12	575222	—	●	20 x TherMax II M12 x 240 20 x Sleeve 20 x 130 5 x Bit 5 x Cutting blade 5 x Manual	20
TherMax II 12/110 M12 (2)	575223	—	●	2 x TherMax II M12 x 240 2 x Sleeve 20 x 130 1 x Bit 1 x Cutting blade 1 x Manual	1
TherMax II 12/110 M12 R	—	575226	●	10 x TherMax II M12 x 240 R 10 x Sleeve 20 x 130 3 x Bit 3 x Cutting blade 3 x Manual	10
TherMax II 16/170 M12	575227	—	●	20 x TherMax II M16 x 300 20 x Sleeve 20 x 130 5 x Bit 5 x Cutting blade 5 x Extension hose for static mixer 5 x Manual	20
TherMax II 16/250 M12	575228	—	●	20 x TherMax II M16 x 380 20 x Sleeve 20 x 130 5 x Bit 5 x Cutting blade 5 x Extension hose for static mixer 5 x Manual	20
TherMax II 16/250 M12 (2)	575229	—	●	2 x TherMax II M16 x 380 2 x Sleeve 20 x 130 1 x Bit 1 x Cutting blade 1 x Extension hose for static mixer 1 x Manual	1
TherMax II 16/250 M12 R	—	575232	●	10 x TherMax II M16 x 380 10 x Sleeve 20 x 130 3 x Bit 3 x Cutting blade 3 x Extension hose for static mixer 3 x Manual	10

Installation data



Type	Length of TherMax II incl. anti-cold cone l [mm]	Length of the threaded rod l _G [mm]	Building material + insulation				Drill hole diameter d ₀ [mm]	Min. anchorage depth h _{ef} [mm]	Drill hole depth t _d [mm]	Thickness of non-bearing layer e [mm]	Fixture Max. fixture thickness t _{fix} [mm]	Con-nection thread	Installa-tion torque T _{inst} [Nm]	Required resin quantity [Scale unit]
			Threaded rod in building material	Building material	Suitable injection anchor sleeve	Building material								
TherMax II 12/110	240	204	M12	Concrete	—	14	70	h _{ef} + e	64 – 170	16 ¹⁾	M12	20	3	
	240	204	M12	Solid brick	—	14	80	h _{ef} + e	64 – 160	16 ¹⁾	M12	20	4	
	240	204	M12	Perforated brick	FIS H 20x130 K	20	130	h _{ef} + e + 10 mm	64 – 110	16 ¹⁾	M12	20	29	
	240	204	M12	Aerated concrete	—	14	100	h _{ef} + e	64 – 140	16 ¹⁾	M12	20	5	
TherMax II 16/170	300	264	M16	Concrete	—	18	80	h _{ef} + e	64 – 220	16 ¹⁾	M12	20	5	
	300	264	M16	Solid brick	—	18	80	h _{ef} + e	64 – 220	16 ¹⁾	M12	20	5	
	300	264	M16	Perforated brick	FIS H 20x130 K	20	130	h _{ef} + e + 10 mm	64 – 170	16 ¹⁾	M12	20	29	
	300	264	M16	Aerated concrete	—	18	100	h _{ef} + e	64 – 200	16 ¹⁾	M12	20	6	
TherMax II 16/250	380	344	M16	Concrete	—	18	80	h _{ef} + e	64 – 300	16 ¹⁾	M12	20	5	
	380	344	M16	Solid brick	—	18	80	h _{ef} + e	64 – 300	16 ¹⁾	M12	20	5	
	380	344	M16	Perforated brick	FIS H 20x130 K	20	130	h _{ef} + e + 10 mm	64 – 250	16 ¹⁾	M12	20	29	
	380	344	M16	Aerated concrete	—	18	100	h _{ef} + e	64 – 280	16 ¹⁾	M12	20	6	

¹⁾ The setscrews may be replaced by a setscrew / fixing screw up to a length 200 mm.

Accessories

Injection mortar



FIS EM Plus 390 S

FIS SB 390 S

FIS V Plus 360 S

Item	Item No.	Approval			Languages on the cartridge	Contents	Sales unit [pcs]
		DIBt	ETA	ICC			
FIS V Plus 360 S	558744	●	●	●	EN	1 x Cartridge 360 ml, 2 x Static mixer FIS MR Plus	1
FIS V Plus 360 S	558752	●	●	●	DE, FR, NL	1 x Cartridge 360 ml, 2 x Static mixer FIS MR Plus	1
FIS V Plus 360 S	558746	●	●	●	EN, ES, PT	1 x Cartridge 360 ml, 2 x Static mixer FIS MR Plus	1
FIS V Plus 360 S	558753	●	●	●	IT, PL, RO	1 x Cartridge 360 ml, 2 x Static mixer FIS MR Plus	1
FIS V Plus 360 S	558762	●	●	●	CS, HU, SK	1x Cartridge 360 ml, 2 x Static mixer FIS MR Plus	1
FIS V Plus 360 S	561055	●	●	●	EN, PL, UK	1x Cartridge 360 ml, 2 x Static mixer FIS MR Plus	1
FIS EM Plus 390 S	544171	●	●	●	DE, FR	1 x Cartridge 390 ml, 2 x static mixer FIS MR Plus	1
FIS EM Plus 390 S	544154	●	●	●	EN, FR, NL	1 x Cartridge 390 ml, 2 x static mixer FIS MR Plus	1
FIS EM Plus 390 S	544176	●	●	●	CS, RO, SK	1 x Cartridge 390 ml, 2 x Static mixer FIS MR Plus	1
FIS SB 390 S	519451	●	—	●	DE, FR, NL	1 x Cartridge 390 ml, 2 x Static mixer FIS MR Plus	1
FIS SB 390 S	518831	●	—	●	EN, ES, PT	1 x Cartridge 390 ml, 2 x Static mixer FIS MR Plus	1
FIS SB 390 S	520555	●	—	●	CS, RO, SK	1 x Cartridge 390 ml, 2 x Static mixer FIS MR Plus	1

Accessories TherMax II 12 and 16

Accessories

Injection mortar



FIS SB 390 S

FIS DM S Pro

Item	Item No.	Approval			Languages on the cartridge	Contents	Sales unit [pcs]
		DIBt	ETA	ICC			
FIS SB 390 S	519450	●	—	●	DE, EN, IT	1 x Cartridge 390 ml, 2 x Static mixer FIS MR Plus	1
FIS DM S Pro	563337	—	—	—	—	1 x manual dispenser for cartridge sizes 150 ml, 300 ml, 360 ml and 390 ml	1

Accessories

Cleaning brushes



BS

Item	Item no.	Length	Length	Brush diameter [mm]	For drill diameter [mm]	Sales unit [pcs]
		L ₁ [mm]	L ₂ [mm]			
BS ø 14	078180	250	80	16	14	1
BS ø 16/18	078181	250	80	20	16 / 18	1
BS ø 20/22	052277	300	80	25	20 / 22	1
Brush set ø20/30 mm	048981	250	80	—	16 - 28	1
Brush set ø14/20 mm	048980	230	80	—	8 - 16	1

Blow-out pump



AB G

Item	Item no.	Sales unit [pcs]
Blow-out pump AB G	567792	1

Accessories

Accessories



TherMax II cutting blade

TherMax II thread reducing pin

Item	Item no.	Contents	Sales unit [pcs]
TherMax II cutting blade, 25 pieces	575235	25 x Cutting blades	1
TherMax II thread reducing pin M12/M8 R	569858	10 x Thread reducing pin M12/M8 R (total length 59 mm; M12 29 mm, M8 30 mm) 10 x Washer 8,4 x 16 x 1,6 A4 10 x Hexagon nut M8 A4 SW13 1 x Installation instruction	10
TherMax II thread reducing pin M12/M10 R	553834	10 x Thread reducing pin M12/M10 R (total length 59 mm; M12 29 mm, M10 30 mm) 10 x Washer 10,5 x 25 x 3 A4 10 x Hexagon nut M10 A4 SW17 1 x Installation instruction	10

Loads TherMax 8 and 10

Loads

Stand-off installation TherMax 8 and 10

Recommended loads¹⁾ of a single anchor in concrete and masonry.

Type		TherMax 8	TherMax 10
Supplied type of plug for the anchorage in the base material		UX 10 x 60	UX 12 x 70
Recommended tensile loads in the respective base material N _{rec} ²⁾			
Concrete ³⁾⁴⁾	≥ C20/25	[kN] 1.00	1.00
Solid brick ³⁾⁴⁾	≥ Mz 12	[kN] 0.50	0.70
Perforated sand-lime brick ³⁾⁴⁾	≥ KSL 12	[kN] 0.60	0.80
Vertically perforated brick ⁴⁾	≥ HLz 12	[kN] 0.20	0.30
Aerated concrete ³⁾⁴⁾	≥ AAC 4	[kN] 0.40	0.60
Recommended shear load V _{rec} ⁵⁾ , valid for all above mentioned base materials for the stated insulation thickness			
External Thermal Insulation Composite System ⁵⁾		≤ 240 mm	[kN] 0.15
			0.20

¹⁾ Required safety factors are considered. Valid for installation and use in dry base material for temperatures in the substrate up to +24 °C (resp. short term up to +40 °C).

²⁾ The drilling method is to be adapted to the building material used. As different joint qualities are possible, the given values only apply for installation in the brick.

³⁾ The given recommended tensile loads apply for fastenings with metric screws.

When using chipboard screws with diameter 6.0 mm they have to be reduced to 0.35 kN.

⁴⁾ The given recommended tensile loads apply for fastenings with metric screws.

When using a SX Plus 5 plug chipboard screws with diameter 4.5 - 5.5 mm they have to be reduced to 0.1 kN.

⁵⁾ Values are valid for an ETICS made from PS- respectively PU-rigid foam panels. Thickness of rendering minimum 6 mm.

Loads

Stand-off installation TherMax 8 and 10

Recommended shear loads¹⁾ for a single anchor.

Type		UX 10 + TherMax 8 ³⁾	UX 12 + TherMax 10 ³⁾
Recommended shear loads V _{rec} ¹⁾			
External thermal insulation composite system ²⁾		≤ 240 mm	[kN] 0.15
			0.20

¹⁾ Required safety factors are considered. Valid for installation and use in dry base material for temperatures in the substrate up to +24 °C (resp. short term up to +40 °C).

²⁾ Values are valid for an ETICS made from PS- respectively PU-rigid foam panels. Thickness of rendering minimum 6 mm.

³⁾ In wood installation without plug.

Loads

Stand-off installation TherMax 8 and 10

Recommended tensile loads¹⁾ for a single anchor in wood.

Type		TherMax 8	TherMax 10
Recommended tensile loads in the respective base material N _{rec} ²⁾			
Beech	≥ D35	[kN] 1.00 ³⁾	1.00 ³⁾
Spruce	≥ C24	[kN] 1.00 ⁴⁾	1.00 ⁵⁾

¹⁾ Required safety factors are considered. Valid for installation and use in dry base material for temperatures in the substrate up to +24 °C (resp. short term up to +40 °C).

²⁾ Installation without UX plug. Edge distances and spacings following Eurocode 5.

³⁾ Pre-drilled wood with diameter 6 mm.

⁴⁾ Pre-drilled wood with diameter 5 mm.

⁵⁾ Pre-drilled wood with diameter 7 mm.

Loads TherMax II 12 and 16

Loads

Stand-off installation TherMax II 12 and 16 with load-bearing anchor rod made of zinc-plated steel¹²⁾ and a displacement of 3 mm

The below load table is valid for short-term loading (e.g. wind load). Impact rain tightness is guaranteed up to a displacement of 3 mm and a maximum distance of 5 mm between the attachment and the plaster surface.
 Highest permissible loads^{1) 5) 7)} of a TherMax II within an anchor group²⁾ in concrete with the injection mortars FIS V Plus, FIS EM Plus or FIS SB and in masonry with the injection mortar FIS V Plus.

Type	Effective anchor-age depth $h_{ef}^{4)8)}$ [mm]	Permis-sible tensile load $N_{perm}^{3)10)}$ [kN]	Permis-sible shear load at e = 65 mm $V_{perm}^{3)}$ [kN]	Permis-sible shear load at e = 100 mm $V_{perm}^{3)}$ [kN]	Permis-sible shear load at e = 120 mm $V_{perm}^{3)}$ [kN]	Permis-sible shear load at e = 140 mm $V_{perm}^{3)}$ [kN]	Permis-sible shear load at e = 160 mm $V_{perm}^{3)}$ [kN]	Permis-sible shear load at e = 180 mm $V_{perm}^{3)}$ [kN]	Permis-sible shear load at e = 200 mm $V_{perm}^{3)}$ [kN]	Permis-sible shear load at e = 250 mm $V_{perm}^{3)}$ [kN]	Permis-sible shear load at e = 300 mm $V_{perm}^{3)}$ [kN]	Minimum member thick-ness h_{min} [mm]	Mini-mum spacing $S_{min} \parallel / S_{min-L}^{9)}$ [mm]	Mini-mum edge dis-tance c_{min} [mm]
Concrete, cracked and non-cracked, strength class \geq C20/25														
TherMax II 12 ⁹⁾	70	5.10 ⁹⁾	1.05	0.70	0.59	0.51	0.45	0.40	0.36	0.24	0.18	100	55	55
TherMax II 16 ⁹⁾	80	5.10 ⁹⁾	2.08	1.41	1.19	1.03	0.90	0.81	0.73	0.40	0.22	116	65	65
Solid brick, Mz, EN 771-1; $f_b \geq 12$ N/mm²; $\rho \geq 1.8$ kg/dm³; LxWxH \geq 240x115x71 mm, NF														
TherMax II 12 ⁹⁾	200	2.04	0.86	0.70	0.59	0.51	0.45	0.40	0.36	0.24	0.18	240	80/80	60
TherMax II 16 ⁹⁾	200	2.04	1.29	1.29	1.19	1.03	0.90	0.81	0.73	0.40	0.22	240	80/80	60
Solid sand-lime brick, KS, EN 771; $f_b \geq 20$ N/mm²; $\rho \geq 2.0$ kg/dm³; LxWxH \geq 250x240x240 mm, 8DF														
TherMax II 12 ⁹⁾	≥ 50	2.86	1.05	0.70	0.59	0.51	0.45	0.40	0.36	0.24	0.18	240	80/80	60
TherMax II 16 ⁹⁾	≥ 50	2.14	1.86	1.41	1.19	1.03	0.90	0.81	0.73	0.40	0.22	240	80/80	60
Vertically perforated brick type B, HLz, EN 771-1; $f_b \geq 12$ N/mm²; $\rho \geq 1.0$ kg/dm³; LxWxH = 370x240x237 mm resp. 500x175x237 mm														
TherMax II 12 ⁹⁾	110 ¹⁰⁾	1.14	0.57	0.57	0.57	0.51	0.45	0.40	0.36	0.24	0.18	175	100/100	100
TherMax II 16 ⁹⁾	110 ¹⁰⁾	1.14	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.40	0.22	175	100/100	100
Perforated sand-lime brick, KSL, EN 771-2; $f_b \geq 12$ N/mm²; $\rho \geq 1.4$ kg/dm³; LxWxH = 240x175x113 mm, 3DF														
TherMax II 12 ⁹⁾	85	1.00	1.05	0.70	0.59	0.51	0.45	0.40	0.36	0.24	0.18	175	100/115	80
TherMax II 16 ⁹⁾	85	1.00	1.14	1.14	1.14	1.03	0.90	0.81	0.73	0.40	0.22	175	100/115	80
Hollow block made of light weight concrete, Hbl, EN 771-3; $f_b \geq 2$ N/mm²; $\rho \geq 1.0$ kg/dm³; LxWxH = 362x240x240 mm														
TherMax II 12 ⁹⁾	110 ¹⁰⁾	0.43	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.24	0.18	240	100/240	60
TherMax II 16 ⁹⁾	110 ¹⁰⁾	0.43	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.22	240	100/240	60
Aerated concrete (cylindrical drill hole), EN 771-4; $f_b \geq 2$ N/mm²; $\rho \geq 0.35$ kg/dm³; LxWxH \geq 599x240x249 mm														
TherMax II 12 ⁹⁾	200	1.43	0.43	0.43	0.43	0.43	0.43	0.40	0.36	0.24	0.18	240	80/80	100
TherMax II 16 ⁹⁾	200	1.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.40	0.22	240	80/80	100

For the design the complete approval Z-21.8-2180 as well as the European Technical Assessments ETA-20/0603, ETA-17/0979, ETA-20/0729 or ETA-12/0258 have to be considered.

- The required partial safety factors for material resistance as well as a partial safety factor for load actions of $\gamma_L = 1.4$ are considered.
- Set-up of one or more TherMax II in a row in direction of shear, for which the clamping of the attachment prevents a torsion on attachment side due to a sufficient stiffness of the attachment or connecting construction. For a clamping on base substrate side only, see approval.
- For combinations of tensile and shear loads as well as reduced edge spacing or edge distances (anchor groups) see approval. The values for tensile loads in masonry are valid only, if the joints of the masonry is completely filled with masonry mortar and there is also a load on the masonry. If the joints are not filled with masonry mortar are not filled with masonry mortar and the edge distance towards the joints is less than c_{min} , the loads have to be reduced by the factor $a = 0.75$. The values for shear loads are valid only, if the joints are filled with masonry mortar. For not completely filled joints they have to be handled like a free edge and a minimum edge distance c_{min} of the anchors to the joints has to be observed. For compression loads and perforated bricks or hollow blocks see approval. Calculative assumed thickness of the attachment $t_{ax} = 6$ mm.
- In vertically perforated bricks HLz, perforated sand-lime bricks KSL as well as hollow blocks made of light weight concrete Hbl the TherMax II 12 (standard version) can bridge non-load bearing layers up to 110 mm and the TherMax II 16 can bridge them up to 250 mm. Larger usable lengths up to 300 mm are possible, if other perforated sleeves and where required longer anchor rods are used and again the anchorage depth gets reduced - see approval.
- The stated permissible loads are valid for anchorages in dry base substrates - use category d/d - and for temperatures up to +50 °C (resp. short-term up to +80 °C) in the area of the injection mortar and during drill hole cleaning in accordance with the approval. The load values apply to anchor rods on base substrate side made of zinc-plated steel¹²⁾ - for other steel grades or stainless steel see approval.
- Complies with the permissible tensile load of the TherMax II cone.
- Intermediate values of the shear load may be linearly interpolated in dependence of "e", if nothing else is mentioned in the approval.
- In solid bricks Mz and solid sand-lime bricks KS the TherMax II 12 (standard version) can bridge non-load bearing layers up to 190 mm (140 mm in aerated concrete) and the TherMax II 16 can bridge them up to 300 mm (280 mm in aerated concrete) - but in solid brick Mz and aerated concrete the above load values have to be reduced. In concrete the TherMax II 12 (standard version) can bridge non-loadbearing layers up to 170 mm and the TherMax II 16 can bridge them up to 330 mm. Larger usable lengths up to 300 mm are possible, if longer anchor rods are used and again in solid bricks Mz if the anchorage depth (compared to above values) gets reduced where required - see approval.
- Minimum spacing with simultaneous reduction of the permissible load for each TherMax II.
- Fully screwed in (L1 (SS) = L2 (FS) = 0 mm)
- It is possible to bridge non-load-bearing layers (e.g. plaster). The minimum anchoring depth $h_{ef,min}$ is 110 mm. If the effective anchoring depth is reduced to $h_{ef,min} < 110$ mm, the values of the next shortest injection anchor sleeve of the same diameter must be used. The smaller characteristic value is decisive.
- Steel grade 5.8 for TherMax II 12 and 4.8 for TherMax II 16

Loads

Stand-off installation TherMax II 12 and 16 with load-bearing anchor rod made of stainless steel R-70 and a displacement of 5 mm

The below load table is valid for short-term loading (e.g. wind load). Impact rain tightness is guaranteed up to a displacement of 3 mm and a maximum distance of 5 mm between the attachment and the plaster surface. For displacements > 3 mm up to max. 5 mm and a maximum distance of 7 mm between the attachment and the plaster surface an additional sealing for the annular gap is required.
 Highest permissible loads^{1) 5) 7)} of a TherMax II within an anchor group²⁾ in concrete with the injection mortars FIS V Plus, FIS EM Plus or FIS SB and in masonry with the injection mortar FIS V Plus.

Type	Effective anchor-age depth $h_{ef}^{4)8)}$ [mm]	Permis-sible tensile load $N_{perm}^{3)10)}$ [kN]	Permis-sible shear load at e = 65 mm $V_{perm}^{3)}$ [kN]	Permis-sible shear load at e = 100 mm $V_{perm}^{3)}$ [kN]	Permis-sible shear load at e = 120 mm $V_{perm}^{3)}$ [kN]	Permis-sible shear load at e = 140 mm $V_{perm}^{3)}$ [kN]	Permis-sible shear load at e = 160 mm $V_{perm}^{3)}$ [kN]	Permis-sible shear load at e = 180 mm $V_{perm}^{3)}$ [kN]	Permis-sible shear load at e = 200 mm $V_{perm}^{3)}$ [kN]	Permis-sible shear load at e = 250 mm $V_{perm}^{3)}$ [kN]	Permis-sible shear load at e = 300 mm $V_{perm}^{3)}$ [kN]	Minimum member thick-ness h_{min} [mm]	Mini-mum spacing $S_{min} \parallel / S_{min-L}^{9)}$ [mm]	Mini-mum edge dis-tance c_{min} [mm]
Concrete, cracked and non-cracked, strength class \geq C20/25														
TherMax II 12 ⁹⁾	70	5.10 ⁹⁾	1.19	0.79	0.67	0.58	0.51	0.45	0.41	0.33	0.28	100	55	55
TherMax II 16 ⁹⁾	80	5.10 ⁹⁾	2.91	1.97	1.66	1.44	1.18	1.02	0.91	0.72	0.48	116	65	65
Solid brick, Mz, EN 771-1; $f_b \geq 12$ N/mm²; $\rho \geq 1.8$ kg/dm³; LxWxH \geq 240x115x71 mm, NF														
TherMax II 12 ⁹⁾	200	2.04	0.86	0.79	0.67	0.58	0.51	0.45	0.41	0.33	0.28	240	80/80	60
TherMax II 16 ⁹⁾	200	2.04	1.29	1.29	1.29	1.29	1.18	1.02	0.91	0.72	0.48	240	80/80	60
Solid sand-lime brick, KS, EN 771; $f_b \geq 20$ N/mm²; $\rho \geq 2.0$ kg/dm³; LxWxH \geq 250x240x240 mm, 8DF														
TherMax II 12 ⁹⁾	≥ 50	2.86	1.19	0.79	0.67	0.58	0.51	0.45	0.41	0.33	0.28	240	80/80	60
TherMax II 16 ⁹⁾	≥ 50	2.14	1.86	1.86	1.66	1.44	1.18	1.02	0.91	0.72	0.48	240	80/80	60
Vertically perforated brick type B, HLz, EN 771-1; $f_b \geq 12$ N/mm²; $\rho \geq 1.0$ kg/dm³; LxWxH = 370x240x237 mm resp. 500x175x237 mm														
TherMax II 12 ⁹⁾	110 ¹⁰⁾	1.14	0.57	0.57	0.57	0.57	0.51	0.45	0.41	0.33	0.28	175	100/100	100
TherMax II 16 ⁹⁾	110 ¹⁰⁾	1.14	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	175	100/100	100
Perforated sand-lime brick, KSL, EN 771-2; $f_b \geq 12$ N/mm²; $\rho \geq 1.4$ kg/dm³; LxWxH = 240x175x113 mm, 3DF														
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Hollow block made of light weight concrete, Hbl, EN 771-3; $f_b \geq 2$ N/mm²; $\rho \geq 1.0$ kg/dm³; LxWxH = 362x240x240 mm														
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TherMax II 16 ⁹⁾	110 ¹⁰⁾	0.43	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	240	100/240	60
Aerated concrete (cylindrical drill hole), EN 771-4; $f_b \geq 2$ N/mm²; $\rho \geq 0.35$ kg/dm³; LxWxH \geq 599x240x249 mm														
TherMax II 12 ⁹⁾	200	1.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	240	80/80	100
TherMax II 16 ⁹⁾	200	1.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	240	80/80	100

For the design the complete approval Z-21.8-2180 as well as the European Technical Assessments ETA-20/0603, ETA-17/0979, ETA-20/0729 or ETA-12/0258 have to be considered.

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- In vertically perforated bricks HLz, perforated sand-lime bricks KSL as well as hollow blocks made of light weight concrete Hbl the TherMax II 12 (standard version) can bridge non-load bearing layers up to 110 mm and the TherMax II 16 can bridge them up to 250 mm. Larger usable lengths up to 300 mm are possible, if other perforated sleeves and where required longer anchor rods are used and again the anchorage depth gets reduced - see approval.
- The stated permissible loads are valid for anchorages in dry base substrates - use category d/d - and for temperatures up to +50 °C (resp. short-term up to +80 °C) in the area of the injection mortar and during drill hole cleaning in accordance with the approval. The load values apply to anchor rods on base substrate side made of stainless steel of the grade R-70.
- Complies with the permissible tensile load of the TherMax II Cone.
- Intermediate values of the shear load may be linearly interpolated in dependence of "e", if nothing else is mentioned in the approval.
- In solid bricks Mz and solid sand-lime bricks KS the TherMax II 12 (standard version) can bridge non-load bearing layers up to 190 mm (140 mm in aerated concrete) and the TherMax II 16 can bridge them up to 300 mm (280 mm in aerated concrete) - but in solid brick Mz and aerated concrete the above load values have to be reduced. In concrete the TherMax II 12 (standard version) can bridge non-loadbearing layers up to 170 mm and the TherMax II 16 can bridge them up to 330 mm. Larger usable lengths up to 300 mm are possible, if longer anchor rods are used and again in solid bricks Mz if the anchorage depth (compared to above values) gets reduced where required - see approval.
- Minimum spacing with simultaneous reduction of the permissible load for each TherMax II.
- Fully screwed in (L1 (SS) = L2 (FS) = 0 mm)
- It is possible to bridge non-load-bearing layers (e.g. plaster). The minimum anchoring depth $h_{ef,min}$ is 110 mm. If the effective anchoring depth is reduced to $h_{ef,min} < 110$ mm, the values of the next shortest injection anchor sleeve of the same diameter must be used. The smaller characteristic value is decisive.

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