fischer fixing compass
Insulated walls.

360°
fischer

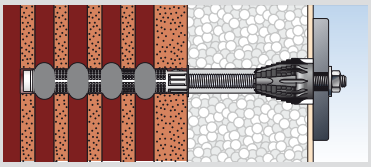
fischer
innovative solutions

Secure hold at insulated walls through our fixing specialists.

Stand-off installation system Thermax 12 and 16

The effective solution for the stand-off installation of heavy loads free of thermal bridges.

Maximum tensile load in concrete **3.4 kN (340 kg)**



fischer Thermax 12 and 16 – secure stand-off installation in External Thermal Insulation Composite Systems (ETICS)

- Higher loads can be achieved through combination of composite anchor technology with Thermax 12 and 16
- Universal use with approval – for cracked concrete, full and perforated brick works
- Suitable for all insulating materials or non-supporting layers of 60 - 295 mm
- Installation without special tools. The self cutting glass fiber reinforced anti-cold cone mills during installation through the plaster in the insulation
- Minimizes thermal losses through thermal separation
- Continuously adjustable for uneven substrates
- Outside parts made of stainless steel A4. The internal anchor rod may be made of zinc-plated steel and can be cut to the required dimension.
- Mounted part and anti-cold cone can be dismantled - dismantling and closing of the ETICS installation is possible
- Fully resilient after the mortar has hardened – *HIGH SPEED* mortar already after 30 minutes

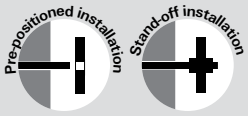
Designs

System can be used with:

High performance mortar FIS V 360 S
Universal mortar for anchoring in all substrates.

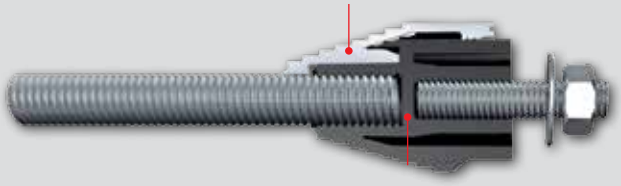
Injection anchor sleeve FIS H K
The optimal grid structure reduces the mortar use.

Installation type



The thermal loss is minimized and thermal bridges are prevented by the thermal separation of the threaded rod.

Cutting blade for the simplified installation in case of especially resilient, thick plaster layers



The **anti-cold cone** interrupts the thermal bridge and minimizes the thermal loss

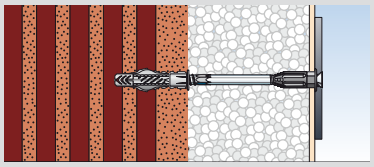
Stand-off installation Thermax 8 and 10

The effective solution for the stand-off installation of medium loads free of thermal bridges.

Maximum tensile load in concrete 1.0 kN (100 kg)

fischer Thermax 8 and 10 – the thermal separation module for the anchoring in External Thermal Insulation Composite Systems (ETICS)

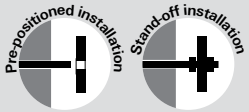
- Medium loads through strutting of the anchor against the bore hole wall
- Universal use - for concrete, full and perforated brick works as well as aircrete. Can be used without anchor directly in wood
- Suitable for all insulating materials or non-supporting layers of 60 - 240 mm
- The self cutting cone mills during installation through the plaster in the insulation. No additional special tool is required.
- Minimizes thermal losses through thermal separation
- Can be completely dismantled
- Immediately resilient after installation



Designs

Thermax 8 and 10 for the use with chipboard screws 4.5 - 6.0 mm, self-tapping screws 6.3 mm and metric screws M6/M8/M10.

Installation type



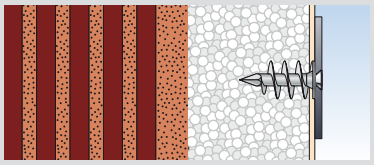
Insulation fixing FID 50 and 90

For the anchoring of light loads.

Maximum tensile load in insulating material 0.14 kN (14 kg)

fischer insulation fixing FID 50 and 90 – Fixing directly in the External Thermal Insulation Composite Systems (ETICS)

- Good load values due to deep cutting of the threads into the insulating material
- Easy and fast manual installation – the FID will be installed without pre-drilling directly through thin plaster levels in the insulating material. The plaster must be drilled for thicker plaster layers.
- Suitable for insulating materials such as polystyrene, polyurethane, perimeter insulation and wood fiber
- No thermal bridges – anchor does not penetrate the insulation
- Can be dismantled easily and completely
- Immediately resilient after installation



Designs

FID 50 for the use of chipboard screws 4.5-5.0 mm.

FID 90 for the use of chipboard screws 6.0 mm.

Installation type

The appropriate fixing for each application.

Item	fischer Thermax		fischer Thermax		fischer insulation fixing	
	12	16	8	10	FID 50[1]	FID 90[1]
Figure						
Maximum possible tensile load in concrete or insulating material	3.4 kN		1.0 kN		0.08 kN	0.14 kN
Max. transverse load (cone at Thermax) (acc. to insulating material thickness)						
60 mm	0.88 kN	1.51 kN	0.15 kN	0.20 kN	PS 15 = 0.05 kN PS 20 = 0.08 kN	PS 15 = 0.09 kN PS 20 = 0.14 kN
100 mm	0.57 kN	0.98 kN				
140 mm	0.41 kN	0.71 kN				
200 mm	0.29 kN	0.51 kN				
Approval	Yes	Yes	No	No	No	No
Operating principle	Adhesive bond	Adhesive bond	Fiction locking	Fiction locking	Form locking	Form locking
Possible insulating material types	All	All	All	All	Polystyrene, polyurethane, Perimeter insulation and wood fiber[2]	Polystyrene, polyurethane, Perimeter insulation and wood fiber[2]
Possible insulating materials thicknesses min. - max.	60 - 300 mm, up to 400 mm in case of tensile load only		45 -180 mm	45 - 240 mm	≥ 50 mm	≥ 90 mm
Material threaded bar	Zinc-plated - alternatively stainless steel A4	Zinc-plated - alternatively stainless steel A4	Only zinc-plated	Only zinc-plated		
Anchoring in	Brick work and concrete	Brick work and concrete	Brick work and concrete	Brick work and concrete	Insulating material	Insulating material
Connection thread	M12	M12	M6[3], M8, M10	M6[3], M8, M10	Chipboard screw 4,5 - 5,0 mm	Chipboard screw 6.0 mm
Adjustability	Yes	Yes	Yes	Yes	No	No
Min. embedment depth in:						
Concrete	≥ 70 mm	≥ 80 mm	60 mm	70 mm	50 mm[1]	90 mm[1]
Solid brick	≥ 50 mm	≥ 50 mm	60 mm	70 mm	50 mm[1]	90 mm[1]
Perforated brick	130 mm	200 mm	60 mm	70 mm	50 mm[1]	90 mm[1]

Special notes

Resilience	Adherence to curing time required	Immediately resilient	Immediately resilient
Installation	Demanding installation without special tools, Accessories required	Easy installation	Easy and fast installation
Dismantling	Surface-flush dismantling	Yes	Yes
Sealing of the ETICS	Very good with fischer all-round adhesive gluing and sealing KD	Very good with fischer all-round adhesive gluing and sealing KD	Very good under the anchor head with fischer all-round adhesive gluing and sealing KD

Application examples

	- Marquees - Awnings - Outside chimneys (stainless steel) - Satellite disk - Beam fastenings - Air conditioners - French balcony balustrades - Hand rails - Consoles	- Mail boxes - Down pipes - Exterior lamps - Motion detectors - Signs - House numbers - Trellis	- Mail boxes - Exterior lamps - Motion detectors - Signs - House numbers

[1] The FID will be anchored in the insulating material.
[2] Pre-drill core diameter (7 mm)
[3] When using the SX 5 anchor, self-tapping screws (6.3 mm), chipboard screws (6.0 mm) or chipboard screws 4.5 - 5.5 mm can be used for the connection thread M6 instead of metric screws.

Loads

Stand-off installation Thermax 12 and 16

Highest permissible loads[1) 6)] for one Thermax in concrete and solid brick masonry[8)] for fixing in groups[2)]. For the design the complete approval Z-21.8-1837 has to be considered.

					Concrete + Solid brick masonry								
Type	**Compressive brick strength**	**Brick type, naming acc. DIN[7)]**	**Effective anchorage depth**	**Installation torque**	**Permissible tension load**	**Permissible shear load for t_{fix} = 100 mm[5)]**	**Permissible shear load for t_{fix} = 120 mm[5)]**	**Permissible shear load for t_{fix} = 140 mm[5)]**	**Permissible shear load for t_{fix} = 160 mm[5)]**	**Permissible shear load for t_{fix} = 180 mm[5)]**	**Permissible shear load for t_{fix} = 200 mm[5)]**	**Min. spacing[3)]**	**Min. spacing[3)]**
	f_b	[-]	h_{ef}	T_{inst}[9)]	N_{perm}[3)]	V_{perm}[3)]	V_{perm}[3)]	V_{perm}[3)]	V_{perm}[3)]	V_{perm}[3)]	V_{perm}[3)]	s_{min} (a_{min})	c_{min} (a_r)
	[N/mm²]	[-]	[mm]	[Nm]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[mm]	[mm]
Non-cracked concrete													
Thermax 12	25	C20/25	95	20,0	3,40[4)]	0,49	0,31	0,21	0,16	0,11	0,08	55	55
Thermax 16	25	C20/25	125	20,0	3,40[4)]	0,85	0,62	0,45	0,34	0,26	0,21	65	65
Solid brick Mz													
Thermax 12	12	Mz	75	20,0	1,70	0,49	0,31	0,21	0,16	0,11	0,08	50	60
Thermax 16	12	Mz	75	20,0	1,70	0,85	0,62	0,45	0,34	0,26	0,21	50	60
Solid sand-lime brick and solid block KS													
Thermax 12	12	KS	75	20,0	1,70	0,49	0,31	0,21	0,16	0,11	0,08	50	60
Thermax 16	12	KS	75	20,0	1,70	0,85	0,62	0,45	0,34	0,26	0,21	50	60

[1)] Required safety factors are considered. [2)] For single fixation see approval. [3)] For combinations of tensile loads, shear loads, bending moments as well as reduced edge distances or spacings (anchor groups) see approval. [4)] Corresponding to the permissible tension load of the Thermax cone. [5)] 1 mm displacement under short term applied load (e.g. wind load). [6)] The given loads are valid for fixations in dry and humid concrete for temperatures in the substrate up to +50°C (resp. short term up to 80°C) and drillhole cleaning according approval. [7)] For further conditions see approval. [8)] Masonry with satisfactory surcharge and no edge influence. [9)] Fixing screw M12.

Highest permissible loads[1) 6)] for one Thermax in perforated brick masonry[8)] for fixing in groups[2)]. For the design the complete approval Z-21.8-1837 has to be considered.

					Perforated brick masonry								
Type	**Compressive brick strength**	**Brick type, naming acc. DIN[7)]**	**Effective anchorage depth**	**Installation torque**	**Permissible tension load**	**Permissible shear load for t_{fix} = 100 mm[5)]**	**Permissible shear load for t_{fix} = 120 mm[5)]**	**Permissible shear load for t_{fix} = 140 mm[5)]**	**Permissible shear load for t_{fix} = 160 mm[5)]**	**Permissible shear load for t_{fix} = 180 mm[5)]**	**Permissible shear load for t_{fix} = 200 mm[5)]**	**Min. spacing[3)]**	**Min. spacing[3)]**
	f_b	[-]	$h_{ef,min}$[10)]	T_{inst}[9)]	N_{perm}[3) 4)]	V_{perm}[3) 4)]	V_{perm}[3) 4)]	V_{perm}[3) 4)]	V_{perm}[3) 4)]	V_{perm}[3) 4)]	V_{perm}[3) 4)]	s_{min} (a_{min})	c_{min} (a_r)
	[N/mm²]	[-]	[mm]	[Nm]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[mm]	[mm]
Vertically perforated brick Hlz													
Thermax 12	4	HLz	85	20,0	0,60	0,49	0,31	0,21	0,16	0,11	0,08	50	50
Thermax 16	4	HLz	85	20,0	0,60	0,60	0,60	0,45	0,34	0,26	0,21	50	50
Thermax 12	6	HLz	85	20,0	0,80	0,49	0,31	0,21	0,16	0,11	0,08	50	50
Thermax 16	6	HLz	85	20,0	0,80	0,80	0,62	0,45	0,34	0,26	0,21	50	50
Thermax 12	12	HLz	85	20,0	1,00	0,49	0,31	0,21	0,16	0,11	0,08	50	50
Thermax 16	12	HLz	85	20,0	1,00	0,85	0,62	0,45	0,34	0,26	0,21	50	50
Perforated sand-lime brick KSL													
Thermax 12	4	KSL	85	20,0	0,60	0,49	0,31	0,21	0,16	0,11	0,08	50	50
Thermax 16	4	KSL	85	20,0	0,60	0,60	0,60	0,45	0,34	0,26	0,21	50	50
Thermax 12	6	KSL	85	20,0	0,80	0,49	0,31	0,21	0,16	0,11	0,08	50	50
Thermax 16	6	KSL	85	20,0	0,80	0,80	0,62	0,45	0,34	0,26	0,21	50	50
Thermax 12	12	KSL	85	20,0	1,40	0,49	0,31	0,21	0,16	0,11	0,08	50	50
Thermax 16	12	KSL	85	20,0	1,40	0,85	0,62	0,45	0,34	0,26	0,21	50	50
Hollow block of lightweight aggregate concrete Hbl													
Thermax 12	2	Hbl	85	20,0	0,50	0,49	0,31	0,21	0,16	0,11	0,08	50	200
Thermax 16	2	Hbl	85	20,0	0,50	0,50	0,50	0,45	0,34	0,26	0,21	50	200
Thermax 12	4	Hbl	85	20,0	0,80	0,49	0,31	0,21	0,16	0,11	0,08	50	200
Thermax 16	4	Hbl	85	20,0	0,80	0,80	0,62	0,45	0,34	0,26	0,21	50	200
Hollow block of normal concrete Hbn													
Thermax 12	4	Hbn	85	20,0	0,80	0,49	0,31	0,21	0,16	0,11	0,08	50	200
Thermax 16	4	Hbn	85	20,0	0,80	0,80	0,62	0,45	0,34	0,26	0,21	50	200

[1)] Required safety factors are considered. [2)] For single fixation see approval. [3)] For combinations of tensile loads, shear loads, bending moments as well as reduced edge distances or spacings (anchor groups) see approval. [4)] Values are valid for rotary drilling (without hammer action). KSL must have a thickness of the outer web of min. 30 mm (old bricks). [5)] 1 mm displacement under short term applied load (e.g. wind load). [6)] The given loads are valid for fixations in dry and humid concrete for temperatures in the substrate up to +50°C (resp. short term up to 80°C) and drillhole cleaning according approval. [7)] For further conditions see approval. [8)] Masonry with satisfactory surcharge and no edge influence. [9)] Fixing screw M12. [10)] The fixed anchorage depth is corresponding with the relevant anchor sleeves FIS HK (see technical data).

Loads Thermax 8 and 10

Highest recommended loads for a single anchor.

Type	**Anchor depth h_{ef}**	**Concrete[1)2)]**	**Solid bricks[1)2)]**	**Perforated sand-lime brick[1)2)]**	**Vertically perforated brick[1)2)]**	**Aerated concrete[1)2)]**
UX10 / Thermax 8	60 mm	1.00	0.50	0.60	0.20	0.40
UX12 / Thermax 10	70 mm	1.00	0.70	0.80	0.30	0.60

[1)] 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. [2)] The given recommended tensile loads apply for fastenings with metric screws. When using a SX 5-plug chipboard screws with diameter 4,5 - 5,5 mm they have to be reduced to 0,1 kN.

Highest recommended shear load for a single anchor in kN.

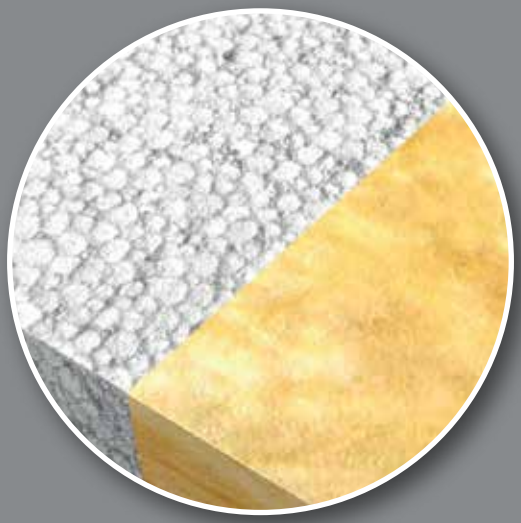
Type	**Recommended Shear load V rec. external thermal insulation composite system ≤ 180 mm**
UX10 / Thermax 8	0.15
UX12 / Thermax 10	0.20

Loads FID 50 and 90

Highest recommended loads for a single anchor.

Type	**Polystyrene PS 15**	**Polystyrene PS 20**	**Screw diameter**
FID 50	0.05	0.08	4.5 - 5.0 mm
FID 90	0.09	0.14	6 mm

What are insulated walls?



The term "insulated walls" covers walls made of brickwork, concrete and wood, on to which an insulation, e.g. made of polystyrene, mineral wool, rock wool or composite board, etc., was attached directly.
The most common form of insulated walls is the External Thermal Insulation Composite Systems (ETICS), which is used in existing buildings for restoration as well as for new buildings. The design for ETICS, and for insulated concrete ceilings (frontal or from below) is different with respect to the thickness of the thermal insulation, type of insulation and the design of the plastering. In addition, it must be noted for insulated walls that most of the insulating materials used cannot absorb punctiform pressure forces.
Depending on the required load and the type of the insulating material, special anchors must be used for the optimal anchoring in insulated walls, e.g. FID, Thermax 8 and 10 or for approval relevant fixings, Thermax 12 and 16.

Our 360° service for you.

As a reliable partner, we are available at any time for your individual requirements with words and deeds.

- Our product spectrum includes chemical systems, steel anchors as well as plastic screw anchors.
- Competence and innovation through in house research and development,
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