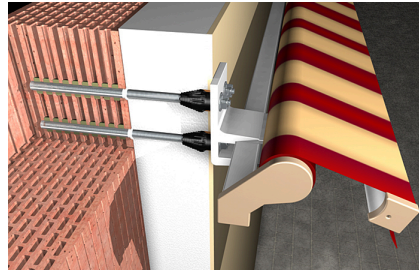
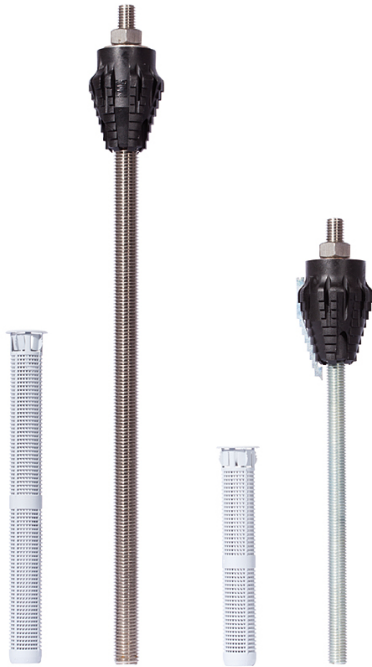


The approved stand-off installation with thermal barrier in external thermal insulation composite systems (ETICS)



VERSIONS

- zinc-plated steel
- stainless steel

BUILDING MATERIALS

Approved for:

- Concrete, cracked and non-cracked
- Vertically perforated brick
- Hollow block made from lightweight concrete
- Perforated sand-lime brick
- Solid sand-lime brick
- Solid brick

Also suitable for:

- Aerated concrete

APPROVALS



ADVANTAGES

- When combined with the injection mortars FIS V and FIS EM, the stand-off installation is approved for high loads in a range of materials. This allows for a secure fixing.
- Usage lengths of 60 to 295 mm can be covered with just one Thermax.
- The plastic cone creates a thermal barrier between the fixture and the inner fixture, 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, fast and adjustable installation without the need for any special tools.

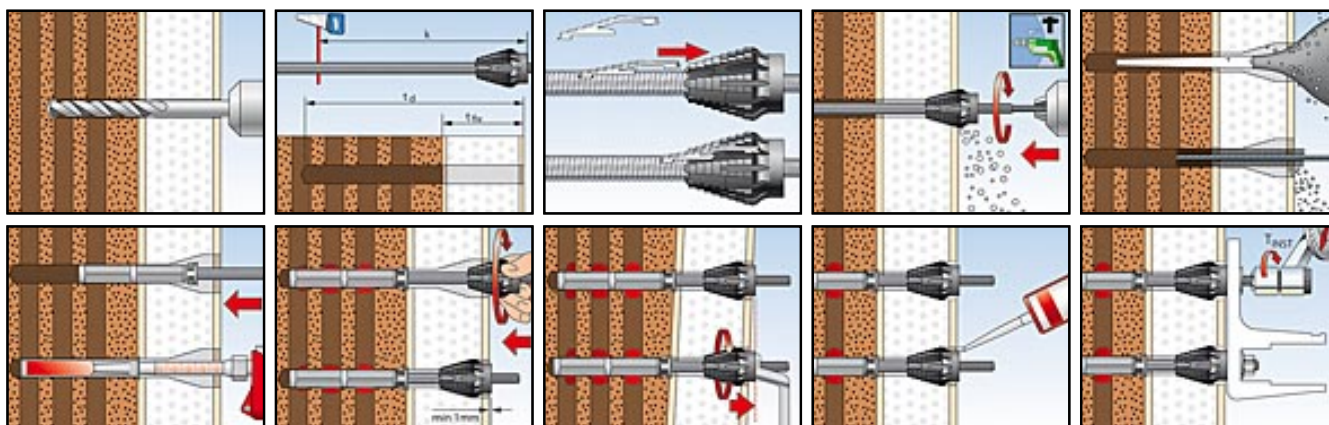
APPLICATIONS

For the thermally separated fixing of:

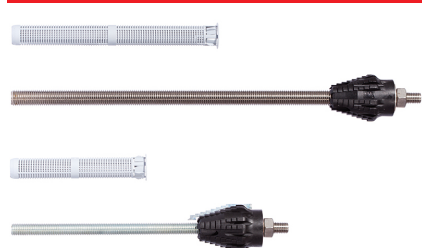
- Awnings
- Canopies
- French balcony railings
- Brackets
- Air conditioning units
- Satellite dishes

FUNCTIONING

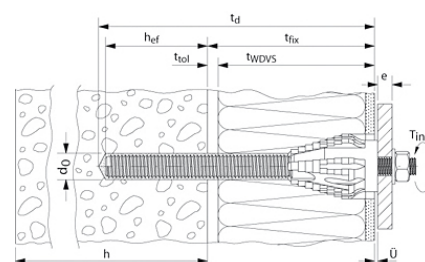
- The Thermax 12 and 16 systems are suitable for pre-positioned installation.
- The self-tapping, glass-fibre-reinforced cone cuts its own way through the plaster into the insulation during installation.
- The anti-cold cone uses a thermal barrier to minimise heat losses.
- In the case of resistant plaster (e.g. thick cement plaster), it is recommended that the Thermax cutting blade included is used for grinding out the plaster.
- The sealing of the annular gap with the adhesive and sealant KD seals the façade at plaster level.



TECHNICAL DATA



Stand-off installation Thermax 12 / 16



galvanized

Article name	Art.-No.		Contents
Thermax 12/110 M12	051291	•	20 M12 threaded rods, 20 anti-cold cones, 20 M12-A4 setscrews, 20 A4 washers, 20 A4 nuts, 20 perforated sleeves 20 x 130, 5 bit, 5 cutting blades, 5 user manuals
Thermax 12/110 M12 B	051290	•	2 M12 threaded rods, 2 anti-cold cones, 2 M12-A4 setscrews, 2 A4 washers, 2 A4 nuts, 2 perforated sleeves 20 x 130, 1 bit, 1 cutting blade, 1 user manual
Thermax 16/170 M12	051293	•	20 M16 threaded rods, 20 anti-cold cones, 20 M12-A4 setscrews, 20 A4 washers, 20 A4 nuts, 20 perforated sleeves 20 x 200, 5 bit, 5 cutting blades, 5 applicator tip extension hoses, 5 user manuals
Thermax 16/170 M12 B	051292	•	2 M16 threaded rods, 2 anti-cold cones, 2 M12-A4 setscrews, 2 A4 washers, 2 A4 nuts, 2 perforated sleeves 20 x 200, 1 bit, 1 cutting blade, 1 applicator tip extension hose, 1 user manual

stainless steel A4 (1.4571)

Article name	Art.-No.		Contents
Thermax 12/110 M12 A4	051537	•	10 M12-A4 threaded rods, 10 anti-cold cones, 10 M12-A4 setscrews, 10 A4 washers, 10 A4 nuts, 10 perforated sleeves 20 x 130, 3 bit, 3 cutting blades, 3 user manual
Thermax 16/170 M12 A4	051543	•	10 M16-A4 threaded rods, 10 anti-cold cones, 10 M12-A4 setscrews, 10 A4 washers, 10 A4 nuts, 10 perforated sleeves 20 x 200, 3 bit, 3 cutting blades, 3 applicator tip extension hoses, 3 user manual

LOADS

Stand-off installation Thermax 12 and 16

Highest permissible loads^{1) 6)} for one Thermax in perforated brick masonry⁸⁾ for fixing in groups²⁾.
For the design the complete approval Z-2 1.8-1837 has to be considered.

Type	Compressive brick strength f_b [N/mm ²]	Brick type, naming acc. DIN ⁷⁾ [-]	Effective anchorage depth $h_{ef,min}$ ¹⁰⁾ [mm]	Installation torque T_{inst} ⁹⁾ [Nm]	Perforated brick masonry								Min. spacing ³⁾ s_{min} (a _{min}) [mm]	Min. spacing ³⁾ c_{min} (a _r) [mm]
					Permissible tension load N_{perm} ^{3) 4)} [kN]	Permissible shear load for $t_{fix} = 100$ mm ⁵⁾ V_{perm} ^{3) 4)} [kN]	Permissible shear load for $t_{fix} = 120$ mm ⁵⁾ V_{perm} ^{3) 4)} [kN]	Permissible shear load for $t_{fix} = 140$ mm ⁵⁾ V_{perm} ^{3) 4)} [kN]	Permissible shear load for $t_{fix} = 160$ mm ⁵⁾ V_{perm} ^{3) 4)} [kN]	Permissible shear load for $t_{fix} = 180$ mm ⁵⁾ V_{perm} ^{3) 4)} [kN]	Permissible shear load for $t_{fix} = 200$ mm ⁵⁾ V_{perm} ^{3) 4)} [kN]			
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 H..K (see technical data).

LOADS

Stand-off installation Thermax 12 and 16

Highest permissible loads^{1) 6)} for one Thermax in concrete and solid brick masonry⁸⁾ for fixing in groups²⁾

For the design the complete approval Z-2 1.8-1837 has to be considered.

Type	Compressive brick strength f_b [N/mm ²]	Brick type, naming acc. DIN ⁷⁾ [-]	Effective anchorage depth h_{ef} [mm]	Installation torque T_{inst} ⁹⁾ [Nm]	Concrete + Solid brick masonry								Min. spacing ³⁾ s_{min} (a_{min}) [mm]	Min. spacing ³⁾ c_{min} (a_r) [mm]
					Permissible tension load N_{perm} ³⁾ [kN]	Permissible shear load for $t_{fix} = 100$ mm ⁵⁾ V_{perm} ³⁾ [kN]	Permissible shear load for $t_{fix} = 120$ mm ⁵⁾ V_{perm} ³⁾ [kN]	Permissible shear load for $t_{fix} = 140$ mm ⁵⁾ V_{perm} ³⁾ [kN]	Permissible shear load for $t_{fix} = 160$ mm ⁵⁾ V_{perm} ³⁾ [kN]	Permissible shear load for $t_{fix} = 180$ mm ⁵⁾ V_{perm} ³⁾ [kN]	Permissible shear load for $t_{fix} = 200$ mm ⁵⁾ V_{perm} ³⁾ [kN]			
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.