

Catalogue

ETICS Fixings / E.W.I



fischer  [®]
innovative solutions



Dear partners,

there is a continued need for facades with thermal insulation composite systems (ETICS) in new construction and renovation. They minimise the energy consumption of buildings, thus protecting the environment, reducing operating costs and meeting legislator requirements.

Our company offers a wide range of fixing solutions for the installation of insulation boards. The product range covers different construction materials, thicknesses as well as fire protection and system requirements. System providers and processors of ETICS can find an optimal, easy to use and safe solution for any application within the framework of the European Technical Assessment (ETA).

On the following pages you will find an overview of our extensive product range and our accompanying services. These include impact and screw anchors as well as special anchorages and further solutions for fixing insulating materials. We will also be presenting our spacer mounting systems for the safe and almost thermal-bridge-free installation of attachments to thermal insulation composite systems.

We hope you enjoy discovering our current range of fixing systems. If you require any further support, our experts will be happy to assist you via the technical support hotline or in the field.



Marc-Sven Mengis
Chief Executive Officer for the group of companies fischer



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The fischer brand

- The greatest expertise, safety and quality for plastic, steel and chemical fixing systems
- The world's leading provider of fixing systems and the market leader in most European countries
- A traditional brand with the highest name recognition within the industry
- An outstanding brand image. 92% of structural engineers and architects recommend fischer
- The greatest satisfaction. 95% of customers would recommend fischer

Expertise that you can build on

- Over 60 years' experience in fixing technology
- High-tech product solutions
- The highest quality standards
- Everything from one source thanks to the on-site research & development, special mechanical engineering, production and global logistics
- fischer ProcessSystem (fPS) for the continuous optimisation of our processes and flexible adjustment to meet customer requirements

Quality you can rely on

- The greatest load-bearing capacities
- Comprehensive, up-to-date international approvals, technical test marks and assessments
- Participation in the leading international, standard-setting committees in the field of fixing technology
- A certified quality management system in accordance with DIN EN ISO 9001
- fischer nylon quality guarantee
- Involvement in university and institutional research work



Innovative strength

- 9.28 patent registrations per 1,000 employees per annum (industry average 0.75)
- In-house research & development for the plastics, steel and chemistry sectors
- Rapid implementation of own research results and market trends
- Wide range of products with over 14,000 problem solutions in the chemical, steel and plastic sectors
- Standard products, project-specific solutions and special solutions to suit customer requirements





■ In order to maintain close contact with the market and system manufacturers, the E.W.I. (External Wall Insulation) department at fischer Deutschland Vertriebs GmbH is a member of the ETICS professional association. This ensures that we are able to develop new innovative products and can benefit from a constant exchange of expertise.

■ ETICS fixings are exclusively sold by ETICS licence holders.

Tailor-made services for you

- Active sales service in over 100 countries
- Cost-effective technical advice in line with directives provided by over 130 engineers worldwide
- Prototypes, extraction tests, individual calculations, comparisons and development of customised solutions, technical documentation and online services
- Free software tools, including the Fixperience design software suite, CAD-FIX 3D fixings database, etc.
- Practical training courses in the fischer Academy and across Germany in the Competence Centres

Sustainable business and sustainable products

- Numerous internal activities oriented to the environment
- Certified environmental management system in accordance with DIN EN ISO 14001
- Member of the German Sustainable Building Council (DGNB)
- Numerous products hold an EPD (Environmental Product Declaration) from the Institute for Construction and the Environment (Institut Bauen und Umwelt e.V., IBU) for ecological building rating
- fischer greenline – the world's first range of fixings that is based on over 50% of renewable raw materials and certified by DIN CERTCO / TÜV Rheinland



Institut Bauen und Umwelt e.V.



The free thermal bridging:	The high-performance fixing:	The versatile with the option to be screw set:
termoz PN 8	termoz CN 8	termoz CNplus 8



Length	110 - 230 mm	110 - 390 mm	110 - 390 mm
Building material classes	A, B, C, D, E	A, B, C, D, E	A, B, C, D, E
Expansion element	Plastic nail	Compound nail	Compound nail
Chi value (W/K)	0.000	0.000 ¹⁾	0.001 ²⁾

¹⁾ (110, 370 and 390 mm = 0.001)

²⁾ depends on the insulation situation

An overview of your benefits

- Quick to use
- No special tools necessary
- All fixings are supplied pre-mounted
- Optimised loads
- Short anchorage depths
- Top price-performance ratio
- Complete range
- Private label possible
- Almost thermal-bridge-free
- Additional plates available if required

The universal fixing:	The economic fixing:		The innovative fixing:
termoz 8 U	termoz CS 8	termoz CS8 DT 110V	termoz SV II Ecotwist



Length	125 - 405 mm	110 - 390 mm	130 - 390 mm	One length for all insulation thicknesses ¹⁾
Building material classes	A, B, C, E	A, B, C, D, E	A, B, C, D, E	A, B, C, D, E
Expansion element	Steel screw	Compound screw	Compound screw	Steel screw
Chi value (W/K)	0.002	0.001 - 0.002	0.001 - 0.002	0.000 ²⁾

¹⁾ (100 - 400 mm)

²⁾ (From 150 mm insulation thickness)

An overview of your benefits

- Secure anchorage
- High loads
- All fixings are supplied pre-mounted
- Recessed fixings included in the range
- Controlled setting
- Universal application
- Private label possible
- Innovative and complete range
- Additional plates available for termoz 8 U and CS 8

The free thermal bridging ETICS hammer set fixing with GRP nail



Polystyrene rigid foam boards



Setting the hammer set fixing on polystyrene rigid foam boards

BUILDING MATERIALS

- Building material classes A, B, C, D, E
- Concrete
- Building brick
- Solid sand-lime brick
- Hollow blocks made from lightweight concrete
- Vertically perforated brick
- Perforated sand-lime brick
- Lightweight aggregate concrete
- Aerated concrete

APPROVALS



ADVANTAGES

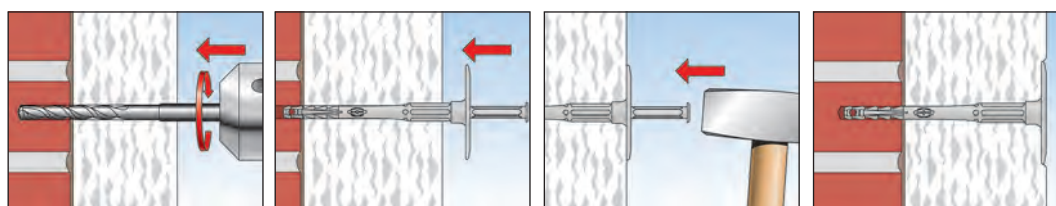
- To set with few hammer blows.
- The disc fits tight into the insulation thanks to its thickness of only 2.5 mm. Thus allows the application of low-cost, thin reinforcement layers.
- Optimised retention forces thanks to the glass fibre reinforced plastic nail (GRP).
- Small anchoring depth of 35 mm saves on drilling times.
- Thanks to the GRP nail, the fixing is free of thermal bridging with the Chi value 0.000 [W/K].
- The compression zone in the shank allows the disc to be drawn precisely into the insulation.
- Can be combined with the insulating discs DT 90, DT 110 and DT 140 for very soft insulating materials.
- For insulating material thicknesses up to 180 mm.

APPLICATIONS

- Attachment of ETICS insulating boards on concrete and masonry
- Flush-to-surface installation in ETICS insulating materials and mineral wool e.g. polystyrene

FUNCTIONING

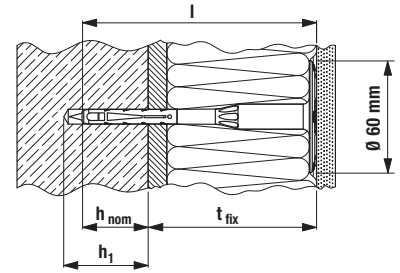
- The fixing is set in push-through installation.
- Simple, fast setting by driving the GRP nail in using a standard hammer.
- Non load bearing layers such as adhesive and old plaster are included in the maximum useful length.



TECHNICAL DATA



termoz PN 8



t_{fix} = thickness of insulation + glue + old render

Item	Art.-No.	Approval ETA	Drill hole diameter d_0 [mm]	Min. drill hole depth h_1 [mm]	Effect. anchorage depth h_{nom} [mm]	Anchor length l [mm]	Max. usable length t_{fix} [mm]	Disc Ø [mm]	Sales unit [pcs]
termoz PN 8/110	506325	■	8	45	35	108	70	60	100
termoz PN 8/130	506326	■	8	45	35	128	90	60	100
termoz PN 8/150	506327	■	8	45	35	148	110	60	100
termoz PN 8/170	506328	■	8	45	35	168	130	60	100
termoz PN 8/190	506329	■	8	45	35	188	150	60	100
termoz PN 8/210	506330	■	8	45	35	208	170	60	100
termoz PN 8/230	506331	■	8	45	35	228	190	60	100

for building material class D + E; $h_1 = 65$ mm, $h_{nom} = 55$ mm

LOADS

termoz PN 8³⁾

Highest permissible loads for a single anchor¹⁾⁴⁾ for multiple use for non-structural applications. For the design the complete assessment ETA-09/0171 has to be considered.

Type	Brick raw density ρ [kg/dm ³]	min. compressive brick strength f_b [N/mm ²]	min. embedment depth h_{nom} [mm]	min. member thickness h_{min} [mm]	Concrete and masonry		
					permissible tensile load ³⁾ N_{perm} [kN]	min. spacing ²⁾ s_{min} [mm]	min. edge distance ²⁾ c_{min} [mm]
Concrete							
PN 8	C12/15		35 ⁶⁾	100	0,17	100	100
	C16/20				0,17		
	C50/60				0,17		
Solid Clay bricks e.g. acc. to DIN 105-100:2012-01, EN 771-1:2011, Mz							
PN 8	$\geq 2,0$	12	35 ⁵⁾⁶⁾	100	0,20	100	100
Calcium silicate solid bricks, e.g. acc. to DIN V 106:2005-10, EN 771-2:2011, KS							
PN 8	$\geq 1,8$	12	35 ⁵⁾⁶⁾	100	0,20	100	100
Vertically perforated clay bricks e.g. acc. to DIN 105-100:2012-01, EN 771-1:2011, HLz							
PN 8	$\geq 1,0$	12	35 ⁵⁾⁷⁾	100	0,13	100	100
Hollow calcium silicate brick, acc. to DIN V 106:2005-10, EN 771-2:2011, KSL							
PN 8	$\geq 1,4$	12	35 ⁵⁾⁶⁾	100	0,13	100	100
Hollow brick light-weight concrete, e.g. acc. to DIN V 18153-100: 2005-10, EN 771-3:2011 Hbl							
PN 8	$\geq 1,2$	10	35 ⁵⁾	100	0,17	100	100
Lightweight Aggregate Concrete acc. to DIN EN 1520, LAC							
PN 8	$\geq 0,9$	6	55 ⁵⁾⁶⁾	100	0,13	100	100
Autoclaved aerated concrete blocks, e.g. AAC acc. to DIN V 4165-100:2005-10, EN 771-4							
PN 8	$\geq 0,5$	4	55 ⁵⁾⁷⁾	100	0,10	100	100
	$\geq 0,6$	6	55 ⁵⁾⁷⁾		0,13		

¹⁾ The partial safety factors for material resistance as regulated in the assessment as well as a partial safety factor for load actions of $\gamma_L = 1,5$ are considered.

²⁾ Minimum possible axial spacings resp. edge distances acc. assessment.

³⁾ Plastic anchor for fixing of external thermal insulation composite systems with rendering acc. ETAG 014. Only tensile wind loads are permitted.

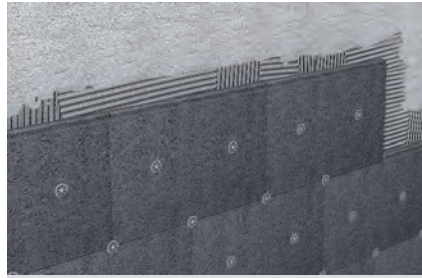
⁴⁾ The given loads are valid for installation and use of fixations in dry masonry for temperatures in the substrate up to +24 °C (resp. short term up to 40 °C).

⁵⁾ Restrictions concerning the manufacturer and the permissible hole patterns as well as the web thickness see assessment.

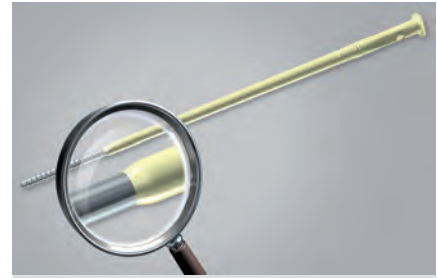
⁶⁾ Hammer drilling

⁷⁾ Rotary drilling

The high-performance ETICS hammer-set fixing with compound nail



Additional reinforcement of ETICS



Detail: innovative steel-plastic combination

BUILDING MATERIALS

- Building material classes A, B, C, D, E
- Concrete
- Full blocks made from concrete
- Building brick
- Solid sand-lime brick
- Hollow blocks made from lightweight concrete
- Vertically perforated brick
- Perforated sand-lime brick
- Lightweight aggregate concrete
- Aerated concrete

APPROVALS



ADVANTAGES

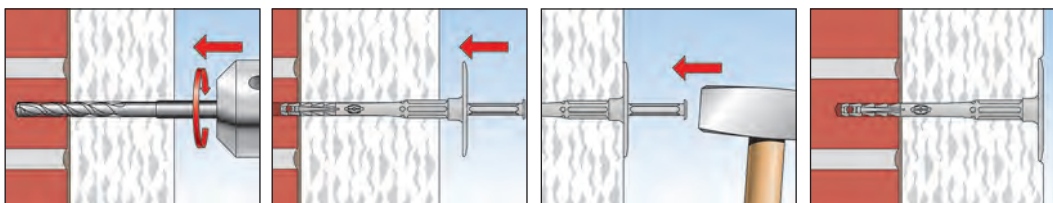
- To set with few hammer blows.
- The disc fits tight into the insulation thanks to its thickness of only 2.5 mm. Thus allows the application of low-cost, thin reinforcement layers.
- High retention forces thanks to the steel tip of the compound nail.
- Small anchoring depth of 35 mm saves on drilling times.
- The Termoz CN is virtually free of thermal bridging due to the compound nail.
- The compression zone in the shank allows the disc to be drawn in precisely.
- Can be combined with the insulating discs DT 90, DT 110 and DT 140 for very soft insulating materials.
- For insulating material thicknesses up to 340 mm.

APPLICATIONS

- Attachment of ETICS insulating boards on concrete and masonry
- Flush-to-surface installation in ETICS insulating materials and mineral wool e.g. polystyrene

FUNCTIONING

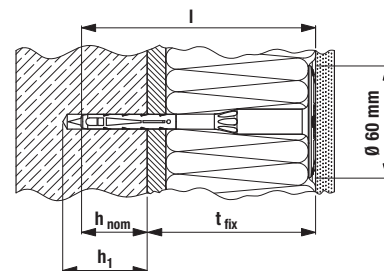
- The fixing is set in push-through installation.
- Simple, fast setting by driving the compound nail in using a standard hammer.
- Non load bearing layers such as adhesive and old plaster are included in the maximum useful length.



TECHNICAL DATA



termoz CN 8



t_{fix} = thickness of insulation + glue + old render

Item	Art.-No.	Approval ETA	Drill hole diameter d_0 [mm]	Min. drill hole depth h_1 [mm]	Effect. anchorage depth h_{nom} [mm]	Anchor length l [mm]	Max. usable length t_{fix} [mm]	Disc Ø [mm]	Sales unit [pcs]
termoz CN 8/110	507418	■	8	45	35	108	70	60	100
termoz CN 8/130	507419	■	8	45	35	128	90	60	100
termoz CN 8/150	507420	■	8	45	35	148	110	60	100
termoz CN 8/170	507421	■	8	45	35	168	130	60	100
termoz CN 8/190	507422	■	8	45	35	188	150	60	100
termoz CN 8/210	507423	■	8	45	35	208	170	60	100
termoz CN 8/230	507424	■	8	45	35	228	190	60	100
termoz CN 8/250	507425	■	8	45	35	248	210	60	100
termoz CN 8/270	507426	■	8	45	35	268	230	60	100
termoz CN 8/290	507427	■	8	45	35	288	250	60	100
termoz CN 8/310	507428	■	8	45	35	308	270	60	100
termoz CN 8/330	507429	■	8	45	35	328	290	60	100
termoz CN 8/350	507430	■	8	45	35	348	310	60	100
termoz CN 8/370	507431	■	8	45	35	368	330	60	100
termoz CN 8/390	507432	■	8	45	27	388	350	60	100

for building material class E: $h_1 = 65$ mm, $h_{nom} = 55$ mm

LOADS

termoz CN 8³⁾

Highest permissible loads for a single anchor¹⁾⁴⁾ for multiple use for non-structural applications.
For the design the complete assessment ETA-09/0394 has to be considered.

Type	Brick raw density ρ [kg/dm ³]	min. compressive brick strength f_b [N/mm ²]	min. embedment depth h_{nom} [mm]	Min. member thickness h_{min} [mm]	Concrete and masonry		
					permissible tensile load ³⁾ N_{perm} [kN]	min. spacing ²⁾ s_{min} [mm]	min. edge distance ²⁾ c_{min} [mm]
Concrete acc. EN 206:2013							
CN 8	\geq C12/15	35 ⁵⁾	100	100	0,30	100	100
	\geq C16/20			100	0,30	100	100
	C50/60			100	0,30	100	100
Calcium silicate solid bricks, e.g. acc. to DIN V 106:2005-10, EN 771-2:2011, KS							
CN 8	\geq 1,8	12	35 ⁵⁾⁶⁾	100	0,30	100	100
Solid Clay bricks e.g. acc. to DIN 105-100:2012-01, EN 771-1:2011, Mz							
CN 8	\geq 2,0	12	35 ⁵⁾⁶⁾	100	0,30	100	100
Solid concrete block, e.g. acc. to DIN V 18152-100:2005-10 EN 771-3:2011, Vbn							
CN 8	\geq 2	20	35 ⁵⁾⁶⁾	100	0,25	100	100
Hollow calcium silicate brick, acc. to DIN V 106:2005-10, EN 771-2:2011, KSL							
CN 8	\geq 1,4	12	35 ⁵⁾⁶⁾	100	0,17	100	100
	\geq 1,4	20	35 ⁵⁾⁶⁾	100	0,25	100	100
Vertically perforated clay bricks e.g. acc. to DIN 105-100:2012-01, EN 771-1:2011, HLz							
CN 8	\geq 1,0	12	35 ⁵⁾⁷⁾	100	0,20	100	100
Solid lightweight concrete block, e.g. acc. to DIN V 18152-100:2005-10 EN 771-3:2011 Vbl							
CN 8	\geq 1,4	8	35 ⁶⁾	100	0,20	100	100
Hollow brick light-weight concrete, e.g. acc. to DIN V 18153-100: 2005-10, EN 771-3:2011 Hbl							
CN 8	\geq 1,2	10	35 ⁶⁾	100	0,20	100	100
Lightweight Aggregate Concrete acc. to DIN EN 1520, LAC							
CN 8	\geq 0,8	4	35 ⁵⁾⁶⁾	100	0,13	100	100
	\geq 0,8	6	35 ⁵⁾⁶⁾	100	0,20	100	100
Autoclaved aerated concrete blocks, e.g. AAC acc. to DIN V 4165-100:2005-10, EN 771-4							
CN 8	\geq 0,4	4	55 ⁷⁾	100	0,10	100	100
	\geq 0,6	6	55 ⁷⁾	100	0,10	100	100

¹⁾ The partial safety factors for material resistance as regulated in the assessment as well as a partial safety factor for load actions of $\gamma_L = 1,5$ are considered.

²⁾ Minimum possible axial spacings resp. edge distances acc. assessment.

³⁾ Plastic anchor for fixing of external thermal insulation composite systems with rendering acc. ETAG 014. Only tensile wind loads are permitted.

⁴⁾ The given loads are valid for installation and use of fixations in dry masonry for temperatures in the substrate up to +24 °C (resp. short term up to 40 °C).

⁵⁾ Restrictions concerning the manufacturer and the permissible hole patterns as well as the web thickness see assessment.

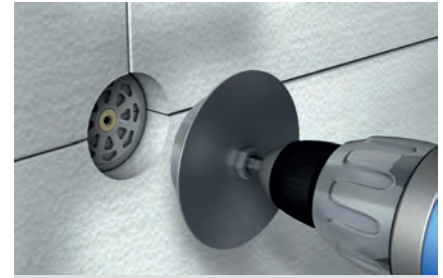
⁶⁾ Hammer drilling

⁷⁾ Rotary drilling

The versatile ETICS hammer set fixing with the option to be screw set



Flush hammer set installation



Countersunk screw installation

BUILDING MATERIALS

- Building material classes A, B, C, D, E
- Concrete
- Full blocks made from concrete
- Building brick
- Solid sand-lime brick
- Hollow blocks made from lightweight concrete
- Vertically perforated brick
- Perforated sand-lime brick
- Lightweight aggregate concrete
- Aerated concrete

APPROVALS



ADVANTAGES

- termoz CNplus is a hammer set anchor with the option to be screw set. The plug is suitable for all building material and insulation types. Through the flexible use the warehouses and ordering processes are reduced.
- With the fast and simple hammer set installation the plugs set too deep can be readjusted with the aid of the screwdriver. This saves working time and helps to avoid fixing marks.
- During the screw installation the termoz CNplus can be set countersunk or flush. For different set results only one plug is required.
- Moreover the screw installation enables an accurate setting due to an optimum application on the insulation surface. Also with soft insulation.
- The compound nail ensures a high energy efficiency with the countersunk screw installation, because there is nearly no heat transmission.

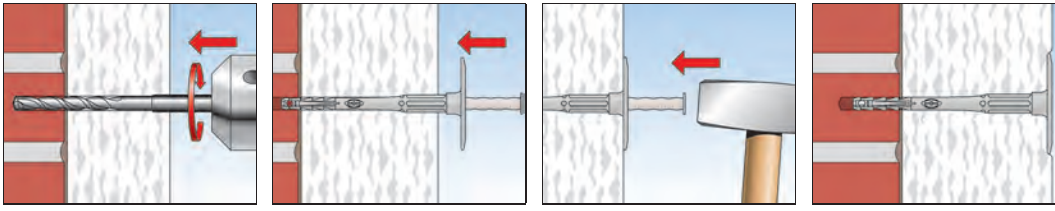
APPLICATIONS

- Attachment of ETICS insulating boards on concrete and masonry
- Flush installation in ETICS insulating boards, e.g. polystyrene and mineral wool
- Countersunk installation in ETICS insulating boards, e.g. polystyrene and mineral wool, incl. a closing cap for covering

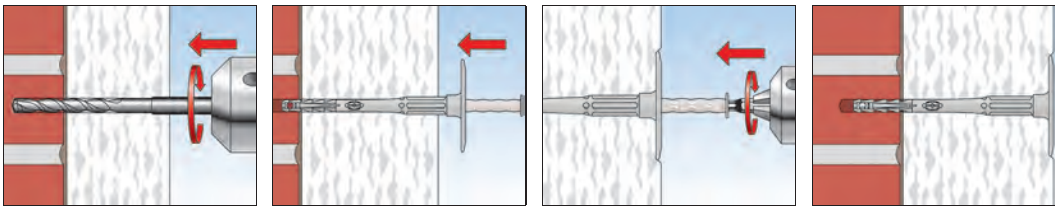
FUNCTIONING

- The plug is set in push-through installation.
- Simple, fast setting by driving the compound nail in using a standard hammer.
- The setting process with the screwdriver is performed flush with a standard Bit T 25.
- For countersunk installation the setting tool CNplus is required. The insulation disk is covered with a closing cap.
- Non-load bearing layers, such as adhesive and old plaster, are included in the maximum useful length.

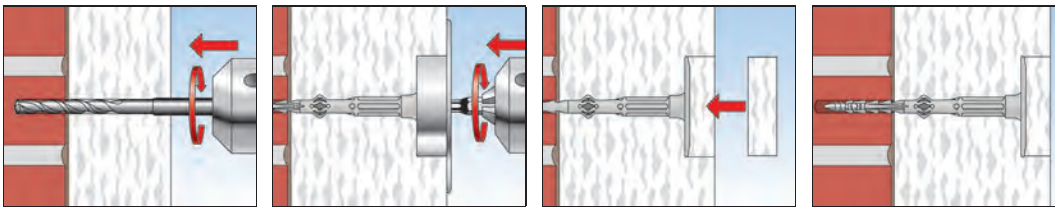
STANDARD: FLUSH HAMMERSET INSTALLATION



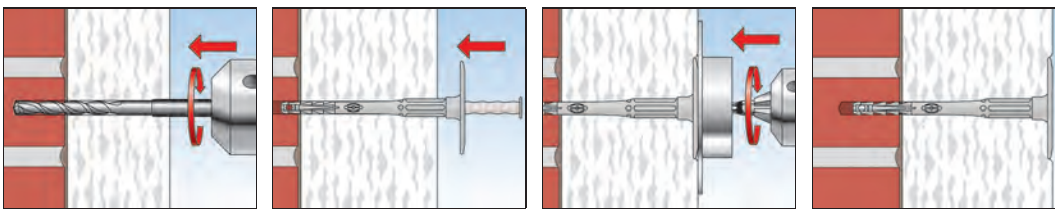
STANDARD: FLUSH SCREW INSTALLATION STANDARD BIT T25



STANDARD: COUNTERSUNK SCREW INSTALLATION WITH SETTING TOOL CS



ALTERNATIVE: FLUSH SCREW INSTALLATION WITH ROTATED SETTING TOOL CS



2

ACCESSORIES



Caps **MW D60**



Caps **PS D60 white**



Setting tool **CS**
(hexagonal-adaptor)



Setting tool **CS**
(SDS-adaptor)



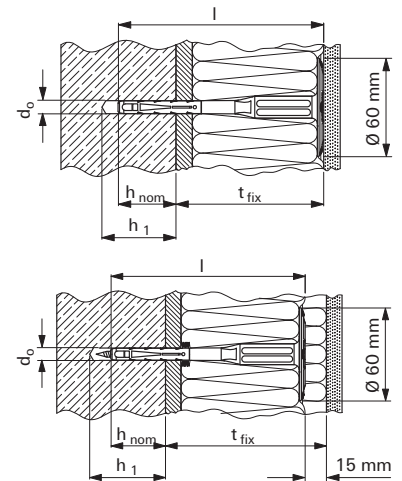
Bit **T25 CNplus 26 mm**

Item	Art.-No.	Contents	Match	Sales unit [pcs]
Caps MW D60	046172	–	–	100
Caps PS D60 white	046173	–	–	100
Caps PS D60 grey	544383	–	–	100
Setting tool CS (hexagonal-adaptor)	532618	including Bit T 30	–	1
Setting tool CS (SDS-adaptor)	532619	including Bit T 30	–	1
Bit T25 CNplus 26 mm	540251	–	Setting tool CNplus	1
DT 90	008889	–	–	100
DT 110	090745	–	–	100
DT 140	008690	–	–	100

TECHNICAL DATA



termoz **CNplus**



For building material classes A, B, C

Item	Art.-No.	Approval ETA	Drill diameter d_0 [mm]	Anchor length l [mm]	Effect. anchorage depth h_{nom} [mm]	Flush installation / only for building material classes A, B, C		Countersunk installation / only for building material classes A, B, C		Drive	Sales unit [pcs]
						Min. drill hole depth h_1 [mm]	Max. usable length t_{fix} [mm]	Min. drill hole depth h_1 [mm]	Max. usable length t_{fix} [mm]		
termoz CNplus 8/110	540376	■	8	108	35	45	70			T25	100
termoz CNplus 8/130	540377	■	8	128	35	45	90	60	90	T25	100
termoz CNplus 8/150	540378	■	8	148	35	45	110	60	110	T25	100
termoz CNplus 8/170	540379	■	8	168	35	45	130	60	130	T25	100
termoz CNplus 8/190	540380	■	8	188	35	45	150	60	150	T25	100
termoz CNplus 8/210	540381	■	8	208	35	45	170	60	170	T25	100
termoz CNplus 8/230	540382	■	8	228	35	45	190	60	190	T25	100
termoz CNplus 8/250	540383	■	8	248	35	45	210	60	210	T25	100
termoz CNplus 8/270	540384	■	8	268	35	45	230	60	230	T25	100
termoz CNplus 8/290	540385	■	8	288	35	45	250	60	250	T25	100
termoz CNplus 8/310	540386	■	8	308	35	45	270	60	270	T25	100
termoz CNplus 8/330	540387	■	8	328	35	45	290	60	290	T25	100
termoz CNplus 8/350	540388	■	8	348	35	45	310	60	310	T25	100
termoz CNplus 8/370	540389	■	8	368	35	45	330	60	330	T25	100
termoz CNplus 8/390	540390	■	8	388	35	45	350	60	350	T25	100

For countersunk installation Hexa or SDS setting tool CS Art.-No. 532618 or Art.-No. 532619 with Bit T25 Art.-No. 540251 must be used.

For building material classes D, E

Item	Art.-No.	Approval ETA	Drill diameter d_0 [mm]	Anchor length l [mm]	Effect. anchorage depth h_{nom} [mm]	Flush installation / only for building material classes D, E		Countersunk installation / only for building material classes D, E		Drive	Sales unit [pcs]
						Min. drill hole depth h_1 [mm]	Max. usable length t_{fix} [mm]	Min. drill hole depth h_1 [mm]	Max. usable length t_{fix} [mm]		
termoz CNplus 8/130	540377	■	8	128	55	65	70	80	70	T25	100
termoz CNplus 8/150	540378	■	8	148	55	65	90	80	90	T25	100
termoz CNplus 8/170	540379	■	8	168	55	65	110	80	110	T25	100
termoz CNplus 8/190	540380	■	8	188	55	65	130	80	130	T25	100
termoz CNplus 8/210	540381	■	8	208	55	65	150	80	150	T25	100
termoz CNplus 8/230	540382	■	8	228	55	65	170	80	170	T25	100
termoz CNplus 8/250	540383	■	8	248	55	65	190	80	190	T25	100
termoz CNplus 8/270	540384	■	8	268	55	65	210	80	210	T25	100
termoz CNplus 8/290	540385	■	8	288	55	65	230	80	230	T25	100
termoz CNplus 8/310	540386	■	8	308	55	65	250	80	250	T25	100
termoz CNplus 8/330	540387	■	8	328	55	65	270	80	270	T25	100
termoz CNplus 8/350	540388	■	8	348	55	65	290	80	290	T25	100
termoz CNplus 8/370	540389	■	8	368	55	65	310	80	310	T25	100
termoz CNplus 8/390	540390	■	8	388	55	65	330	80	330	T25	100

For countersunk installation Hexa or SDS setting tool CS Art.-No. 532618 or Art.-No. 532619 with Bit T25 Art.-No. 540251 must be used.

LASTEN

termoz CNplus 8³⁾

Highest permissible loads for a single anchor^{1) 4)} for fixing of external thermal insulation composite systems with rendering. For the design the complete assessment ETA 09/0394 has to be considered.

Base material	Brick raw density ρ [kg/dm ³]	min. compressive brick strength f_b [N/mm ²]	min. embedment depth h_{nom} [mm]	min. member thickness h_{min} [mm]	Concrete and masonry ⁵⁾		
					permissible tensile load ³⁾ N_{perm} [kN]	min. spacing ²⁾ s_{min} [mm]	min. edge distance ²⁾ c_{min} [mm]
Concrete acc. EN 206-1:2000							
CNplus 8	C12/15 - C50/60		35 ⁶⁾	100	0,30	100	100
Weather resistant concrete shell							
CNplus 8	≥ C20/25		35 ⁶⁾	42	0,30	100	100
Calcium silicate solid bricks KS acc. EN 771-2:2011							
CNplus 8	≥ 1,8	20	35 ⁶⁾	100	0,30	100	100
Solid clay bricks Mz acc. EN 771-1:2011							
CNplus 8	≥ 1,8	20	35 ⁶⁾	100	0,30	100	100
Solid concrete blocks Vbn acc. EN 771-3:2011							
CNplus 8	≥ 2	20	35 ⁶⁾	100	0,30	100	100
Hollow calcium silicate bricks KSL acc. EN 771-2:2011							
CNplus 8	≥ 1,4	16	35 ⁶⁾	100	0,17	100	100
Vertically perforated clay bricks HLz acc. EN 771-1:2011							
CNplus 8	≥ 1	12	35 ⁷⁾	100	0,17	100	100
	≥ 1,6	48	35 ⁷⁾	100	0,25	100	100
Lightweight concrete blocks Vbl acc. EN 771-3:2011							
CNplus 8	≥ 1,6	10	35 ⁶⁾	100	0,25	100	100
Lightweight concrete hollow blocks Hbl acc. EN 771-3:2011							
CNplus 8	≥ 1,2	10	35 ⁶⁾	100	0,20	100	100
Lightweight aggregate concrete LAC acc. EN 1520:2011, EN 771-3:2011							
CNplus 8	≥ 0,9	6	55 ⁶⁾	100	0,13	100	100
Autoclaved aerated concrete blocks AAC acc. EN 771-4:2011							
CNplus 8	≥ 0,4	4	55 ⁷⁾	100	0,10	100	100

¹⁾ The partial safety factors for material resistance as regulated in the assessment as well as a partial safety factor for load actions of $\gamma_F = 1,5$ are considered.

²⁾ Minimum possible axial spacings resp. edge distances acc. assessment.

³⁾ Plastic anchor for fixing of external thermal insulation composite systems with rendering acc. ETAG 014. Only tensile wind loads are permitted.

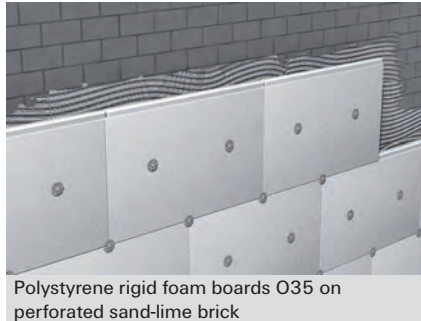
⁴⁾ The given loads are valid for installation and use of fixations in dry masonry for temperatures in the substrate up to +24 °C (resp. short term up to 40 °C).

⁵⁾ Restrictions concerning the manufacturer and the permissible hole patterns as well as the web thickness see assessment.

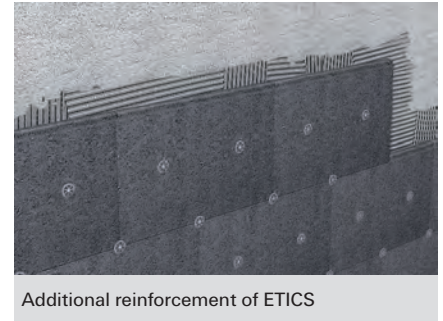
⁶⁾ Hammer drilling

⁷⁾ Rotary drilling

The universal ETICS screw fixing with Delta-Seal coated steel screw



Polystyrene rigid foam boards O35 on perforated sand-lime brick



Additional reinforcement of ETICS

BUILDING MATERIALS

- Building material classes A, B, C, E
- Concrete
- Building brick
- Solid sand-lime brick
- Hollow blocks made from lightweight concrete
- Vertically perforated brick
- Perforated sand-lime brick
- Solid blocks made from lightweight concrete
- Aerated concrete

APPROVALS



ADVANTAGES

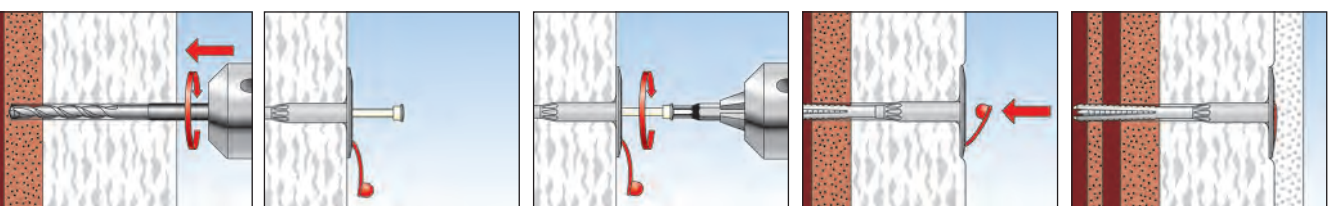
- High retention forces thanks to the screwing process and embedment depth of 70 mm.
- High level of corrosion protection of the screw thanks to Delta-Seal coating.
- An air gap is produced above the screw head due to the sealing ball. This reduces heat transmission losses.
- The flexible head compensates for any heat-related tension and prevents damage.
- Can be combined with the insulating discs DT 90, DT 110 and DT 140 for very soft insulating materials.
- For insulating material thicknesses up to 320 mm.

APPLICATIONS

- Attachment of ETICS insulating boards on concrete and masonry
- Flush-to-surface installation in ETICS insulating materials and mineral wool e.g. polystyrene

FUNCTIONING

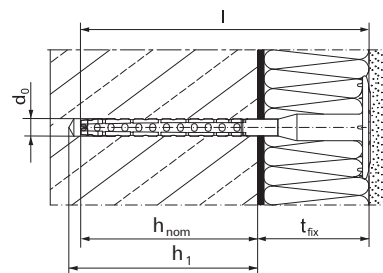
- The fixing is set in push-through installation.
- The setting tool Termoz SWZ TX 30 is required for installation.
- Simple, fast setting by screwing the Delta-Seal coated screw in using a standard screwdriver.
- Non-load-bearing layers such as adhesive and old plaster are included in the maximum useful length.



TECHNICAL DATA



termoz **8U** - Pre-assembled with screw T30



t_{fix} = thickness of insulation + glue + old render

Item	Art.-No.	Approval ETA	Drill hole diameter d_0 [mm]	Min. drill hole depth h_1 [mm]	Effect. anchorage depth h_{nom} [mm]	Anchor length l [mm]	Max. usable length t_{fix} [mm]	Disc \varnothing [mm]	Drive	Sales unit [pcs]
termoz 8U/125	003826	■	8	85	70	125	55	60	T30	100
termoz 8U/145	003827	■	8	85	70	145	75	60	T30	100
termoz 8U/165	003828	■	8	85	70	165	95	60	T30	100
termoz 8U/185	003829	■	8	85	70	185	115	60	T30	100
termoz 8U/205	003830	■	8	85	70	205	135	60	T30	100
termoz 8U/225	003831	■	8	85	70	225	155	60	T30	100
termoz 8U/245	003832	■	8	85	70	245	175	60	T30	100
termoz 8U/265	003833	■	8	85	70	265	195	60	T30	100
termoz 8U/285	003834	■	8	85	70	285	215	60	T30	100
termoz 8U/305	003835	■	8	85	70	305	235	60	T30	100
termoz 8U/325	501447	■	8	85	70	325	255	60	T30	100
termoz 8U/345	501450	■	8	85	70	345	275	60	T30	100
termoz 8U/365	501451	■	8	85	70	365	295	60	T30	100
termoz 8U/385	501452	■	8	85	70	385	315	60	T30	100
termoz 8U/405	501453	■	8	85	70	405	335	60	T30	100

ACCESSORIES

3



termoz - setting tool

Item	Art.-No.	Seat	Matching anchor type	Sales unit [pcs]
SWZ-TX30	008698	T30	termoz 8 U	1

LOADS

termoz 8 U³⁾

Highest permissible loads for a single anchor¹⁾⁴⁾ for multiple use for non-structural applications.
For the design the complete approval ETA-02/0019 has to be considered.

	Brick raw density ρ [kg/dm ³]	min. compressive brick strength f_b [N/mm ²]	min. embedment depth h_{nom} [mm]	Min. member thickness h_{min} [mm]	Concrete and masonry		
					permissible tensile load ³⁾ N_{perm} [kN]	min. spacing ²⁾ s_{min} [mm]	min. edge distance ²⁾ c_{min} [mm]
Concrete acc. EN 206:2013							
8 U	$\geq C12/15$	70 ⁶⁾	100	100	0,50	100	100
	$\geq C16/20$			100	0,50	100	100
	C50/60			100	0,50	100	100
Calcium silicate solid bricks, e.g. acc. to DIN V 106:2005-10, EN 771-2:2011, KS							
8U	$\geq 1,6$	12	70 ⁵⁾⁶⁾	100	0,50	100	100
Solid Clay bricks e.g. acc. to DIN 105-100:2012-01, EN 771-1:2011, Mz							
8U	$\geq 1,6$	12	70 ⁵⁾⁶⁾	100	0,50	100	100
Hollow calcium silicate brick, acc. to DIN V 106:2005-10, EN 771-2:2011, KSL							
8U	$\geq 1,4$	12	70 ⁵⁾⁶⁾	100	0,25	100	100
Vertically perforated clay bricks e.g. acc. to DIN 105-100:2012-01, EN 771-1:2011, HLz							
8U	$\geq 1,2$	12	70 ⁵⁾⁷⁾	100	0,25	100	100
Solid lightweight concrete block, e.g. acc. to DIN V 18152-100:2005-10 EN 771-3:2011 Vbl							
8U	$\geq 0,5$	4	70 ⁵⁾⁷⁾	100	0,20	100	100
Hollow brick light-weight concrete, e.g. acc. to DIN V 18153-100: 2005-10, EN 771-3:2011 Hbl							
8U	$\geq 0,5$	2	70 ⁵⁾⁷⁾	100	0,13	100	100
Autoclaved aerated concrete blocks, e.g. AAC acc. to DIN V 4165-100:2005-10, EN 771-4							
8U	$\geq 0,35$	2	70 ⁷⁾	100	0,17	100	100
	$\geq 0,5$	4	70 ⁷⁾	100	0,40	100	100

¹⁾ The partial safety factors for material resistance as regulated in the approval as well as a partial safety factor for load actions of $\gamma_F = 1,5$ are considered.

²⁾ Minimum possible axial spacings resp. edge distances acc. approval.

³⁾ Plastic anchor for fixing of external thermal insulation composite systems with rendering acc. ETAG 014. Only tensile wind loads are permitted.

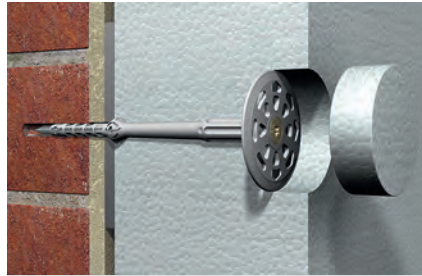
⁴⁾ The given loads are valid for installation and use of fixations in dry masonry for temperatures in the substrate up to +24 °C (resp. short term up to 40 °C).

⁵⁾ Restrictions concerning the manufacturer and the permissible hole patterns as well as the web thickness see approval.

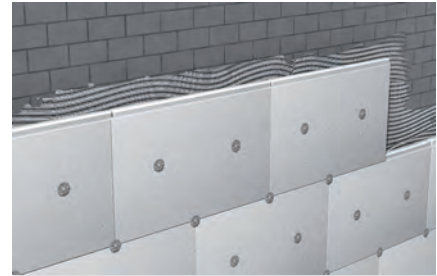
⁶⁾ Hammer drilling

⁷⁾ Rotary drilling

The economic screw fixing for all ETICS insulation materials



Countersunk installation



Polystyrene rigid foam boards O35 on perforated sand-lime brick

BUILDING MATERIALS

- Building material classes A, B, C, D, E
- Concrete
- Concrete (weather shell)
- Building brick
- Solid sand-lime brick
- Hollow blocks made from lightweight concrete
- Vertically perforated brick
- Perforated sand-lime brick
- Lightweight aggregate concrete
- Aerated concrete

APPROVALS



ADVANTAGES

- Compound screw minimises the thermal bridge, thus there are no fixing marks on the façade.
- Recessed installation with round cap provides a smooth surface for thinner render layer.
- Less drill wear and drill time due to minimum installation depth of 35 mm in the substrate.
- With flush installation, the disc tapers to a very thin edge, thus providing for optimal retaining of the insulation panel and for application of thin render.
- While flush installation the anchor washer can be combined with larger insulation disc DT 90, DT 110 and DT 140 for very soft insulation materials.
- For insulation material thicknesses up to 340 mm.
- Standard embedment depth for all building materials.

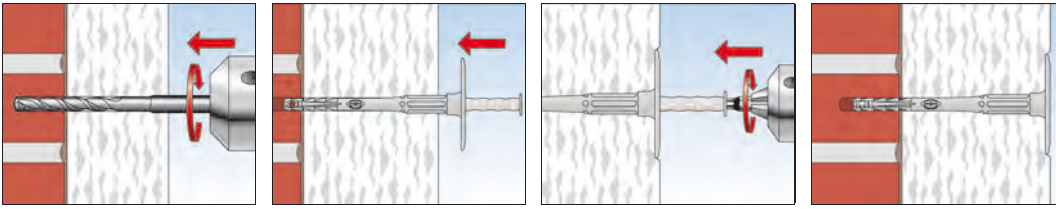
APPLICATIONS

- Attachment of ETICS insulating boards on concrete and masonry
- Flush installation in all conventional insulation materials
- Flush installation of insulation materials such as polystyrene rigid foam panels and dense mineral wool panels

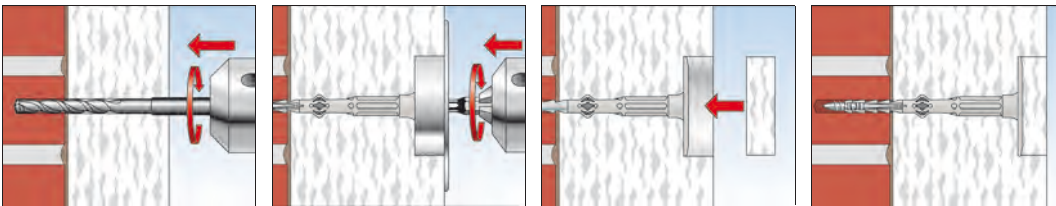
FUNCTIONING

- The fixing is pushed through the insulation into the drilled hole and is screwed tight.
- For recessed installation, you require the installation tool termoz CS.
- Optionally, the installation tool termoz CS can also be used for flush installation by turning the disc.
- For recessed installation, the insulation disc is to be covered with a round plug.
- When using the installation tool, the installation is completed when the stop disc is flush with the insulation panel.
- For lengths from 250 mm the optional supplied bits T 25 are required.

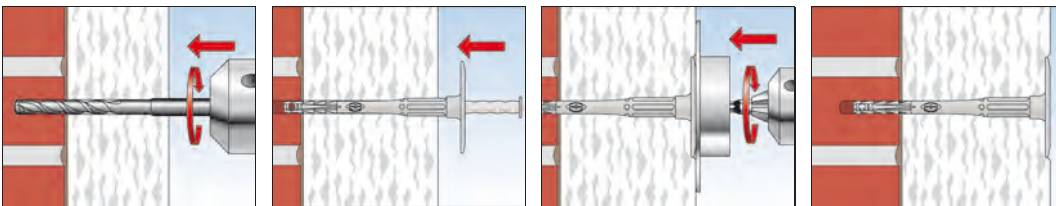
FLUSH-TO SURFACE INSTALLATION



COUNTERSUNK INSTALLATION



ALTERNATIV: FLUSH-TO SURFACE INSTALLATION



ACCESSORIES



Caps **MW D60**



Caps **PS D60 white**



Setting tool **CS**
(hexagonal-adaptor)



Setting tool **CS**
(SDS-adaptor)

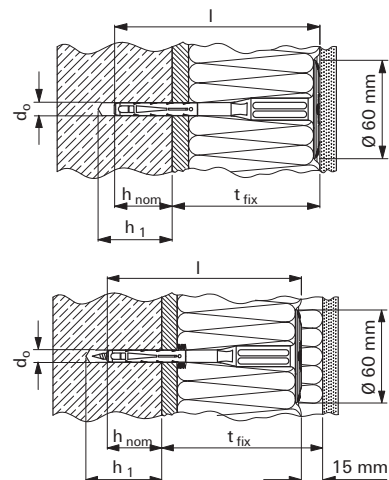


Bit T 25 CS 178,5 mm

3

Item	Art.-No.	Contents	Match	Sales unit [pcs]
Caps MW D60	046172	–	–	100
Caps PS D60 white	046173	–	–	100
Caps PS D60 grey	544383	–	–	100
Setting tool CS (hexagonal-adaptor)	532618	including Bit T 30	–	1
Setting tool CS (SDS-adaptor)	532619	including Bit T 30	–	1
Bit T30 CS 26 mm	533761	–	Setting tool CS	1
Bit T25 CS 98,5 mm	533762	–	Setting tool CS	1
Bit T25 CS 178,5 mm	533763	–	Setting tool CS	1

TECHNICAL DATA



Item	Art.-No.	Approval ETA	Drill diameter	Fixing length	Effect. anchorage depth	Min. drill hole depth at surface-flush installation	Max. usable length at surface-flush installation	Min. drill hole depth at countersunk installation	Max. usable length at countersunk installation	Drive	Sales unit
			d ₀ [mm]	l [mm]	h _{nom} [mm]	h ₁ [mm]	t _{fix} [mm]	h ₁ [mm]	t _{fix} [mm]		[pcs]
termoz CS 8/110	531960 ¹⁾	■	8	108	35	45	70	-	-	T30	100
termoz CS 8/130	531970	■	8	128	35	45	90	60	90	T30	100
termoz CS 8/150	531974	■	8	148	35	45	110	60	110	T30	100
termoz CS 8/170	531976	■	8	168	35	45	130	60	130	T30	100
termoz CS 8/190	531978	■	8	188	35	45	150	60	150	T30	100
termoz CS 8/210	531982	■	8	208	35	45	170	60	170	T30	100
termoz CS 8/230	531984	■	8	228	35	45	190	60	190	T30	100
termoz CS 8/250	531987	■	8	248	35	45	210	60	210	T25	100
termoz CS 8/250 R	531989 ²⁾	■	8	248	35	45	210	60	210	T25	100
termoz CS 8/270	531991	■	8	268	35	45	230	60	230	T25	100
termoz CS 8/270 R	531993 ²⁾	■	8	268	35	45	230	60	230	T25	100
termoz CS 8/290	531995	■	8	288	35	45	250	60	250	T25	100
termoz CS 8/290 R	531997 ²⁾	■	8	288	35	45	250	60	250	T25	100
termoz CS 8/310	532000	■	8	308	35	45	270	60	270	T25	100
termoz CS 8/310 R	532003 ²⁾	■	8	308	35	45	270	60	270	T25	100
termoz CS 8/330	532006	■	8	328	35	45	290	60	290	T25	100
termoz CS 8/350	532008	■	8	348	35	45	310	60	310	T25	100
termoz CS 8/370	532011	■	8	368	35	45	330	60	330	T25	100
termoz CS 8/390	532014	■	8	388	35	45	350	60	350	T25	100

1) Not for countersunk mounting

2) R = version with slim shaft, to set with Bit T 25, Art.-No. 533762

from length 250 mm Bit T 25, Art.-No. 533763, is required

LOADS

termoz CS 8³⁾

Highest permissible loads for a single anchor^{1) 4)} for multiple use for non-structural applications.
For the design the complete assessment ETA-14/0372 has to be considered.

Type	Brick raw density ρ [kg/dm ³]	min. compressive brick strength f_b [N/mm ²]	min. embedment depth h_{nom} [mm]	min. member thickness h_{min} [mm]	Concrete and masonry		
					permissible tensile load ³⁾ N_{perm} [kN]	min. spacing ²⁾ s_{min} [mm]	min. edge distance ²⁾ c_{min} [mm]
Concrete							
CS 8	C12/15 - C45/55		35 ⁶⁾	100	0,40	100	100
	C50/60				0,50		
Weather shell							
CS 8	C20/25 - C45/55		35 ^{6) 5)}	42	0,40	100	100
	C50/60				0,50		
Solid Clay bricks e.g. acc. to DIN 105-100:2012-01, EN 771-1:2011, Mz							
CS 8	$\geq 1,8$	20	35 ⁶⁾	100	0,50	100	100
Calcium silicate solid bricks, e.g. acc. to DIN V 106:2005-10, EN 771-2:2011, KS							
CS 8	$\geq 1,8$	20	35 ⁶⁾	100	0,50	100	100
		12			0,30		
Solid lightweight concrete block, e.g. acc. to DIN V 18152-100:2005-10 EN 771-3:2011 Vbl							
CS 8	$\geq 1,4$	8	35 ⁶⁾	100	0,17	100	100
Solid concrete block, e.g. acc. to DIN V 18152-100:2005-10 EN 771-3:2011, Vbn							
CS 8	$\geq 2,0$	20	35 ⁶⁾	100	0,40	100	100
		12			0,25		
Vertically perforated clay bricks e.g. acc. to DIN 105-100:2012-01, EN 771-1:2011, HLz							
CS 8	$\geq 1,0$	12	35 ^{7) 8)}	100	0,20	100	100
	$\geq 1,6$	48			0,50		
Hollow calcium silicate brick, acc. to DIN V 106:2005-10, EN 771-2:2011, KSL							
CS 8	$\geq 1,4$	20	35 ^{7) 8)}	100	0,30	100	100
		12			0,17		
Hollow brick light-weight concrete, e.g. acc. to DIN V 18153-100: 2005-10, EN 771-3:2011 Hbl							
CS 8	$\geq 0,9$	4	35 ^{6) 8)}	100	0,17	100	100
Hollow brick concrete, e.g. acc. to DIN V 18153-100: 2005-10, EN 771-3:2011 Hbn							
CS 8	$\geq 1,2$	10	35 ^{6) 8)}	100	0,40	100	100
		8			0,30		
		6			0,25		
		4			0,17		
Lightweight Aggregate Concrete acc. to DIN EN 1520, LAC							
CS 8	$\geq 0,9$	6	35 ⁶⁾	100	0,25	100	100
Autoclaved aerated concrete blocks, e.g. AAC acc. to DIN V 4165-100:2005-10, EN 771-4							
CS 8	$\geq 0,5$	4	35 ⁷⁾	100	0,10	100	100
		4	55 ⁷⁾		0,20		

¹⁾ The partial safety factors for material resistance as regulated in the assessment as well as a partial safety factor for load actions of $\gamma_F = 1,5$ are considered.

²⁾ Minimum possible axial spacings resp. edge distances acc. Assessment.

³⁾ Plastic anchor for fixing of external thermal insulation composite systems with rendering acc. ETAG 014. Only tensile wind loads are permitted.

⁴⁾ The given loads are valid for installation and use of fixations in dry masonry for temperatures in the substrate up to +24 °C (resp. short term up to 40 °C).

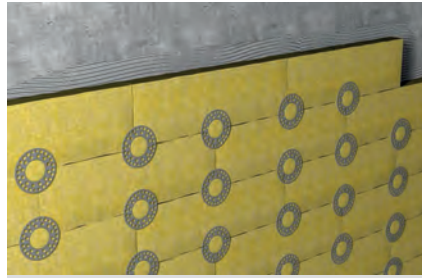
⁵⁾ Embedment depth permitted up to 45 mm.

⁶⁾ Hammer drilling

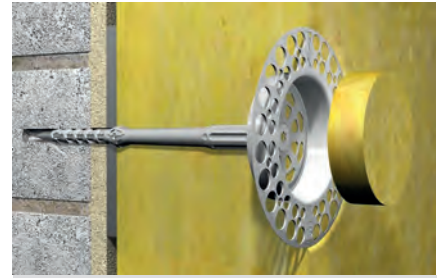
⁷⁾ Rotary drilling

⁸⁾ In masonry of the building material class C an embedment depth of $h_{nom} = 25$ mm is possible with the same loads than with 35 mm embedment depth.

The recessed ETICS screw fixing for soft insulating boards



Installation of mineral wool insulation boards on concrete



Countersunk installation in mineral wool insulation boards

BUILDING MATERIALS

- Building material classes A, B, C, D, E
- Concrete
- Concrete (weather shell)
- Building brick
- Solid sand-lime brick
- Hollow blocks made from lightweight concrete
- Vertically perforated brick
- Perforated sand-lime brick
- Lightweight aggregate concrete
- Aerated concrete

APPROVALS



ADVANTAGES

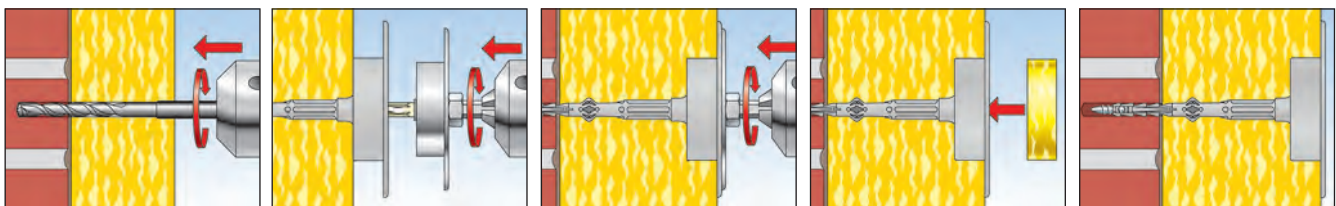
- Pre-assembled fixing with a 110 mm disc for countersunk mounting.
- The compound screw minimises the thermal bridge, thus there are no fixing marks on the façade.
- Recessed installation with round cap provides a smooth surface for thinner render layer.
- Less drill wear due to minimum installation depth of 35 mm in the substrate.
- With flush installation, the disc tapers to a very thin edge, thus providing for optimal retaining of the insulation panel and for application of thin render.

APPLICATIONS

- Attachment of ETICS insulating boards on concrete and masonry
- Flush installation of insulation materials such as mineral wool panels
- Standard embedment depth for all building materials

FUNCTIONING

- Fast setting with a standard hammer drill or cordless screwdriver.
- Easily recessed installation with the installation tool termoz CS.
- The fixing is pushed through the insulation into the drill hole and needs to be screwed tightly.
- For recessed installation, the insulation disc has to be covered with a round plug.
- The installation is completed when the disc is flush with the insulation panel.
- For the length of 250 mm the optional provided bits T25 are needed.



ACCESSORIES



Caps **MW D60**



Caps **PS D60 white**



Setting tool **CS**
(hexagonal-adaptor)



Setting tool **CS**
(SDS-adaptor)



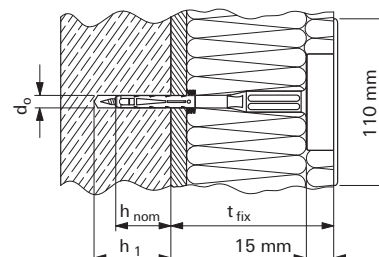
Bit **T 25 CS 178,5 mm**

Item	Art.-No.	Contents	Match	Sales unit [pcs]
Caps MW D65	525654	–	–	100
Caps PS D60 white	046173	–	–	100
Caps PS D60 grey	544383	–	–	100
Setting tool CS (hexagonal-adaptor)	532618	including Bit T 30	–	1
Setting tool CS (SDS-adaptor)	532619	including Bit T 30	–	1
Bit T30 CS 26 mm	533761	–	Setting tool CS	1
Bit T25 CS 98,5 mm	533762	–	Setting tool CS	1
Bit T25 CS 178,5 mm	533763	–	Setting tool CS	1

TECHNICAL DATA



termoz **CS 8 /... DT 110V**



Item	Art.-No.	Approval ETA	Drill diameter [mm]	Fixing length [mm]	Effect. anchorage depth h_{nom} [mm]	Min. drill hole depth h_1 [mm]	Max. usable length t_{fix} [mm]	Drive	Sales unit [pcs]
termoz CS 8/130 DT 110V	534896	■	8	143	35	60	90	T30	100
termoz CS 8/150 DT 110V	534898	■	8	163	35	60	110	T30	100
termoz CS 8/170 DT 110V	534899	■	8	183	35	60	130	T30	100
termoz CS 8/190 DT 110V	534900	■	8	203	35	60	150	T30	100
termoz CS 8/210 DT 110V	534901	■	8	223	35	60	170	T30	50
termoz CS 8/230 DT 110V	534902	■	8	243	35	60	190	T30	50
termoz CS 8/250 DT 110V	534903	■	8	263	35	60	210	T25	50
termoz CS 8/250 R DT 110V	534904 1)	■	8	263	35	60	210	T25	50
termoz CS 8/270 DT 110V	534905	■	8	283	35	60	230	T25	50
termoz CS 8/270 R DT 110V	534906 1)	■	8	283	35	60	230	T25	50
termoz CS 8/290 DT 110V	534907	■	8	303	35	60	250	T25	50
termoz CS 8/290 R DT 110V	534908 1)	■	8	303	35	60	250	T25	50
termoz CS 8/310 DT 110V	534909	■	8	323	35	60	270	T25	50
termoz CS 8/310 R DT 110V	534910 1)	■	8	323	35	60	270	T25	50
termoz CS 8/330 DT 110V	534911	■	8	343	35	60	290	T25	50
termoz CS 8/330 R DT 110V	534912 1)	■	8	363	35	60	310	T25	50
termoz CS 8/370 DT 110V	534913	■	8	383	35	60	330	T25	50
termoz CS 8/390 DT 110V	534914	■	8	403	35	60	350	T25	50

1) R = Version with a long slim shaft for renovation to be installed with bit T25, Art.-No. 533762

from length 250 mm Bit T 25, Art.-No. 533763, is required

LOADS

termoz CS 8 DT 110V³⁾

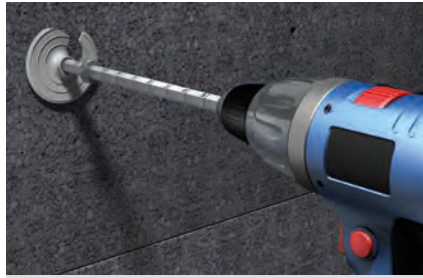
Highest permissible loads for a single anchor^{1) 4)} for multiple use for non-structural applications.
For the design the complete assessment ETA-14/0372 has to be considered.

Type	Brick raw density ρ [kg/dm ³]	min. compressive brick strength f_b [N/mm ²]	min. embedment depth h_{nom} [mm]	min. member thickness h_{min} [mm]	Concrete and masonry		
					permissible tensile load ³⁾ N_{perm} [kN]	min. spacing ²⁾ s_{min} [mm]	min. edge distance ²⁾ c_{min} [mm]
Concrete							
CS 8 DT 110V	C12/15 - C45/55	35 ⁶⁾	100	0,40	100	100	
	C50/60			0,50			
Weather shell							
CS 8 DT 110V	C20/25 - C45/55	35 ^{6) 5)}	42	0,40	100	100	
	C50/60			0,50			
Solid Clay bricks e.g. acc. to DIN 105-100:2012-01, EN 771-1:2011, Mz							
CS 8 DT 110V	$\geq 1,8$	20	35 ⁶⁾	100	0,50	100	100
Calcium silicate solid bricks, e.g. acc. to DIN V 106:2005-10, EN 771-2:2011, KS							
CS 8 DT 110V	$\geq 1,8$	20	35 ⁶⁾	100	0,50	100	100
		12			0,30		
Solid lightweight concrete block, e.g. acc. to DIN V 18152-100:2005-10 EN 771-3:2011 Vbl							
CS 8 DT 110V	$\geq 1,4$	8	35 ⁶⁾	100	0,17	100	100
Solid concrete block, e.g. acc. to DIN V 18152-100:2005-10 EN 771-3:2011, Vbn							
CS 8 DT 110V	$\geq 2,0$	20	35 ⁶⁾	100	0,40	100	100
		12			0,25		
Vertically perforated clay bricks e.g. acc. to DIN 105-100:2012-01, EN 771-1:2011, HLz							
CS 8 DT 110V	$\geq 1,0$	12	35 ^{7) 8)}	100	0,20	100	100
	$\geq 1,6$	48			0,50		
Hollow calcium silicate brick, acc. to DIN V 106:2005-10, EN 771-2:2011, KSL							
CS 8 DT 110V	$\geq 1,4$	20	35 ^{7) 8)}	100	0,30	100	100
		12			0,17		
Hollow brick light-weight concrete, e.g. acc. to DIN V 18153-100: 2005-10, EN 771-3:2011 Hbl							
CS 8 DT 110V	$\geq 0,9$	4	35 ^{6) 8)}	100	0,17	100	100
Hollow brick concrete, e.g. acc. to DIN V 18153-100: 2005-10, EN 771-3:2011 Hbn							
CS 8 DT 110V	$\geq 1,2$	10	35 ^{6) 8)}	100	0,40	100	100
		8			0,30		
		6			0,25		
		4			0,17		
Lightweight Aggregate Concrete acc. to DIN EN 1520, LAC							
CS 8 DT 110V	$\geq 0,9$	6	35 ⁶⁾	100	0,25	100	100
Autoclaved aerated concrete blocks, e.g. AAC acc. to DIN V 4165-100:2005-10, EN 771-4							
CS 8 DT 110V	$\geq 0,5$	4	35 ⁷⁾	100	0,10	100	100
		4	55 ⁷⁾		0,20		

¹⁾ The partial safety factors for material resistance as regulated in the assessment as well as a partial safety factor for load actions of $\gamma_F = 1,5$ are considered.
²⁾ Minimum possible axial spacings resp. edge distances acc. Assessment.
³⁾ Plastic anchor for fixing of external thermal insulation composite systems with rendering acc. ETAG 014. Only tensile wind loads are permitted.
⁴⁾ The given loads are valid for installation and use of fixations in dry masonry for temperatures in the substrate up to +24 °C (resp. short term up to 40 °C).

⁵⁾ Embedment depth permitted up to 45 mm.
⁶⁾ Hammer drilling
⁷⁾ Rotary drilling
⁸⁾ In masonry of the building material class C an embedment depth of $h_{nom} = 25$ mm is possible with the same loads than with 35 mm embedment depth.

The innovative countersinkable ETICS fixing for all building material classes



Setting procedure termoz SV II ecotwist in polystyrene rigid foam boards 032



Setting procedure termoz SV II ecotwist in polystyrene rigid foam boards 032

BUILDING MATERIALS

- Building material classes A, B, C, D, E
- Concrete
- Concrete (weather shell)
- Building brick
- Solid sand-lime brick
- Hollow blocks made from lightweight concrete
- Vertically perforated brick
- Perforated sand-lime brick
- Aerated concrete
- Lightweight aggregate concrete
- Sepa Parpaing (French brick)

APPROVALS



ADVANTAGES

- Standard anchoring depth for all building materials.
- One fixing for all insulating material thicknesses from 100 mm to 400 mm. This increases productivity, saves time and storage space.
- Sturdy setting tool with stop disc for a simple and precise setting procedure.
- The screw disc cuts in cleanly, without damaging the insulating material.
- Simple setting using the specially designed setting tool.

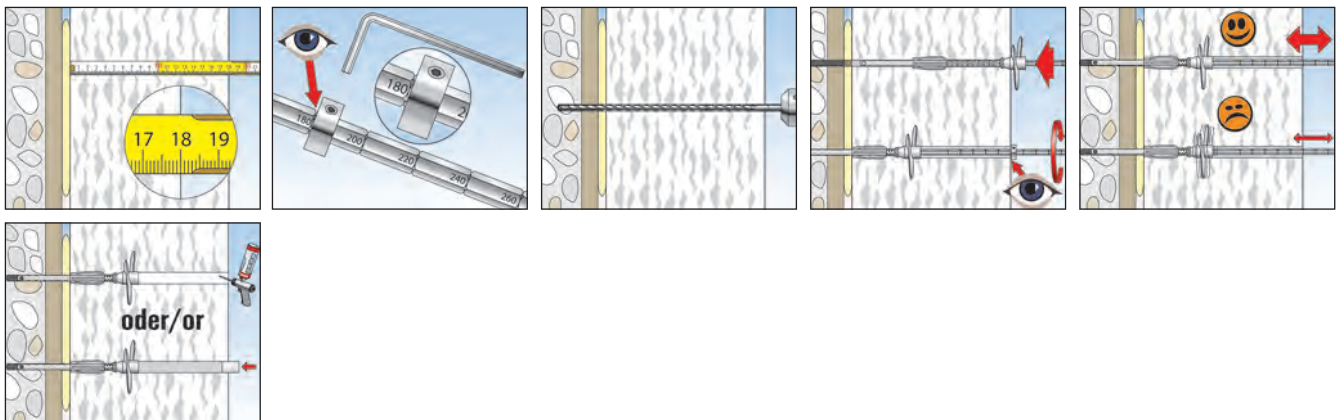
APPLICATIONS

- Attachment of ETICS polystyrene rigid foam boards and similar mineral wool boards to concrete and masonry materials
- Counterbored installation

FUNCTIONING

- The fixing is inserted through the insulating material into the drill hole and screwed in using the setting tool.
- The screwing disc and screw have the same pitch, which means they turn at the same time through the insulation until the anti-rotation lock meets the base.
- Then the steel screw turns into the expansion zone. The compression zone is compressed until it is only a few millimetres thick and the fixing is anchored in the base.
- The setting process is completed when the marking ring is flush with the insulation.

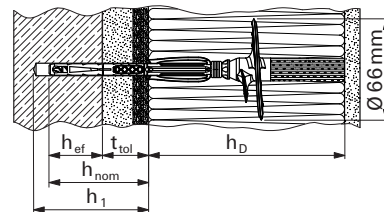
3



TECHNICAL DATA



termoz **SV II ecotwist**



Item	Art.-No.	Approval ETA	Insulation thickness h_D [mm]	Shaft dia- meter [mm]	Thickness tolerance compensation t_{tol} [mm]	Effect. ancho- rage depth h_{ef} [mm]	Shaft length in drill hole h_{nom} [mm]	Drillhole depth in base material h_1 [mm]	Total drill hole depth [mm]	Sales unit [pcs]
termoz SV II ecotwist 0-10	530353	■	100 - 400	8	0 - 10	35	45	55	$h_D + 55$	100
termoz SV II ecotwist 10-30	530354	■	100 - 400	8	0 - 30	35	65	75	$h_D + 75$	100
termoz SV II ecotwist 30-60	530355	■	100 - 400	8	30 - 60	35	95	105	$h_D + 105$	100

ACCESSORIES



termoz **SV II closing plug PS**



termoz **SV II Installation tool**



termoz **SV II closing plug MW**

Item	Art.-No.	Sales unit [pcs]
termoz SV II closing plug PS	530654	200
termoz SV II closing plug MW	536160	200
termoz SV II installation tool 260 mm	530356	1
termoz SV II installation tool 400 mm	530357	1

LOADS

termoz SV II ecotwist³⁾

Highest permissible loads for a single anchor¹⁾⁴⁾ for multiple use for non-structural applications.
For the design the complete approval ETA-12/0208 has to be considered.

	Brick raw density ρ [kg/dm ³]	min. compressive brick strength f_b [N/mm ²]	min. embedment depth h_{ef} [mm]	Min. member thickness h_{min} [mm]	Concrete and masonry		
					permissible tensile load ³⁾ N_{perm} [kN]	min. spacing ²⁾ s_{min} [mm]	min. edge distance ²⁾ c_{min} [mm]
Concrete acc. EN 206:2013							
SV II ecotwist	\geq C12/15		35 ⁵⁾	100	0,50	100	100
	\geq C16/20			100	0,50	100	100
	\geq C50/60			100	0,50	100	100
Weather shell, concrete							
SV II ecotwist	\geq C20/25		35 ⁵⁾	40	0,30	100	100
Calcium silicate solid bricks, e.g. acc. to DIN V 106:2005-10, EN 771-2:2011, KS							
SV II ecotwist	\geq 2	12	35 ⁵⁾⁶⁾	100	0,40	100	100
	\geq 2	20	35 ⁵⁾⁶⁾	100	0,50	100	100
Solid Clay bricks e.g. acc. to DIN 105-100:2012-01, EN 771-1:2011, Mz							
SV II ecotwist	\geq 1,8	12	35 ⁵⁾⁶⁾	100	0,40	100	100
Solid concrete block, e.g. acc. to DIN V 18152-100:2005-10 EN 771-3:2011, Vbn							
SV II ecotwist	\geq 2	12	35 ⁵⁾⁶⁾	100	0,40	100	100
	\geq 2	20	35 ⁵⁾⁶⁾	100	0,50	100	100
Hollow calcium silicate brick, acc. to DIN V 106:2005-10, EN 771-2:2011, KSL							
SV II ecotwist	\geq 1,4	12	35 ⁵⁾⁶⁾	100	0,25	100	100
	\geq 1,4	20	35 ⁵⁾⁶⁾	100	0,40	100	100
Vertically perforated clay bricks e.g. acc. to DIN 105-100:2012-01, EN 771-1:2011, HLz							
SV II ecotwist	\geq 1,0	12	35 ⁵⁾⁷⁾	100	0,25	100	100
Solid lightweight concrete block, e.g. acc. to DIN V 18152-100:2005-10 EN 771-3:2011 Vbl							
SV II ecotwist	\geq 1,4	8	35 ⁵⁾⁶⁾	100	0,20	100	100
Hollow brick light-weight concrete, e.g. acc. to DIN V 18153-100: 2005-10, EN 771-3:2011 Hbl							
SV II ecotwist	\geq 1,2	8	35 ⁵⁾⁶⁾	100	0,30	100	100
	\geq 1,2	10	35 ⁵⁾⁶⁾	100	0,40	100	100
Lightweight Aggregate Concrete acc. to DIN EN 1520, LAC							
SV II ecotwist	\geq 0,9	6	35 ⁵⁾	100	0,25	100	100
Autoclaved aerated concrete blocks, e.g. AAC acc. to DIN V 4165-100:2005-10, EN 771-4							
SV II ecotwist	\geq 0,5	4	35 ⁷⁾	100	0,13	100	100

¹⁾ The partial safety factors for material resistance as regulated in the approval as well as a partial safety factor for load actions of $\gamma_F = 1,5$ are considered.

²⁾ Minimum possible axial spacings resp. edge distances acc. approval.

³⁾ Plastic anchor for fixing of external thermal insulation composite systems with rendering acc. ETAG 014. Only tensile wind loads are permitted.

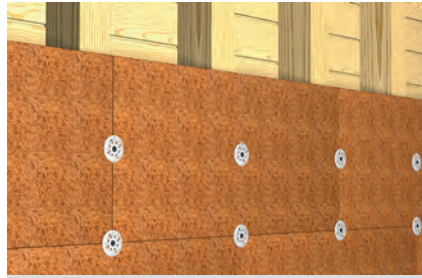
⁴⁾ The given loads are valid for installation and use of fixations in dry masonry for temperatures in the substrate up to +24 °C (resp. short term up to 40 °C).

⁵⁾ Restrictions concerning the manufacturer and the permissible hole patterns as well as the web thickness see approval.

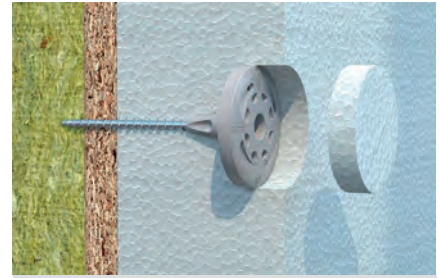
⁶⁾ Hammer drilling

⁷⁾ Rotary drilling

The efficient countersunk ETICS fixing for board materials



Fixing of wooden soft fibre boards on solid wood



Attachment of polystyrene boards on OSB-panel

VERSIONS

- A2 stainless steel screw

BUILDING MATERIALS

- MDF boards
- OSB boards
- Chipboard
- Gypsum fibreboard
- Solid wood

CERTIFICATES



ADVANTAGES

- The pre-assembled ETICS fixing guarantees safe fixing into the substrate.
- The special geometry under the head of the anchor roughens the surface during the setting process and provides a torque-reduced penetration into the insulation.
- The use of the setting tool 6H enables a clean fixing. Optionally, the setting tool CS can be used in combination with a special bit.
- The minimum screw-in depth of 24 mm provides quick installation. Pre-drilling is not necessary.
- For insulating material thicknesses up to 300 mm.
- The countersunk mounting guarantees plaster surfaces without any markings.

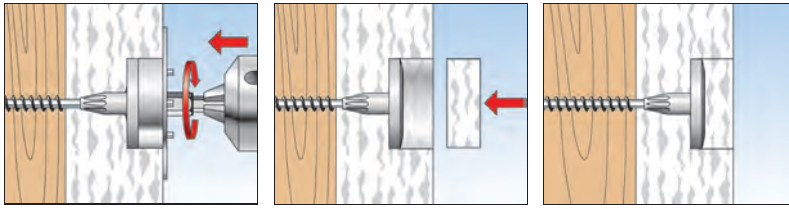
APPLICATIONS

- Attachment of ETICS insulating boards on wooden substructures
- Flush installation in ETICS insulating materials e.g. polystyrene and mineral wool
- Flush-to-surface installation in pressure-resistant insulation boards

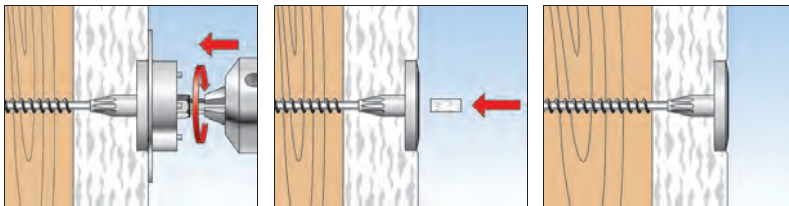
FUNCTIONING

- The special setting tool 6H is used for countersunk installation. This setting tool 6H enables a precise positioning and fast installation of the fixing. The countersunk hole is covered with a suitable insulation closing plug which ensures a homogeneous surface.
- By rotating the disc of the setting tool 6H by 180°, it can be used for the flush-to-surface installation. This allows the exact positioning of the anchor plate on the insulation surface. The screw opening is covered by the included plug.

COUNTERSUNK INSTALLATION



FLUSH-TO SURFACE INSTALLATION



ACCESSORIES



Caps MW D60



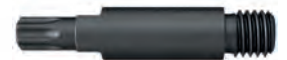
Caps PS D60 white



Caps PS D60 grey



Setting tool 6H
(hexagonal-adapter)



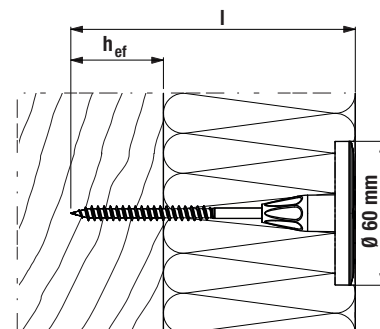
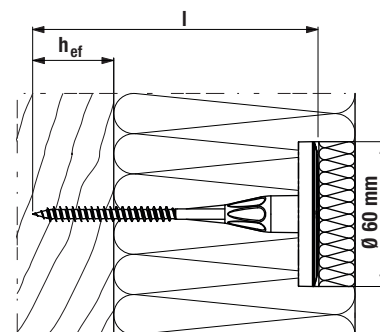
Bit T30 6H 43,5 mm

Item	Art.-No.		Sales unit [pcs]
Caps MW D60	046172		100
Caps PS D60 white	046173		100
Caps PS D60 grey	544383		100
Setting tool 6H (hexagonal-adapter)	551734		1
Bit T30 H 43,5 mm	551735		1
Bit T25 H 43,5 mm (for stainless steel screws)	557132		1

TECHNICAL DATA



termoz 6H



Item	Item No.	Fixing length	Disc Ø	Screw diameter	Anchorage depth	Max. usable length at surface-flush installation	Max. usable length at counter-sunk installation	Sales unit
		l [mm]	[mm]	d _s [mm]	h _{ef} [mm]	t _{fix} [mm]	t _{fix} [mm]	[pcs]
termoz 6H 60	548477	60	60	6,0	24	—	30	100
termoz 6H 80	548478	80	60	6,0	24	50	65	100
termoz 6H 100	548479	100	60	6,0	24	70	85	100
termoz 6H 120	548480	120	60	6,0	24	90	105	100
termoz 6H 140	548481	140	60	6,0	24	110	125	100
termoz 6H 160	548482	160	60	6,0	24	130	145	100
termoz 6H 180	548483	180	60	6,0	24	150	165	100
termoz 6H 200	548484	200	60	6,0	24	170	185	100
termoz 6H 220	548485	220	60	6,0	24	190	205	100
termoz 6H 240	548486	240	60	6,0	24	210	225	100
termoz 6H 260	548487	260	60	6,0	24	230	245	100
termoz 6H 280	548488	280	60	6,0	24	250	265	100
termoz 6H 320	548490	320	60	6,0	24	270	285	100
termoz 6H 120 A2	557162	120	60	6,0	24	90	105	100
termoz 6H 140 A2	557163	140	60	6,0	24	110	125	100
termoz 6H 160 A2	557164	160	60	6,0	24	130	145	100
termoz 6H 180 A2	557165	180	60	6,0	24	150	165	100
termoz 6H 200 A2	557166	200	60	6,0	24	170	185	100
termoz 6H 220 A2	557167	220	60	6,0	24	190	205	100

1) Bit size = T30

2) Bit size = T25

Surface or countersunk ETICS fixing for board materials with approved Power-Fast screw



Fixing of wooden soft fibre boards on solid wood



Attachment of polystyrene boards on OSB-panel

BUILDING MATERIALS

- MDF boards
- OSB boards
- Chipboard
- Gypsum fibreboard
- Solid wood

ADVANTAGES

- Pre-fitted fixing with the approved fischer Power-Fast screw. This guarantees safe retention in the substrate.
- The minimum screw-in depth of 30 mm guarantees fast assembly. There is no need to pre-drill the hole.
- Plugs are enclosed in every packaging unit.
- The fixing discs can be combined with the large insulating discs DT 90, DT 110 and DT 140 when very soft insulating materials are used.
- Countersinkable assembly using the TTS assembly tool is possible in soft materials such as polystyrene rigid foam boards PS 15 or PS 20.
- For insulating material thicknesses up to 280 mm.

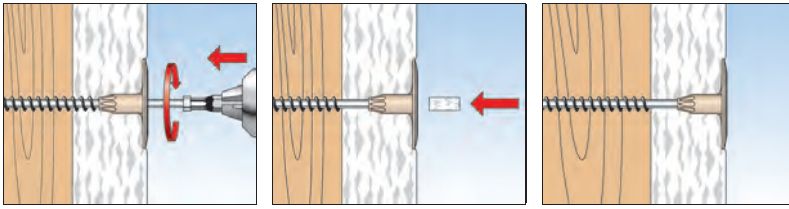
APPLICATIONS

- Attachment of ETICS insulating boards on wooden substructures
- Flush installation in ETICS insulating materials e.g. polystyrene
- Flush-to-surface installation in wooden soft fibre boards

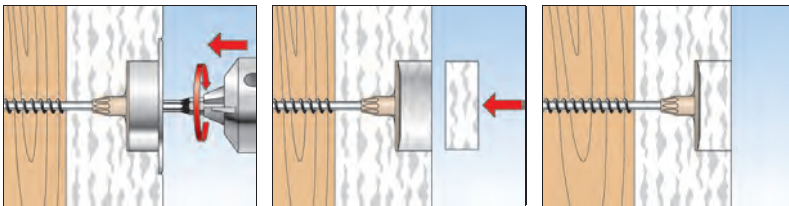
FUNCTIONING

- The fixing is inserted using a standard T30 bit for flush installation.
- The TSS assembly tool is required for countersunk installation. This is used for precise positioning and screwing of the fixing. The counterbore is sealed using an insulating disc available, resulting in a level insulating material surface.
- The disc of the TSS assembly tool can also be turned and used for flush-to-surface installation. This prevents the disc from being set too deep.

FLUSH-TO SURFACE INSTALLATION



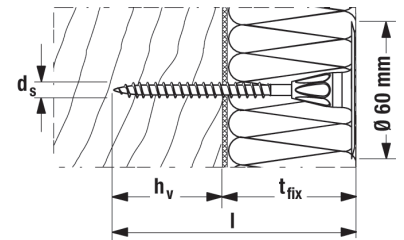
COUNTERSUNK INSTALLATION



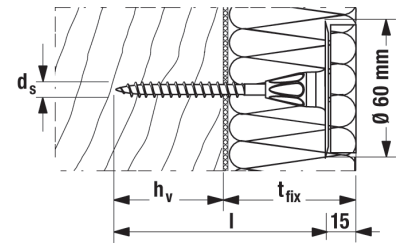
TECHNICAL DATA



termofix 6H-NT



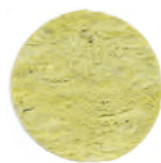
surface-flush installation



recessed installation

Item	Art.-No.	Fixing length	Disc Ø	Screw diameter	Anchorage depth	Usable length at surface-flush installation	Usable length at anchorage depth 70mm	Sales unit [pcs]
		l [mm]	[mm]	d _s [mm]	h _v [mm]	t _{fix} [mm]	t _{fix} [mm]	
termofix 6H-NT 60	523198 ¹⁾	60	60	6,0	30	30	—	100
termofix 6H-NT 80	523199	80	60	6,0	30	50	65	100
termofix 6H-NT 100	523200	100	60	6,0	30	70	85	100
termofix 6H-NT 120	523201	120	60	6,0	30	90	105	100
termofix 6H-NT 140	523202	140	60	6,0	30	110	125	100
termofix 6H-NT 160	523203	160	60	6,0	30	130	145	100
termofix 6H-NT 180	523204	180	60	6,0	30	150	165	100
termofix 6H-NT 200	523205	200	60	6,0	30	170	185	100
termofix 6H-NT 220	523206	220	60	6,0	30	190	205	100
termofix 6H-NT 240	523207	240	60	6,0	30	210	225	100
termofix 6H-NT 260	523208	260	60	6,0	30	230	245	100
termofix 6H-NT 280	523209	280	60	6,0	30	250	265	100
termofix 6H-NT 300	523210	300	60	6,0	30	270	285	100
termofix 6H-NT 320	523211	320	60	6,0	30	290	305	100

¹⁾ suitable for flush-mounting installation only



Caps **MW D60**



Caps **PS D60** white



Setting tool **TSS**

Item	Art.-No.	Sales unit [pcs]
Caps MW D60	046172	100
Caps PS D60 white	046173	100
Caps PS D60 grey	544383	100
Setting tool TSS	524128	1

LOADS

termofix 6H-NT

Extraction values in various building materials.

Anchoring substrate	Thickness d [mm]	Recommended maximum service load values from internal laboratory tests safety coefficient 3, depth 30 mm [kN]
OSB panel	16	0,40
Timber planking FP (laminated particle board)	16	0,30
3 Layer panel	19	0,50
Beams	60	0,60 (in case of $h_v 40 = 1,0$ kN)
Gypsum fibre board	12,5	0,15
MDF board	19	0,50

The constructive screw fixing with Delta-Seal coated drilling screw for metal substructures



Polystyrene rigid foam boards on metal sheet

BUILDING MATERIALS

- Metal sheet / trapezoidal metal sheet up to 1.5 mm

ADVANTAGES

- The pre-assembled screw reduces working time.
- High level of corrosion protection of the screw thanks to Delta-Seal coating.
- An air gap is produced above the screw head beneath the sealing ball. This reduces thermal-transmission.
- The flexible head compensates for any thermal-expansion and prevents damage.
- Can be combined with the insulating discs DT 90, DT 110 and DT 140 for very soft insulating materials.
- For insulating material thicknesses up to 160 mm.

APPLICATIONS

- Attachment of ETICS insulating boards to metal substructures
- Flush-to-surface installation in ETICS insulating materials e.g. polystyrene

FUNCTIONING

- The fixing is set in push-through installation.
- A standard PH2 bit is required for installation.
- Simple, fast setting by screwing the Delta-Seal coated screw in using a standard screwdriver.
- Non load bearing layers such as adhesive are included in the maximum useful length.

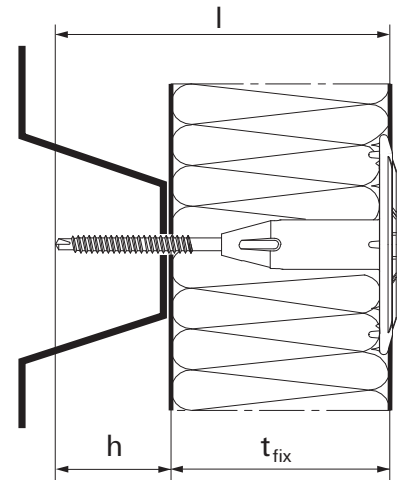
TECHNICAL DATA



termofix **B** washer

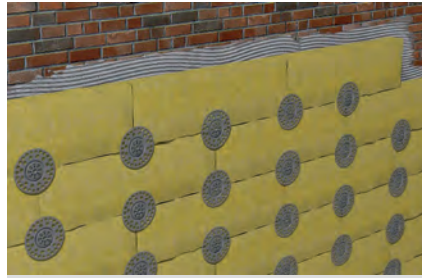
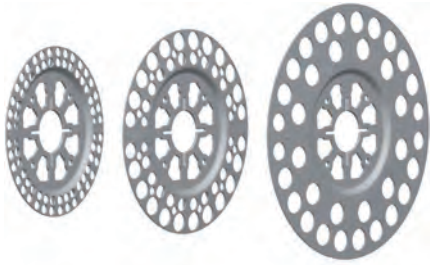


termofix **B**

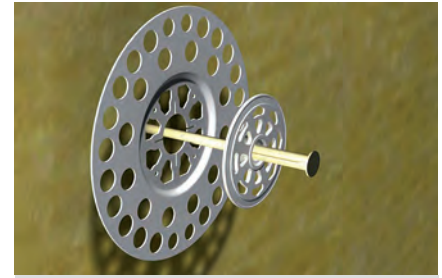


Item	Art.-No.	Effect. anchorage depth h [mm]	Fixing length l [mm]	Max. usable length t _{fix} [mm]	Screw length l _s [mm]	Disc Ø [mm]	Drive	Sales unit [pcs]
termofix B washer	534982	–	–	–	–	60	–	–
termofix B 70	008691	20	70	50	60	60	PH 2	100
termofix B 90	008692	20	90	70	80	60	PH 2	100
termofix B 110	008693	20	110	90	100	60	PH 2	100
termofix B 130	008694	20	130	110	120	60	PH 2	100
termofix B 160	008695	20	160	140	150	60	PH 2	100
termofix B 180	008696	20	180	160	170	60	PH 2	100

The insulation disc for combination with termoz and termofix screw fixings



Additional washers for soft insulation boards



Soft insulation board

ADVANTAGES

- The various disc diameters allow for individual adaptation to various insulation materials and requirements and offer the greatest flexibility with wide-ranging applications.
- The flexible pins in the DT 90 ensure sustained pressure on the insulation, thus providing a secure hold.

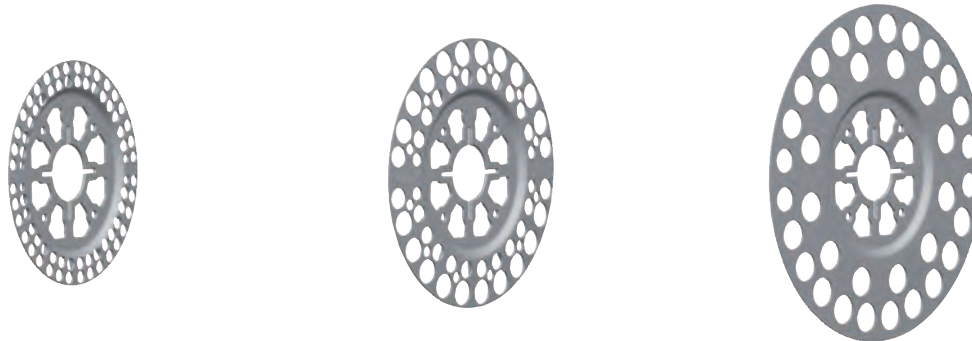
APPLICATIONS

- Used in combination with Termoz and Termofix screw fixings to fix ETICS insulating boards with low compressive strength
- Flush surface installation in ETICS insulating materials e.g. mineral wool

FUNCTIONING

- The discs are set in push-through installation.
- Push the selected DT insulating disc onto the termoz or termofix screw fixing and fit.

TECHNICAL DATA



DT 90

DT 110

DT 140

Item	Art.-No.	Disc Ø					Sales unit
		[mm]					[pcs]
DT 90	008889	90					100
DT 110	090745	110					100
DT 140	008690	140					100

The disc element for use with standard screws



Attachment of polystyrene boards on OSB-panel

BUILDING MATERIALS

- Panel building materials
- Solid wood

ADVANTAGES

- The polystyrene plugs are included with the disc element Termofix H 10.
- In case of disc elements termofix H 50, 90 and 150 the disc is sealed using the sealing cap moulded on.
- An air column is produced between the screw head and this seal. This reduces thermal-transmission losses.
- Extremely economical thanks to different shank lengths. This allows the screw length to be reduced if necessary.
- Can be combined with the insulating discs DT 90, DT 110 and DT 140.

APPLICATIONS

- Attachment of ETICS insulating boards

FUNCTIONING

- The fixing (disc and screw) is set in push-through installation.
- Non-load-bearing layers such as adhesive and old plaster should not serve as an anchoring base.

TECHNICAL DATA



termofix H 10



termofix H 50



termofix H 90



termofix H 150

Item	Art.-No.	Shaft length L [mm]	Disc Ø [mm]	Disc lock	Colour	Sales unit [pcs]
termofix H 10	514288	29	60	PS plug (included)	green	200
termofix H 50	514289	69	60	Sealing cap (moulded on)	green	100
termofix H 90	514290	109	60	Sealing cap (moulded on)	green	100
termofix H 150	514291	169	60	Sealing cap (moulded on)	green	100

Discs for combining nail and frame fixings, as well as screws



Insulating materials in two-leaf external walls

ADVANTAGES

- The various disc diameters allow for individual adaptation to various insulation materials and requirements and offer the greatest flexibility with wide-ranging applications.
- The flexible pins in the DT 90 ensure sustained pressure on the insulation, thus providing a secure hold.
- The DTM 60 made of stainless steel A4 makes it possible to use a frame fixing, and allows for a secure fixing of the insulation material in façade construction in cases of high requirements.

APPLICATIONS

- To fix soft and pressure-resistant insulation materials.
- DT 90/4 on VB wall tie
- DT 60/10, DTM 60/10 and DTM 70/10 in combination with 10 mm frame fixing
- DT 90/8 and insulation washer 8/60 in combination with 8 mm hammerfix
- HV and HK 36 with 5 mm screws

FUNCTIONING

- The disc size is to be selected in line with the compressive strength of the insulating material.
- To be combined with anchors, screws or nails corresponding to the available base material.
- DT 90/4 is suitable for pushing on to fischer wall tie VB.

TECHNICAL DATA



HK 36 plastic

HV 36 zinc

ISO-disk 8/60

DT 60/10

DTM-A4

DTM 70/10

DT 90

Item	Art.-No.	Disc Ø [mm]	Disc height [mm]	Through hole d _f [mm]	Steel sheet thickness s [mm]	Sales unit [pcs]		
HK 36 plastic	004283	36	4.5	5	—	100		
HV 36 zinc	004286	36	3.5	5	0,7	100		
HA 36 st. st. A4	004285	36	3.5	5	—	100		
ISO-disk 8/60	001680	60	7	8	—	100		
DT 60/10	044317	60	7	10	—	50		
DTM 60/10 A4	088805	60	3	10,5	0,5	100		
DTM 70/10 zinc	044318	70	3	10,5	—	50		
DT 90/4	080957 ¹⁾	90	9.3	4	—	250		
DT 90/8	080958	90	9.3	8,2	—	250		

1) The central hole is adapted in such a way that the disc clamps well on the 4 mm wire of the VB walltie.

The hammer-in plug for a simple, fast and economical installation



Timber substructures



Cable ducts

VERSIONS

- Zinc-plated steel
- Stainless steel

BUILDING MATERIALS

- Concrete
- Solid sand-lime brick
- Building brick
- Natural stone
- Solid brick made from lightweight concrete
- Aerated concrete
- Solid panel made from gypsum
- Vertically perforated brick
- Perforated sand-lime brick
- Hollow blocks made from lightweight concrete

CHARACTERISTICS



ADVANTAGES

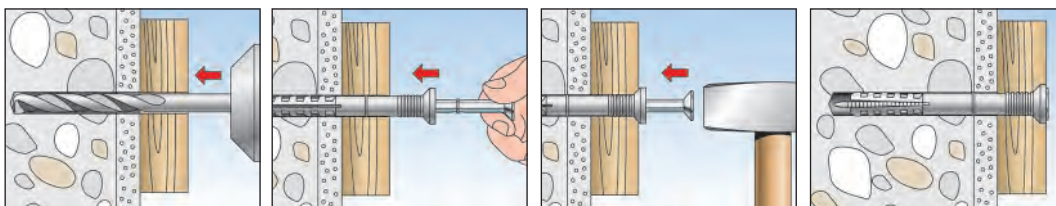
- The rapid hammerset installation reduces the amount of time required and allows for an economic series installation.
- The integrated hammer-in stop prevents the plug from expanding prematurely (jamming), thus enabling a problem-free installation.
- Together with the cross-slot recess, the thread of the nail screw allows the screw to be removed, thus allowing for subsequent dismantling.
- The wide range of diameters, usage lengths and head shapes provides the correct plug for every fixing.

APPLICATIONS

- Substructures made of wood and metal
- Wall connection or plaster profiles
- Slides
- Sheets
- Cable and pipe clips
- Perforated tapes

FUNCTIONING

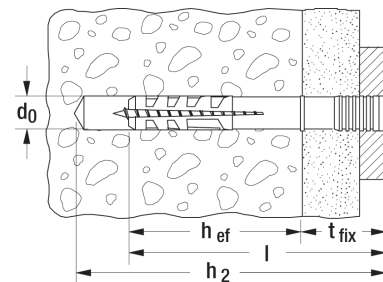
- The Hammerfix N is suitable for push-through installation.
- When hammered in, the nail screw causes the plug to expand in two directions, thus providing a secure anchoring in the building material.
- Countersunk head plugs are recommended for the installation of timber constructions; in the case of metal constructions, use flat-head plugs, and use pan-head plugs for long holes.



TECHNICAL DATA



Hammerfix N-F with cylindrical head and nail



Item	Art.-No.	Drill hole diameter	Effect. anchorage depth	Anchor length	Min. drill hole depth for through fixings	Max. fixture thickness	Drive	Sales unit
		d_0 [mm]	h_{ef} [mm]	l [mm]	h_2 [mm]	t_{fix} [mm]		[pcs]
N 6 x 40/10 F (50)	513837	6	30	40	55	10	PZ2	50
N 6 x 40/10 F (100)	513840	6	30	40	55	10	PZ2	100
N 6 x 40/10 F (200)	513843	6	30	40	55	10	PZ2	200
N 6 x 60/30 F (50)	513838	6	30	60	75	30	PZ3	50
N 6 x 60/30 F (100)	513841	6	30	60	75	30	PZ2	100
N 6 x 60/30 F (200)	513844	6	30	60	75	30	PZ2	200
N 6 x 80/50 F (50)	513839	6	30	80	95	50	PZ3	50
N 6 x 80/50 F (100)	513842	6	30	80	95	50	PZ2	100
N 6 x 80/50 F (200)	513845	6	30	80	95	50	PZ2	200
N 8 x 60/20 F (50)	513697	8	40	60	75	20	PZ3	50
N 8 x 60/20 F (100)	513701	8	40	60	75	20	PZ3	100
N 8 x 80/40 F (50)	513698	8	40	80	95	40	PZ3	50
N 8 x 80/40 F (100)	513702	8	40	80	95	40	PZ3	100
N 8 x 100/60 F (50)	513699	8	40	100	115	60	PZ3	50
N 8 x 100/60 F (100)	513703	8	40	100	115	60	PZ3	100
N 8 x 120/80 F (50)	513700	8	40	120	135	80	PZ3	50
N 8 x 120/80 F (100)	513704	8	40	120	135	80	PZ3	100

LOADS

Hammerfix N

Highest recommended loads¹⁾ for a single anchor
The given loads are valid for screw nails with the specified diameter.

Type		N5	N6 ³⁾	N8	N10
Screw nail diameter	\emptyset [mm]	3,5	4	5	7
Recommended loads in the respective base material F_{rec}²⁾					
Concrete	\geq C20/25 [kN]	0,20	0,25	0,27	0,33
Solid brick	\geq Mz 12 [kN]	0,14	0,18	0,24	0,30
Solid sand-lime brick	\geq KS 12 [kN]	0,18	0,22	0,24	0,33
Solid brick of lightweight aggregate concrete	\geq V 4 [kN]	0,05	0,12	0,15	0,16
Aerated concrete	\geq PB 2 [kN]	0,03	0,04	0,05	0,10
Aerated concrete	\geq PB 4 [kN]	0,07	0,10	0,13	0,16

¹⁾ Required safety factors are considered.

³⁾ The values have to be reduced by 50% for N 6 x 40/7 P K.

²⁾ Valid for tensile load, shear load and oblique load under any angle.

Thermal bridge-free installation in insulation materials



Letterbox



External lighting

BUILDING MATERIALS

- Non-plastered, pressure-resistant insulating boards
- Plastered, pressure-resistant insulating boards
- ETICS insulating boards

ADVANTAGES

- Since the anchor is set exclusively in the insulation itself, fixtures can be installed without thermal bridges.
- The geometry of the FID allows for a simple installation in thin layers of plaster, without the need for pre-drilling, thus saving a stage of installation.
- The FID 50 is used in thin insulating boards from 50mm. The FID 90 is used in thicker insulating boards, and can bear higher loads.
- The bit mounting allows for setting with standard tools, thus allowing for a fast and economic installation.

APPLICATIONS

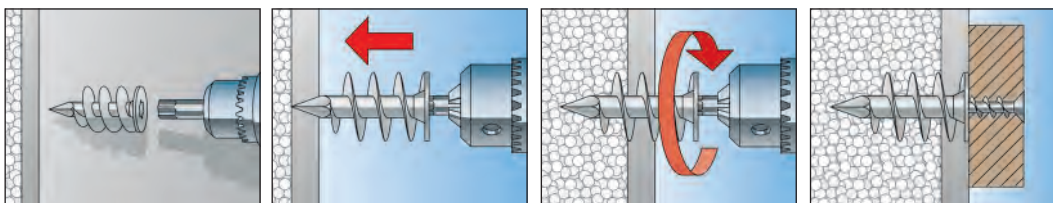
To fix lightweight fixtures in plastered and non-plastered insulating boards made of polystyrene and polyurethane.

The areas of application are:

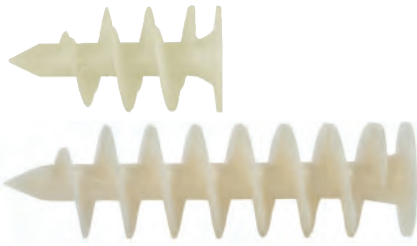
- Façade construction (ETICS)
- Insulating construction
- Electric construction
- Refrigerated and climate construction
- Acoustic construction

FUNCTIONING

- The FID can be set in the insulating board with a cordless screwdriver or by hand.
- The special spiral thread taps itself in the insulating board.
- Fixtures are fixed with a 4.5 mm screw for the FID 50, and with a 6 mm screw for the FID 90.
- Water ingress in the insulation can be prevented by sealing the plug collar with a suitable sealant after successful pre-positioned installation.
- We recommend to predrill an 6 mm hole in ETICS rendering.

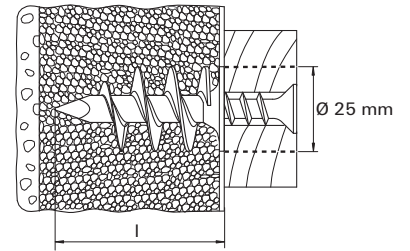


TECHNICAL DATA



Insulation fixing **FID 50**

Insulation fixing **FID 90**



Item	Art.-No.	Anchor length l [mm]	Min. bolt penetration [mm]	Wood and chipboard screws d _s [mm]	Drive	Sales unit [pcs]
FID 50	048213	50	50	4,5 - 5	T40	50
FID 90	510971	90	90	6	6 mm / 6-kt	25

LOADS

Insulation fixing FID

Highest recommended loads¹⁾ for a single anchor.

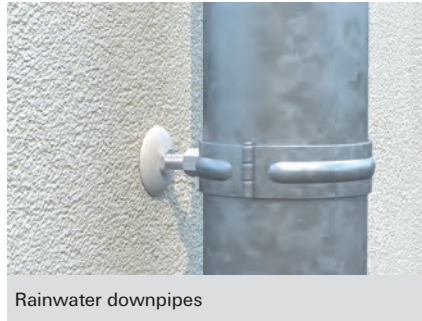
The given loads are valid for chipboard screws with maximum diameter.

Type		FID 50	FID 90
Screw diameter	Ø [mm]	4,5 - 5,0	6,0
Recommended loads in the respective base material N_{rec}²⁾			
Polystyrene	PS 15 [kN]	0,07	0,17
Polystyrene	PS 20 [kN]	0,10	0,20

¹⁾ Required safety factors are considered.

²⁾ Valid for tensile load.

Thermal bridge-free installation of rainwater downpipes in insulation materials



BUILDING MATERIALS

- Polystyrene insulating boards
- Wood fibre insulating boards
- External thermal insulation composite system (ETICS)

ADVANTAGES

- Since the anchor is set exclusively in the insulation itself, fixtures can be installed without thermal bridges. The anchor offers an energy-optimised fixing.
- The hard-centering tip cuts its own way through the plaster, without the need for pre-drilling, thus saving a stage of installation.
- The TX-drive allows for setting with standard tools, thus allowing for a fast and economic installation.

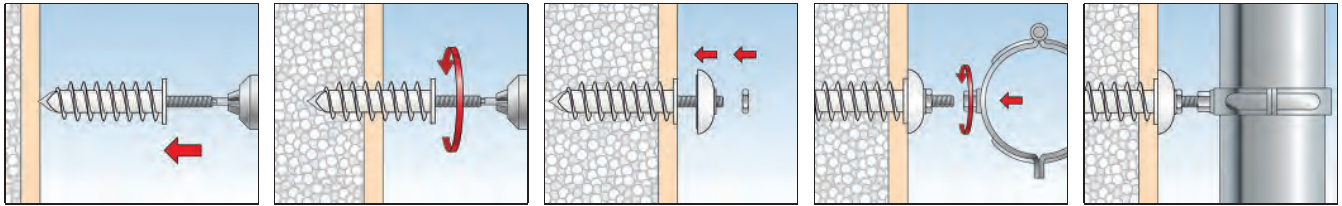
APPLICATIONS

- Thermal bridge-free installation of rainwater downpipes

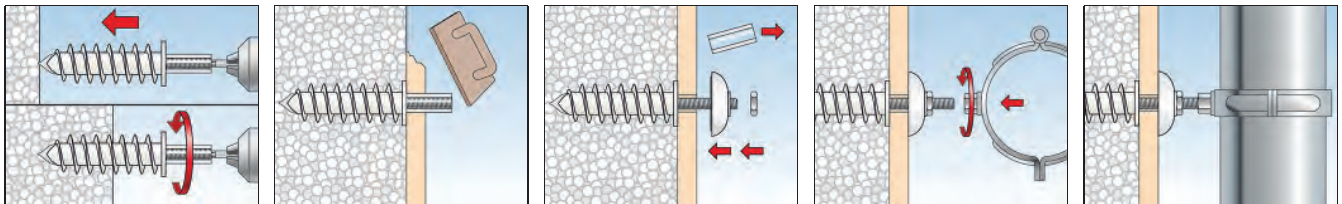
FUNCTIONING

- The installation is carried out without any special tools.
- The spiral thread taps itself in the insulation board.
- For the installation in wood fibre insulating boards a pre-drilling of the insulating board with 16 mm is necessary.
- For the installation before plastering the threaded rod is protected by a tube sleeve.
- The included white covering rosette with glued on PE sealing disc protects again humidity.

INSTALLATION IN PLASTERED INSULATING BOARDS



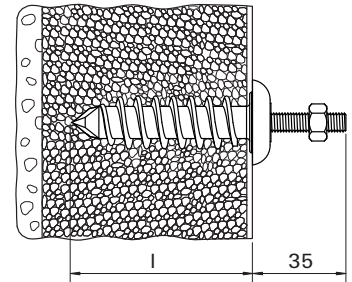
INSTALLATION IN NON-PLASTERED INSULATING BOARDS



TECHNICAL DATA



Insulation fixing FID-R



Item	Art.-No.	Anchor length l [mm]	Min. bolt penetration [mm]	Drive	Thread A	Sales unit [pcs]
FID-R	548404	95	95	T25	M 10	25
FID-R B	548405 ¹⁾	95	95	T25	M 10	1

¹⁾ Plastic bag with 4 x FID-R

LOADS

Insulation fixing FID-R

Highest recommended loads¹⁾ for a single anchor.

Type	FID-R		
Recommended loads in the respective base material N_{rec} ²⁾			
Polystyrene	PS 15	[kN]	0,17
Polystyrene	PS 20	[kN]	0,20

¹⁾ Required safety factors are considered.

²⁾ Valid for tensile load.

The quick façade repair for two-leaf cavity walls



Facing masonry



Repairing outer leaves

VERSIONS

- Zinc-plated steel
- Stainless steel

BUILDING MATERIALS

- Facing masonry with and without an air layer

CERTIFICATES



ADVANTAGES

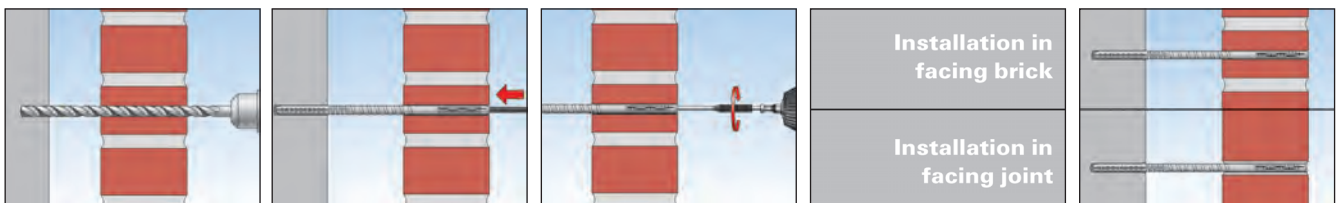
- The approved fixing in stone and in joints from at least 50 mm facing masonry provides a high degree of flexibility and security.
- Use in joints and with a low anchorage depth of just 50 mm allows for a quick and economical installation.
- The small anchor rim and screw head allow for a surface-flush or deep-set installation.
- The drill hole can be retrospectively sealed so that it is no longer visible in the façade.
- A drip coil prevents condensate running into the load-bearing layer, thus preventing frost and corrosive damage.

APPLICATIONS

- VBS-M is especially suitable for applications where external thermal insulation composite systems (ETICS) have been previously installed.
- Retrospective repair of facing masonry.

FUNCTIONING

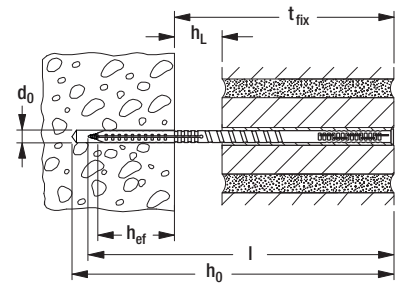
- The remedial wall tie VBS-M is set in the load-bearing layer and into facing masonry using push-through installation.
- In accordance with the approval, no drill hole cleaning is required.
- The two expansion zones in the load-bearing layer and in the facing masonry ensure a secure fixation.
- The plug doesn't fix into the facing masonry until the head grips into the load-bearing layer. This ensures the very best installation safety.



TECHNICAL DATA



Remedial wall tie **VBS-M**



	Zinc-plated steel	Stainless steel	Max. shell distance at 115 mm facing masonry, flush installation	Max. shell distance at 115 mm facing masonry, 20 mm sunk installation	Facing masonry + cavity	Drill diameter	Drill hole depth	Effect. anchorage depth	Anchor length	Sales unit
	Art.-No.	Art.-No.	[mm]	[mm]	t _{fix} [mm]	d ₀ [mm]	h ₀ [mm]	h _{ef} [mm]	l [mm]	[pcs]
Item	gvz	A4								
VBS-M 8 x 120	514243	514236	20*	–	70	8	140	>50	120	100
VBS-M 8 x 185	514244	514237	20	40	135	8	205	>50	185	100
VBS-M 8 x 205	514245	514238	40	60	155	8	225	>50	205	100
VBS-M 8 x 225	514246	514239	60	80	175	8	245	>50	225	100
VBS-M 8 x 245	514247	514240	80	100	195	8	265	>50	245	100
VBS-M 8 x 265	514248	514241	100	120	215	8	285	>50	265	100
VBS-M 8 x 285	514249	514242	120	140	235	8	305	>50	285	100

* Max. 20 mm mortar layer in the case of 50 mm thick economy facing.

The drill hole depth is to be adapted accordingly in the case of sunk installation of the anchor.

ACCESSORIES / DRILLS



Masonry drill bit 8/100/400

Item	Art.-No.	Description	Sales unit [pcs]
SDS Plus IV 8/100/400	517689	fischer Quattric drill bit with SDS fixture and short flute for drilling in concrete	1
Masonry drill bit 8/100/400	517690	fischer masonry drill bit with SDS fixture and short flute, ground sharp, for rotary drilling in perforated brick and in the bed joint	1
SDS Plus II 8/400/460	531785	fischer hammer drill bit for drilling in concrete and in the facing brick	1

ACCESSORIES / BITS



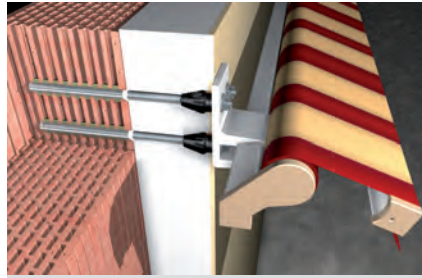
Profi-bit **FPB T**



FPB T 25 PROFI

Item	Art.-No.	Description	Sales unit [pcs]
FPB TX 25/5 long	517693	fischer Profi-Bit long, which can be extended to 50 mm bit, allows for deep setting in stone and in the bed joint	12
FPB T 25 PROFI Bit W 10	533115	fischer Profi-Bit	10

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



Awnings



Satellite dishes and air conditioning units

VERSIONS

- Zinc-plated steel
- Stainless steel

BUILDING MATERIALS

Approved for:

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

CERTIFICATES



ADVANTAGES

- When combined with the injection mortars FIS EM Plus, FIS V, FIS SB and FIS GREEN, the stand-off installation is approved for high loads in a range of materials. This allows for a secure fixing.
- Usable lengths of 62 to 290 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

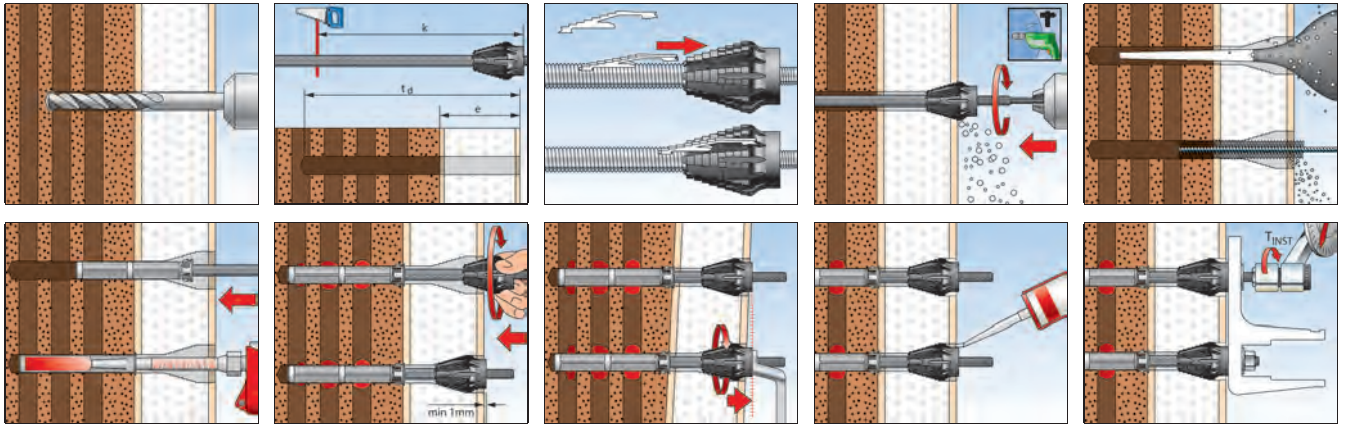
For the thermally separated fixing of:

- Awnings
- Canopies
- French balcony railings
- 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 sealing adhesive KD or construction sealant Premium DKM seals the facade at plaster level.

INSTALLATION



TECHNICAL DATA

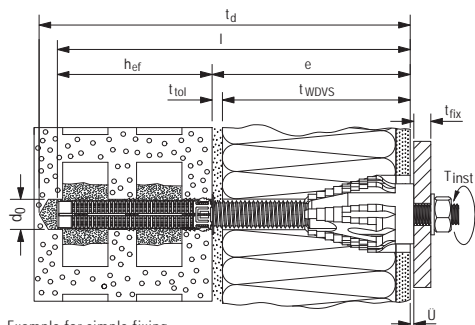


Thermax 12/110 M12

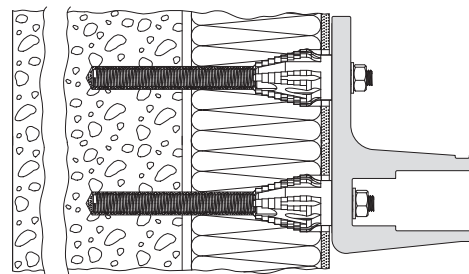
Thermax 16/170 M12

Item	Zinc-plated steel	Stainless steel	Approval DIBt	Contents	Sales unit [pcs]
	Art.-No. gvz	Art.-No. A4			
Thermax 12/110 M12	051291	—	●	20 Thermax M12, 20 perforated sleeves 20 x 130, 5 bits, 5 cutting blades, 5 user manuals	20
Thermax 12/110 M12	—	051537	●	10 Thermax M12 A4, 10 perforated sleeves 20 x 130, 3 bits, 3 cutting blades, 3 user manuals	10
Thermax 12/110 M12 B	051290	—	●	2 Thermax M12, 2 perforated sleeves 20 x 130, 1 bit, 1 cutting blade, 1 user manual	1
Thermax 16/170 M12	051293	—	●	20 Thermax M16, 20 perforated sleeves 20 x 200, 5 bits, 5 cutting blades, 5 applicator tip extension hoses, 5 user manuals	20
Thermax 16/170 M12	—	051543	●	10 Thermax M16 A4, 10 perforated sleeves 20 x 200, 3 bits, 3 cutting blades, 3 applicator tip extension hoses, 3 user manuals	10
Thermax 16/170 M12 B	051292	—	●	2 Thermax M16, 2 perforated sleeves 20 x 200, 1 bit, 1 cutting blade, 1 applicator tip extension hose, 1 user manual	1

INSTALLATION DATA



Example for simple fixing



Example for multiple fixing

Type	Length of Thermax incl. anti-cold cone l [mm]	Threaded rod in building material	Building material + insulation						Fixture			Required resin quantity [Scale unit]
			Building material	Suitable injection anchor sleeve	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]	Max. fixture thickness t _{fix} [mm]	Con-nection thread	Max. installation torque T _{inst} [Nm]	
Thermax M12	240	M12	Concrete		14	70	$h_{ef} + e$	62 - 170	16 ¹⁾	M12	20	5
			Solid brick		14	80	$h_{ef} + e$	62 - 160				6
			Perforated brick	FIS H 20x130 K	20	130	$h_{ef} + e + 10 \text{ mm}$	62 - 110				26
			Aerated concrete		14	100	$h_{ef} + e$	62 - 140				8
Thermax M16	370	M16	Concrete		18	80	$h_{ef} + e$	62 - 290	16 ¹⁾	M12	20	7
			Solid brick		18	80	$h_{ef} + e$	62 - 290				7
			Perforated brick	FIS H 20x200 K	20	200	$h_{ef} + e + 10 \text{ mm}$	62 - 170				40
			Aerated concrete		18	100	$h_{ef} + e$	62 - 270				9

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

TECHNICAL DATA



Epoxy mortar
FIS EM Plus 390 S



Superbond mortar
FIS SB 390 S



Injection mortar
FIS V 360 S



All-round adhesive gluing and sealing
KD-290

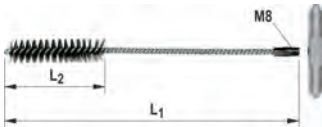


Injection mortar
FIS GREEN 300 T



Construction sealant Premium
DKM WHITE 290ML

Item	Art.-No.	Approval		Languages on the cartridge	Contents	Sales unit
		DIBt	ETA			
FIS EM Plus 390 S	544154	●	■	DE, EN, FR, NL, ES, PT	1 cartridge 390 ml, 2 x FIS MR Plus	6
FIS EM Plus 390 S	544155	●	■	EN, ZH, EL, KO, HU, PL	1 cartridge 390 ml, 2 x FIS MR Plus	6
FIS V 360 S	094404	●	■	DE, FR, NL, TR, HU, AR	1 cartridge 360 ml, 2 x FIS MR Plus	6
FIS V 360 S	094405	●	■	EN, IT, PT, ES, ZH, JA	1 cartridge 360 ml, 2 x FIS MR Plus	6
FIS SB 390 S	519451	●	■	DE, FR, NL	1 cartridge 390 ml, 2 x FIS MR Plus	6
FIS SB 390 S	518831	●	■	EN, ES, PT	1 cartridge 390 ml, 2 x FIS MR Plus	6
FIS GREEN 300 T	522989	—	■	FR	1 cartridge 300 ml, 2 x FIS MR Plus with transparent Clip	4
FIS GREEN 300 T	523245	—	■	IT	1 cartridge 300 ml, 2 x FIS MR Plus with transparent Clip	12
FIS GREEN 300 T	538219	—	■	CS, SK	1 cartridge 300 ml, 2 x FIS MR Plus	12
FIS GREEN 300 T	532972	—	■	DA, SV, NO, FI	1 cartridge 300 ml, 2 x FIS MR Plus with transparent Clip	12
KD WHITE 290ML	059389	—	—	DE, EN	1 cartridge 290 ml	12
DKM-290 ML (DE/EN)	517598	—	—	DE, EN	1 cartridge 290 ml	12



Cleaning brush **BS**

Item	Art.-No.	Length L ₁ [mm]	Length L ₂ [mm]	Brush diameter [mm]	For drill diameter [mm]	Sales unit [pcs]
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	180	80	25	20/22	1



Blow-out pump **AB G**

Item	Art.-No.	Sales unit [pcs]
Blow-out pump ABG	089300	1



Dispenser **FIS DM S**



Item	Art.-No.	Adapted for	Sales unit [pcs]
FIS DM S	511118	Cartridges with 150ml, 300ml, 360ml and 390ml content	1



Cone drill **PBB**



Centring sleeve **PBZ**

Item	Art.-No.	Approval	Match	Contents	Sales unit [pcs]
Cone drill PBB	090634		M8 - M12; FIS E	1x cone drill PBB	1
Centring sleeve PBZ	090671		M8 - M12; FIS E	10x centring sleeve PBZ, 5x injection adapter	10

LOADS

Stand-off installation Thermax 12 and 16 with load-bearing anchor rod made of zinc-plated steel 8.8 and a displacement of 1 mm

The below load table is valid for short-term loading (e.g. wind load). If the sealing of the annular gap between Thermax and plaster is assured by fischer all-round sealing KD, the Thermax version with an anchor rod on base substrate side made of zinc-plated steel may be used. Highest permissible loads^{1) 5) 7)} of a Thermax within an anchor group²⁾ in concrete with the injection mortars FIS V or FIS SB and in masonry with the injection mortar FIS V.

Type	Minimum effective anchorage depth $h_{ef}^{4)8)}$ [mm]	Permissible tensile load $N_{perm}^{3)}$ [kN]	Permissible shear load at $e = 62$ mm $V_{perm}^{3)}$ [kN]	Permissible shear load at $e = 100$ mm $V_{perm}^{3)}$ [kN]	Permissible shear load at $e = 120$ mm $V_{perm}^{3)}$ [kN]	Permissible shear load at $e = 140$ mm $V_{perm}^{3)}$ [kN]	Permissible shear load at $e = 160$ mm $V_{perm}^{3)}$ [kN]	Permissible shear load at $e = 180$ mm $V_{perm}^{3)}$ [kN]	Permissible shear load at $e = 200$ mm $V_{perm}^{3)}$ [kN]	Permissible shear load at $e = 250$ mm $V_{perm}^{3)}$ [kN]	Permissible shear load at $e = 300$ mm $V_{perm}^{3)}$ [kN]	Minimum member thickness h_{min} [mm]	Minimum spacing $s_{min} \parallel / \perp^{9)}$ [mm]	Minimum edge distance c_{min} [mm]
Concrete, cracked and non-cracked, strength class \geq C20/25														
Thermax 12 ⁸⁾	70	3,40 ⁶⁾	1,07	0,69	0,58	0,42	0,32	0,24	0,18	0,08	0,04	100	55	55
Thermax 16 ⁸⁾	80	3,40 ⁶⁾	1,51	0,98	0,83	0,71	0,63	0,48	0,34	0,16	0,08	116	65	65
Solid brick, Mz, EN 771-1; $f_b \geq 12$ N/mm²; $\rho \geq 1,8$ kg/dm³; $L_x W_x H \geq 240 \times 115 \times 71$ mm, NF														
Thermax 12 ⁸⁾	200	2,71	0,85	0,55	0,47	0,40	0,32	0,24	0,18	0,08	0,04	240	80/80	60
Thermax 16 ⁸⁾	200	2,71	1,29	0,98	0,83	0,71	0,63	0,48	0,34	0,16	0,08	240	80/80	60
Solid sand-lime brick, KS, EN 771; $f_b \geq 20$ N/mm²; $\rho \geq 2,0$ kg/dm³; $L_x W_x H \geq 250 \times 240 \times 240$ mm, 8DF														
Thermax 12 ⁸⁾	50	2,86	0,85	0,55	0,47	0,40	0,32	0,24	0,18	0,08	0,04	240	80/80	60
Thermax 16 ⁸⁾	50	2,14	1,51	0,98	0,83	0,71	0,63	0,48	0,34	0,16	0,08	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; $L_x W_x H = 370 \times 240 \times 237$ mm resp. $500 \times 175 \times 237$ mm														
Thermax 12 ⁴⁾	110	1,14	0,57	0,55	0,47	0,40	0,32	0,24	0,18	0,08	0,04	175	100/100	100
Thermax 16 ⁴⁾	110	1,14	0,57	0,57	0,57	0,57	0,57	0,48	0,34	0,16	0,08	175	100/100	100
Perforated sand-lime brick, KSL, EN 771-2; $f_b \geq 12$ N/mm²; $\rho \geq 1,4$ kg/dm³; $L_x W_x H = 240 \times 175 \times 113$ mm, 3DF														
Thermax 12 ⁴⁾	85	1,00	0,85	0,55	0,47	0,40	0,32	0,24	0,18	0,08	0,04	175	100/115	80
Thermax 16 ⁴⁾	85	1,00	1,14	0,98	0,83	0,71	0,63	0,48	0,34	0,16	0,08	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; $L_x W_x H = 362 \times 240 \times 240$ mm														
Thermax 12 ⁴⁾	110	0,43	0,26	0,26	0,26	0,26	0,26	0,24	0,18	0,08	0,04	240	100/240	60
Thermax 16 ⁴⁾	180	0,71	0,26	0,26	0,26	0,26	0,26	0,26	0,26	0,16	0,08	240	100/240	60
Aerated concrete (cylindrical drill hole), EN 771-4; $f_b \geq 2$ N/mm²; $\rho \geq 0,35$ kg/dm³; $L_x W_x H \geq 599 \times 240 \times 249$ mm														
Thermax 12 ⁸⁾	200	1,43	0,43	0,43	0,43	0,40	0,32	0,24	0,18	0,08	0,04	240	80/80	100
Thermax 16 ⁸⁾	200	1,43	0,43	0,43	0,43	0,43	0,43	0,43	0,34	0,16	0,08	240	80/80	100

For the design the complete approval Z-21.8-1837 as well as the European Technical Assessments ETA-10/0383, ETA-02/0024 or ETA-12/0258 have to be considered.

¹⁾ 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.

²⁾ Set-up of one or more Thermax 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.

³⁾ For combinations of tensile and shear loads as well as reduced edge distances or spacings (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. 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 $a_j = 0,75$. 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 $t_{fix} = 6$ mm.

⁴⁾ In vertically perforated bricks HLz, perforated sand-lime bricks KSL as well as hollow blocks made of light weight concrete Hbl the Thermax 12 (standard version) can bridge non-load bearing layers up to 110 mm and the Thermax 16 can bridge them up to 170 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.

⁵⁾ 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 steel grade 8.8 - for other steel grades or stainless steel see approval.

⁶⁾ Complies with the permissible tensile load of the Thermax Cone.

⁷⁾ Intermediate values of the shear load may be linearly interpolated in dependence of "e", if nothing else is mentioned in the approval.

⁸⁾ In solid bricks Mz and solid sand-lime bricks KS the Thermax 12 (standard version) can bridge non-load bearing layers up to 190 mm (140 mm in aerated concrete) and the Thermax 16 can bridge them up to 300 mm (270 mm in aerated concrete) - but in solid brick Mz and aerated concrete the above load values have to be reduced. In concrete the Thermax 12 (standard version) can bridge non-loadbearing layers up to 170 mm and the Thermax 16 can bridge them up to 290 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.

⁹⁾ Minimum spacings for at the same time reduced permissible loads, where required.

LOADS

Stand-off installation Thermax 12 and 16 with load-bearing anchor rod made of stainless steel A4-70 and a displacement of 3 mm

The below load table is valid for short-term loading (e.g. wind load). Measures for sealing see approval, section 3.2.4.

Highest permissible loads^{1) 5) 7)} of a Thermax within an anchor group²⁾ in concrete with the injection mortars FIS V or FIS SB and in masonry with the injection mortar FIS V.

Type	Minimum effective anchorage depth $h_{ef}^{4)8)}$ [mm]	Permissible tensile load $N_{perm}^{3)}$ [kN]	Permissible shear load at $e = 62$ mm $V_{perm}^{3)}$ [kN]	Permissible shear load at $e = 100$ mm $V_{perm}^{3)}$ [kN]	Permissible shear load at $e = 120$ mm $V_{perm}^{3)}$ [kN]	Permissible shear load at $e = 140$ mm $V_{perm}^{3)}$ [kN]	Permissible shear load at $e = 160$ mm $V_{perm}^{3)}$ [kN]	Permissible shear load at $e = 180$ mm $V_{perm}^{3)}$ [kN]	Permissible shear load at $e = 200$ mm $V_{perm}^{3)}$ [kN]	Permissible shear load at $e = 250$ mm $V_{perm}^{3)}$ [kN]	Permissible shear load at $e = 300$ mm $V_{perm}^{3)}$ [kN]	Minimum member thickness h_{min} [mm]	Minimum spacing $s_{min} \parallel / \perp$ [mm]	Minimum edge distance c_{min} [mm]
Concrete, cracked and non-cracked, strength class $\geq C20/25$														
Thermax 12 ⁸⁾	70	3,40 ⁵⁾	1,07	0,69	0,58	0,50	0,44	0,39	0,35	0,24	0,12	100	55	55
Thermax 16 ⁸⁾	80	3,40 ⁵⁾	1,51	0,98	0,83	0,71	0,63	0,56	0,51	0,41	0,24	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 12 ⁸⁾	200	2,71	0,59	0,39	0,33	0,28	0,25	0,22	0,20	0,16	0,12	240	80/80	60
Thermax 16 ⁸⁾	200	2,71	1,29	0,96	0,81	0,70	0,62	0,56	0,50	0,41	0,24	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 12 ⁸⁾	50	2,86	0,59	0,39	0,33	0,28	0,25	0,22	0,20	0,16	0,12	240	80/80	60
Thermax 16 ⁸⁾	50	2,14	1,46	0,96	0,81	0,70	0,62	0,56	0,50	0,41	0,24	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 12 ⁴⁾	110	1,14	0,57	0,39	0,33	0,28	0,25	0,22	0,20	0,16	0,12	175	100/100	100
Thermax 16 ⁴⁾	110	1,14	0,57	0,57	0,57	0,57	0,57	0,56	0,50	0,41	0,24	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 12 ⁴⁾	85	1,00	0,59	0,39	0,33	0,28	0,25	0,22	0,20	0,16	0,12	175	100/115	80
Thermax 16 ⁴⁾	85	1,00	1,14	0,96	0,81	0,70	0,62	0,56	0,50	0,41	0,24	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 12 ⁴⁾	110	0,43	0,26	0,26	0,26	0,26	0,25	0,22	0,20	0,16	0,12	240	100/240	60
Thermax 16 ⁴⁾	180	0,71	0,26	0,26	0,26	0,26	0,26	0,26	0,26	0,26	0,24	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 12 ⁸⁾	200	1,43	0,43	0,39	0,33	0,28	0,25	0,22	0,20	0,16	0,12	240	80/80	100
Thermax 16 ⁸⁾	200	1,43	0,43	0,43	0,43	0,43	0,43	0,43	0,43	0,41	0,24	240	80/80	100

For the design the complete approval Z-21.8-1837 as well as the European Technical Assessments ETA-10/0383, ETA-02/0024 or ETA-12/0258 have to be considered.

- ¹⁾ 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.
- ²⁾ Set-up of one or more Thermax 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.
- ³⁾ For combinations of tensile and shear loads as well as reduced edge distances or spacings (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. 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 $a_j = 0,75$. 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 $t_{fix} = 6$ mm.
- ⁴⁾ In vertically perforated bricks HLz, perforated sand-lime bricks KSL as well as hollow blocks made of light weight concrete Hbl the Thermax 12 (standard version) can bridge non-load bearing layers up to 110 mm and the Thermax 16 can bridge them up to 170 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.
- ⁵⁾ 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 A4-70.
- ⁶⁾ Complies with the permissible tensile load of the Thermax Cone.
- ⁷⁾ Intermediate values of the shear load may be linearly interpolated in dependence of "e", if nothing else is mentioned in the approval.
- ⁸⁾ In solid bricks Mz and solid sand-lime bricks KS the Thermax 12 (standard version) can bridge non-load bearing layers up to 190 mm (140 mm in aerated concrete) and the Thermax 16 can bridge them up to 300 mm (270 mm in aerated concrete) - but in solid brick Mz and aerated concrete the above load values have to be reduced. In concrete the Thermax 12 (standard version) can bridge non-loadbearing layers up to 170 mm and the Thermax 16 can bridge them up to 290 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.
- ⁹⁾ Minimum spacings for at the same time reduced permissible loads, where required.

The economical solution for the repair of triple-skin outer wall panels



VERSIONS

- Stainless steel

BUILDING MATERIALS

- Triple-skin outer wall panels made of concrete \geq C12/15

CERTIFICATES



ADVANTAGES

- The FWS II achieves a high shear load-bearing capacity due to its large anchor diameter. This reduces the number of reconstruction anchors needed for each plate to a minimum, thus saving costs.
- The drill hole can be drilled in one step using standard diamond drill bits. This ensures quick progress is made.
- Installation is already approved from a sub-base thickness \geq 80 mm.
- Approval with a new measuring strategy allows a safer and economically static calculation while making it possible to document loads from temperature changes.

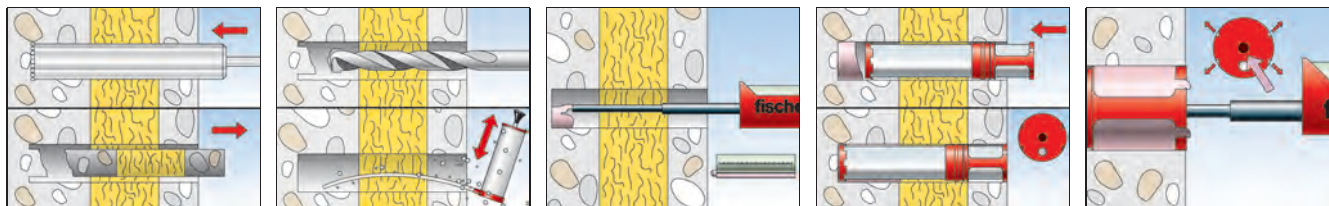
APPLICATIONS

- For post-installation securing of triple-skin outer wall panels
- Strengthening outer wall panels for additional exterior insulation

FUNCTIONING

- The FWS II weather facing reconstruction anchors can be bedded in mortar into the load-bearing skin and weather shell with the FIS V, FIS VW or FIS VS injection mortar.
- The red plastic coating protects the insulation from being penetrated with mortar.
- You can see the correct anchor filling with the weather shell through the inspection openings on the head of the anchor.

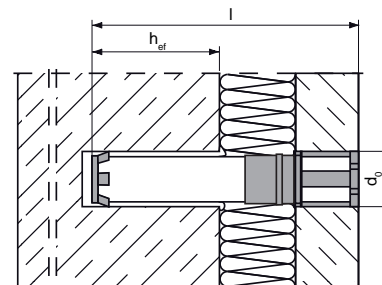
INSTALLATION IN TRIPLE-SKIN OUTER WALL PANELS WITH FIS V AND FWS II-A



TECHNICAL DATA



Weather facing reconstruction system
FWS II - A



Item	Art.-No.	Approval DIBt	Total length	Nom. drill diameter	Effect. anchorage depth in the load-bearing skin	Anchors per cartridge FIS V / FIS VS / FIS VW 360 ml	Sales unit
			l [mm]	d ₀ [mm]	h _{ef} [mm]		[pcs]
FWS II - A 180	532883	●	180	40 - 41	70	5	5
FWS II - A 205	532884	●	205	40 - 41	70	5	5
FWS II - A 230	532885	●	230	40 - 41	70	5	5

TECHNICAL DATA



Injection mortar **FIS V 360 S**

Item	Art.-No.	Approval		Languages on the cartridge	Scale unit	Contents	Sales unit
		DIBt	ETA				[pcs]
FIS V 360 S	094404	●	■	DE, FR, NL, TR, HU, AR	180	1 cartridge 360 ml, 2 x FIS MR Plus	6
FIS DM S	511118	—	—	—	—	—	1

LOADS

Weather facing reconstruction system FWS II

Highest permissible shear loads^{1) 5)} for a single anchor in a load-bearing skin made of concrete ≥ C12/15.

For the design the complete approval Z-2 1.8-2029 has to be considered.

Type	Effective anchorage depth in the load bearing skin h _{ef} ≥ [mm]	Thickness of load-bearing layer h _T ≥ [mm]	Thickness of thermal insulation ²⁾ h _D ≤ [mm]	Thickness of outer leaf h _w ≥ [mm]	Permissible bending moment M _{perm} [Nm]	Cracked or non-cracked concrete	
						Permissible shear load ⁴⁾ V _{perm} [kN]	Minimum edge distance ³⁾ c _{min} (c _w , c _T) [mm]
FWS II - A 180	70	80	70	40	1310	11,5	150
FWS II - A 205	70	80	95	40	1310	9,5	150
FWS II - A 230	70	80	120	40	1310	8,1	150

¹⁾ Required safety factors are considered. The given loads are valid under the pre-condition that an additional thermal insulation will be applied on the weather facing.

²⁾ For bigger insulation thicknesses special lengths are possible.

³⁾ For exact arrangement of the bolts as well as for eventually needed additional proofs see approval.

⁴⁾ The determination of the permissible shear load for special lengths is done according Annex 3 and 4 of the approval.

⁵⁾ 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 to approval.

Fixing selection by usage category

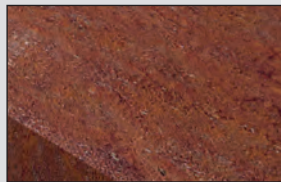
The most common building materials are classified by usage category in line with ETAG 014. This makes it easier to choose the most suitable fixing.

Usage category A

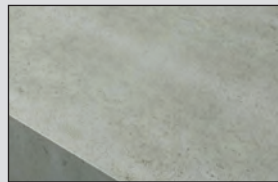


Concrete

Usage category B



Solid brick



Solid sand-lime brick



Solid lightweight concrete blocks

Usage category C



Vertically perforated brick



Perforated sand-lime brick



Hollow blocks made from lightweight concrete

Usage category D



Lightweight aggregate concrete

Usage category E



Aerated concrete

6

Selecting the fixing length

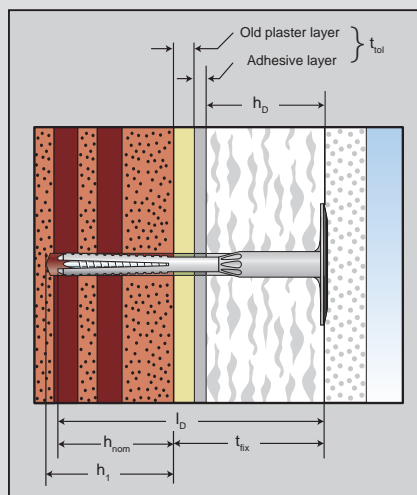
Correctly calculating the fixing length is key to achieving the greatest possible fixing safety. The specific characteristics of the job in hand must always be taken into account

Determination of the required fixing length:

- Anchorage depth h_{nom}
- + Tolerance compensation t_{tol}
- + Insulation thickness h_D
- = **Required fixing length l_D**

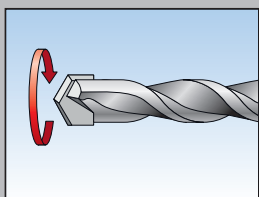
The tolerance compensation comprises the following:

- Non-load-bearing layers (thickness of old plaster, HWL panels, economy facings, etc.)
- + Thickness of the adhesive mortar layer after pressing the insulation boards onto the wall (generally approx. 10 mm)
- + Additional compensation for uneven surface
- = **Tolerance compensation t_{tol}**

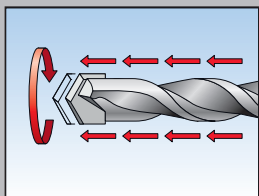


- h_{nom} Anchorage depth
- h_1 Drill hole depth
- t_{fix} Usage length
- t_{tol} Tolerance compensation
- h_D Insulation thickness
- t_{tol} Tolerance compensation
- l_D Required fixing length

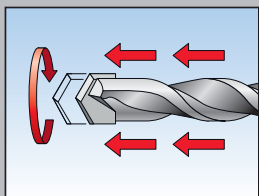
Drilling



Rotary drilling



Impact drilling



Hammer drilling

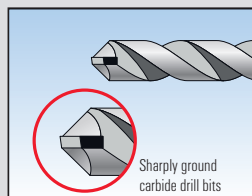
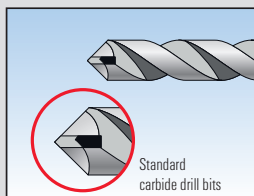
The building material is decives when drilling. Four methods are available:

Rotary drilling: Drilling in rotary mode without impact, with a sharply ground carbide drill bit. For perforated bricks and materials with low strength, the drill hole does not become too large with it and the bars in the perforated bricks do not break.

Carbide drill bits drill faster if they are ground sharp, similar to steel drill bits. There are also special masonry drill bits available.

Impact drilling: Rotation and a high number of light impacts with the impact drilling machine, for solid building materials with dense structure.

Hammer drilling: Rotation and a small number of minor impacts with high impact energy with the drilling hammer, also for solid building materials with dense structure.



► Expert tip

- For almost all permissible fixings, **rotary drillings and hammer drillings are prescribed** in the approval or guideline.
- **Do not use drills with excessively worn out cutting edge width across corners anymore** (see rules of approval).
- The **drill hole depth** is always specified exactly and based on a definite thickness of the anchoring base. The following rule of thumb is followed for general applications without approval: Necessary thickness of the anchoring base = drill hole depth + 30 mm.
- To avoid tilting of the fixture, it must always be drilled **perpendicular** to the anchoring base. Exceptional cases are regulated in the anchor approvals and/or the manufacturer's specifications (**up to 5 ° is tolerable**).

Our service to you

„We are a reliable partner, one that will stand at your side and address your individual requirements with advice and action.“

By implementing the fischer process system (fPS) we offer you the quickest and most efficient service.



Global presence with the fischer international sales team

- One-on-one assistance from multi lingual staff.
- Immediate information and individual solutions regarding the widest range of fixings and fasteners worldwide.
- 46 own subsidiaries and distribution to more than 100 countries worldwide.
- Visit organization A-Z and training programs.

✉ Please contact: export@fischer.de



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Qualified technical consulting from the fischer technical team

- Support for engineers, consultants and craftsmen.
- More than 130 engineers worldwide give legally compliant technical advice and product recommendations.
- Services include test installations, pull-out tests, individual designs and comparative calculations.
- Special solutions in the scope of fixing technology.

✉ Please contact: anwendungstechnik@fischer.de



Competence and innovation through own research, development and production

- Market research of trends and customer requirements.
- Own research and development teams for chemical, steel and plastic fastenings.
- In-house tool making, special machine construction and production facilities for total process control.
- fischer Process System (FPS) ensures innovative and high quality products.



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Wide range of fastening and supplementary products for professional and DIY customers

- Comprehensive assortment of chemical, steel and plastic fastenings.
- Supplementary ranges of installation systems, construction chemicals, wood screws, drill bits, facade systems etc.
- Broadest coverage of applications.
- Standard products, project-based solutions and customer-specific developments.



➤ Discover our product range:
www.fischer.com/products





Professional training sessions in the fischer academy

- Wide range of seminars for craftsmen, engineers and specialist dealers.
- Fixing technology at its best based on over 30 years of training experience.
- Theoretical knowledge and practical exercises in line with the demands of the approval.
- Full service programme in modern training rooms, including accomodation.

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📍 You can find more details on:
www.fischer.de/Seminare

FIXPERIENCE design and construction software for demanding applications

- Design software for planners and structural engineers.
- Modular program including engineering software and application modules.
- Based on international design standards (ETAG 001, EC1, EC2, EC3, EC5), including national application documents.
- Free choice of all common power and measurement units.
- Graphical representation in 3D, 2D, move, 360° rotate, pan, tilt, zoom.



📄 Download your free software from:
www.fischer.com/fixperience



Anchor Pull-out tests by the technical field service of fischer

- We recommend for safety-relevant fixings in unknown or old substrates plug pull-out tests to do.
- This allows statements to be made about the bearing capacity of the subsoil and the selection of a suitable anchor.

Your advantage - Individual solutions from fischer

- fischer is at your disposal for questions or problems with fixings at any time with first class service aside.
- Our consultation is the basis for the selection of the safest, most economical and above all optimal solution for your very individual task.

Our service

- Advice and tensile tests on site by our technical field service
- Tensile tests with calibrated test equipment
- Determination of load values
- Provision of the test report
- Evaluation of the test results and recommendation on the appropriate fixing solutions.



The information in this brochure is intended for general guidance only and is given without engagement. Additional information and advice on specific applications is available from our Technical Support Team. For this however, we require a precise description of your particular application. All the data in this brochure concerning work with our fixing elements must be adapted to suit local conditions and the type of materials in use.

If no detailed performance specifications are given for certain articles and types, please contact our Technical Service Department for advice.

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We cannot be responsible for any errors, and we reserve the right to make technical and range modifications without notice. No liability is accepted for printing errors and omissions.

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Your dealer



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