EiSYS-2

Façade/adjusting screw

bauaufsichtlich
Zulassungs-Nr.
beantragt

Compare the idea of thermal insulation with a hot-air balloon!

The principle is simple. In a hot-air balloon, the burner blows hot air into the envelope above. The hot air wants to escape upwards but cannot escape from the envelope.
It therefore lifts the balloon along with the attached load – and the balloon flies! But this flight only lasts until the air cools down, and it cools quite quickly because of the balloon's relatively thin skin.
Hot air must be added to the balloon to allow it to continue flying.

A similar principle applies to buildings

The heated room air that wants to escape through the building shell to the outside world is subject to the principle of heat conduction and convection. The warm air from the room wants to mix with the cold outside air until a temperature equilibrium is reached between inside and outside air – i.e. until it becomes cold inside the building. The better the construction material conducts heat and the more the building shell leaks heat, the faster this process will happen. Continuous heating is required to keep the indoor air at room temperature. This leads to high energy costs.

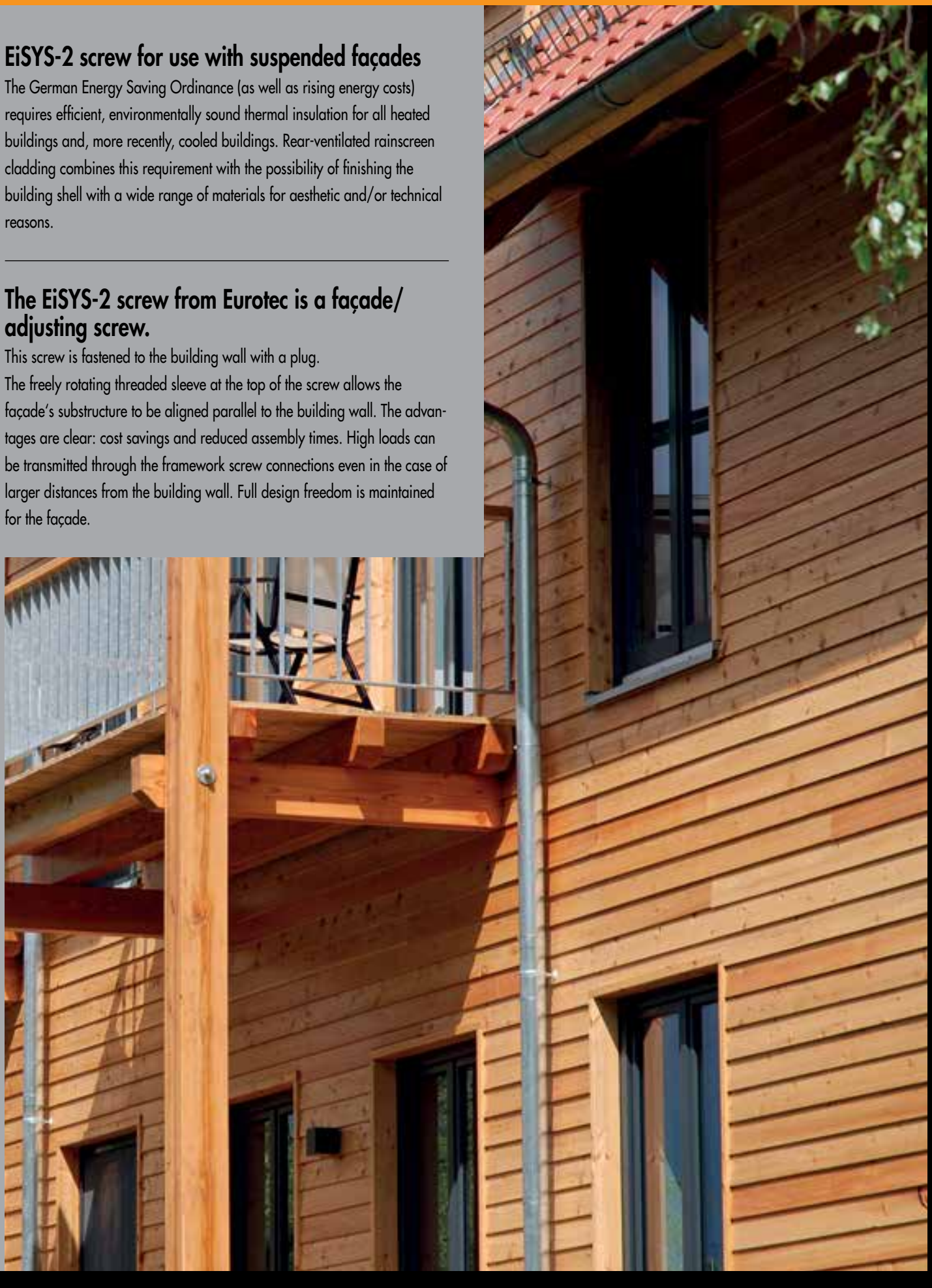
Solution:
The outer walls must be insulated to keep the wasted energy to a minimum. This can be achieved with composite thermalinsulation systems with an exterior plaster or with an insulated, rear-ventilated façade. The latter is used if you want to decorate the exterior wall with timber cladding, fibre-cement boards or other façade elements.
This is where the EiSYS-2 screw is used.

EiSYS-2 screw for use with suspended façades

The German Energy Saving Ordinance (as well as rising energy costs) requires efficient, environmentally sound thermal insulation for all heated buildings and, more recently, cooled buildings. Rear-ventilated rainscreen cladding combines this requirement with the possibility of finishing the building shell with a wide range of materials for aesthetic and/or technical reasons.

The EiSYS-2 screw from Eurotec is a façade/ adjusting screw.

This screw is fastened to the building wall with a plug.
The freely rotating threaded sleeve at the top of the screw allows the façade's substructure to be aligned parallel to the building wall. The advantages are clear: cost savings and reduced assembly times. High loads can be transmitted through the framework screw connections even in the case of larger distances from the building wall. Full design freedom is maintained for the façade.



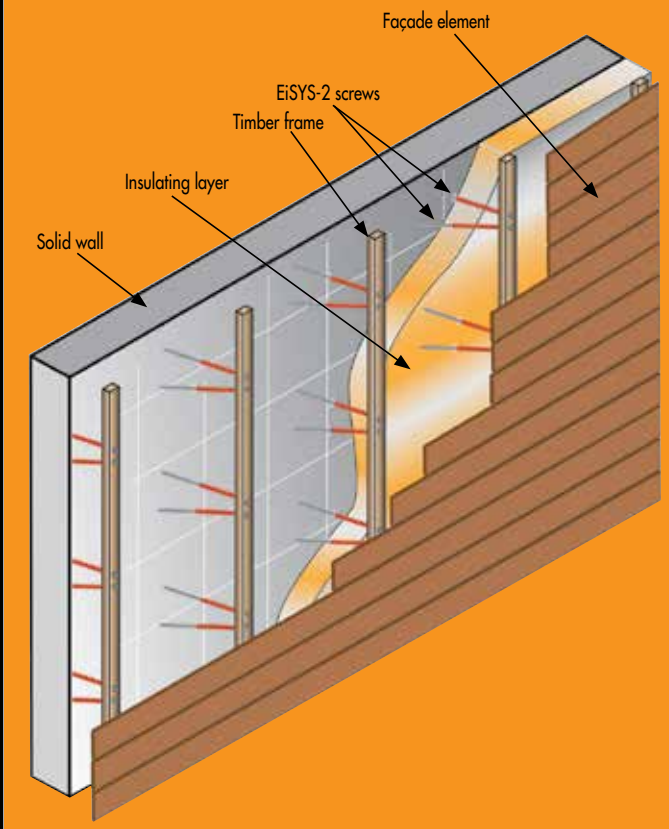
EiSYS-2

Façade/adjusting screw

Art. no.	Dimensions (mm)	For insulation thicknesses[a] up to	PU
945935	7,2 x 198 II	60 mm	50
945925	7,2 x 218 II	80 mm	50
945926	7,2 x 238 II	100 mm	50
945927	7,2 x 258 II	120 mm	50
945928	7,2 x 278 II	140 mm	50
945929	7,2 x 298 II	160 mm	50
945474	7,2 x 318 II	180 mm	50
945930	7,2 x 338 II	200 mm	50
945931	7,2 x 358 II	220 mm	50
945932	7,2 x 378 II	240 mm	50
945933	7,2 x 398 II	260 mm	50
945934	7,2 x 418 II	280 mm	50

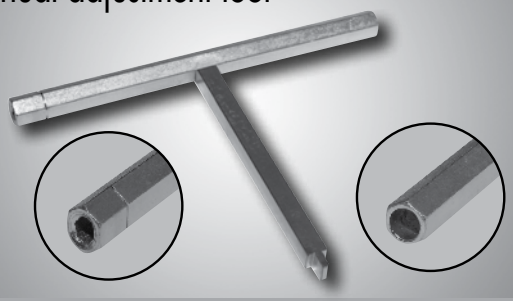
a) And for a counter-batten thickness of 40 mm

Example application:
The V-shaped arrangement of the EiSYS-2 screw pair achieves optimum stability and load capacity of the façade construction.



EiSYS-2

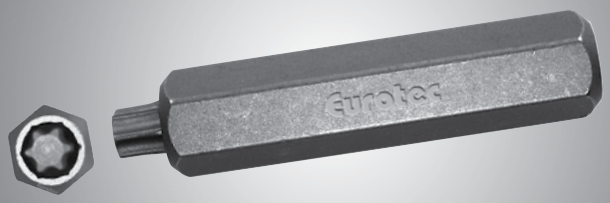
manual adjustment tool



Art. no.	Dimensions (mm)	PU
111828	10,0 x 150/115	pieces

EiSYS-2

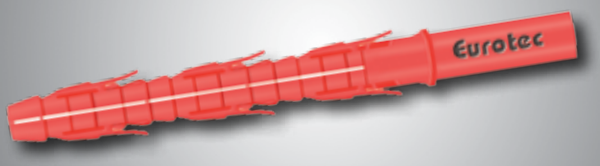
bit



Art. no.	Dimensions (mm)	Drive	PU
945936	10,0 x 50	TX30 ●	pieces

Plug

for EiSYS-2 screws



Art. no.	Dimensions (mm)	Type	PU
945404	10,0 x 130	B 10 H	200

Calculating the number of EiSYS-2 screw pairs per m² - counter batten 40x60 mm²
EiSYS-2 screws are always used in pairs. See system diagram.

Wind pressure w_k = 0,30 kN/m², w_d = 1,5 · d

Insulating-material thickness (mm)	EiSYS-2 Screw	Unladen weight of the façade					
		5 kg/m²	10 kg/m²	15 kg/m²	20 kg/m²	25 kg/m²	30 kg/m²
80	7,2 x 218	0,45	0,86	1,26	1,67	2,08	2,48
100	7,2 x 238	0,54	1,04	1,54	2,04	2,54	3,04
120	7,2 x 258	0,64	1,23	1,82	2,42	3,01	3,60
140	7,2 x 278	0,73	1,42	2,10	2,79	3,48	4,16
160	7,2 x 298	0,82	1,60	2,38	3,16	3,94	4,72
180	7,2 x 318	0,92	1,79	2,66	3,54	4,41	5,28
200	7,2 x 338	1,01	1,98	2,94	3,91	4,88	5,84
220	7,2 x 358	1,11	2,17	3,23	4,29	5,35	6,41

Wind pressure w_k = 0,60 kN/m², w_d = 1,5 · d

Insulating-material thickness (mm)	EiSYS-2 Screw	Unladen weight of the façade					
		5 kg/m²	10 kg/m²	15 kg/m²	20 kg/m²	25 kg/m²	30 kg/m²
80	7,2 x 218	0,75	0,90	1,31	1,72	2,12	2,53
100	7,2 x 238	0,75	1,09	1,59	2,09	2,59	3,09
120	7,2 x 258	0,75	1,28	1,87	2,46	3,06	3,65
140	7,2 x 278	0,78	1,46	2,15	2,84	3,52	4,21
160	7,2 x 298	0,87	1,65	2,43	3,21	3,99	4,77
180	7,2 x 318	0,96	1,84	2,71	3,58	4,46	5,33
200	7,2 x 338	1,06	2,02	2,99	3,96	4,92	5,89
220	7,2 x 358	1,15	2,21	3,27	4,33	5,39	6,45

Wind pressure w_k = 0,90 kN/m², w_d = 1,5 · d

Insulating-material thickness (mm)	EiSYS-2 Screw	Unladen weight of the façade					
		5 kg/m²	10 kg/m²	15 kg/m²	20 kg/m²	25 kg/m²	30 kg/m²
80	7,2 x 218	1,13	1,13	1,35	1,76	2,17	2,57
100	7,2 x 238	1,13	1,13	1,63	2,13	2,63	3,13
120	7,2 x 258	1,13	1,32	1,91	2,51	3,10	3,69
140	7,2 x 278	1,13	1,51	2,19	2,88	3,57	4,25
160	7,2 x 298	1,13	1,69	2,47	3,25	4,03	4,81
180	7,2 x 318	1,13	1,88	2,75	3,63	4,50	5,37
200	7,2 x 338	1,13	2,07	3,03	4,00	4,97	5,93
220	7,2 x 358	1,20	2,26	3,32	4,38	5,44	6,50

Wind pressure w_k = 1,20 kN/m², w_d = 1,5 · d

Insulating-material thickness (mm)	EiSYS-2 Screw	Unladen weight of the façade					
		5 kg/m²	10 kg/m²	15 kg/m²	20 kg/m²	25 kg/m²	30 kg/m²
80	7,2 x 218	1,50	1,50	1,50	1,81	2,21	2,62
100	7,2 x 238	1,50	1,50	1,68	2,18	2,68	3,18
120	7,2 x 258	1,50	1,50	1,96	2,55	3,15	3,74
140	7,2 x 278	1,50	1,55	2,24	2,93	3,61	4,30
160	7,2 x 298	1,50	1,74	2,52	3,30	4,08	4,86
180	7,2 x 318	1,50	1,93	2,80	3,67	4,55	5,42
200	7,2 x 338	1,50	2,11	3,08	4,05	5,01	5,98
220	7,2 x 358	1,50	2,30	3,36	4,42	5,48	6,54

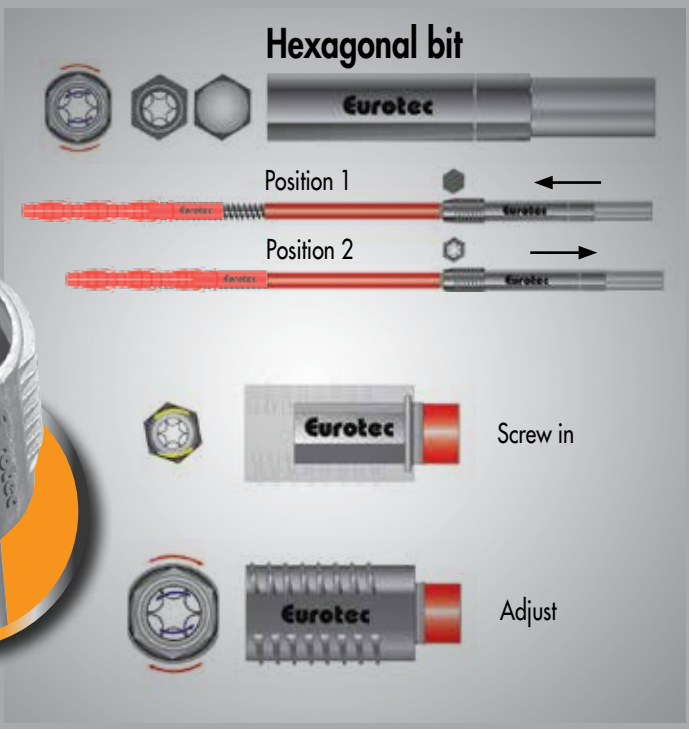
Please note: The stated values are planning aids. Projects must only be calculated by authorised persons.

EiSYS-2 façade/adjusting screw

This screw is used to fasten façades in place.
Insulation thicknesses of 80–280 mm can be handled easily with the EiSYS-2 screw from Eurotec.

Adjustment sleeve

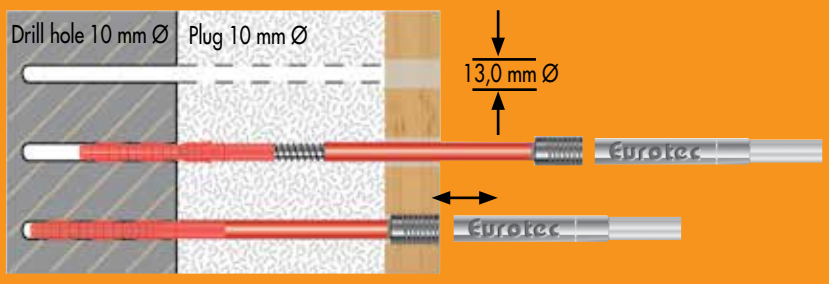
The EiSYS-2 screw is fitted with a freely rotating adjustment sleeve/head that allows the space between the brickwork and the substructure to be tailored to your needs. A hexagonal bit is supplied as an accessory. This is used to screw the screw into the subsurface, as well as to adjust the substructure with the adjustment head.

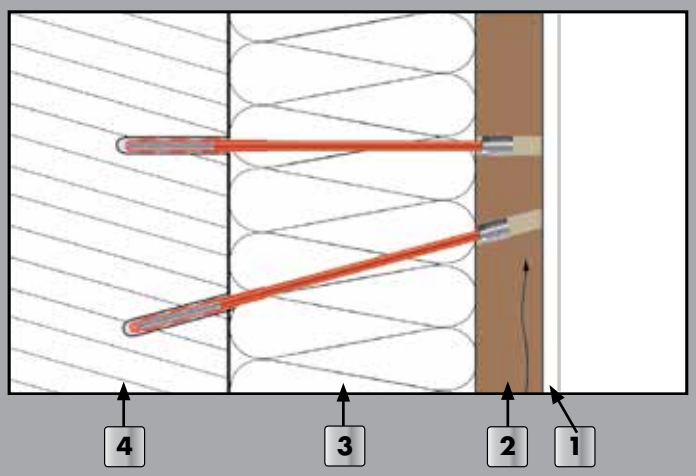


This is how it's done!

The principle is as ingenious as it is simple. Once the insulation is attached to the exterior wall, the counter batten is pilot-drilled to a diameter of 13 mm in accordance with the system. A hole of 10 mm diameter is then drilled within this hole through the insulation and into the subsurface to create the hole for the plug. The plug is attached to the adjusting screw and the two are then inserted into the prepared drill hole through the counter batten and the insulation

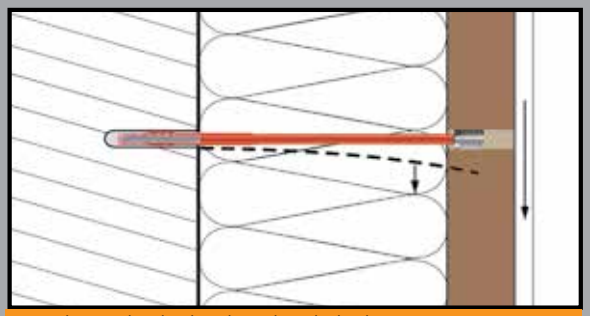
The EiSYS-2 façade/adjusting screw is screwed in completely in Position 1 using the hexagonal bit until the adjustment head also lies within the counter batten.
Now, the screw is simply pulled out to Position 2 using the hexagonal bit and the spacing between the brickwork and the counter batten is adjusted.





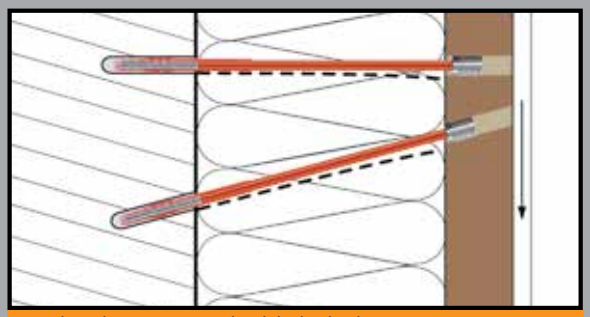
Example of a rear-ventilated façade (EiSYS-2 system diagram)

1. Façade element
2. Timber frame (min. 40x60 mm²)
3. Insulating layer
4. Brickwork (EiSYS fixing depth = 90 mm)

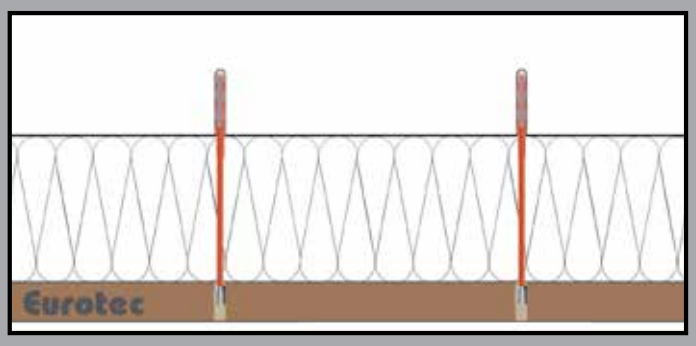


A single screw bends relatively easily under loading (F)

To increase the rigidity of the EiSYS-2 system, the adjusting screws are installed in pairs and in a V shape. This creates a framework screw connection. The framework principle consists of creating a large number of rigid triangles (see diagram) from multiple relatively pliable screws installed perpendicular to the wall.
For the same load, these triangles exhibit a much lower deflection than screws that are simply screwed in perpendicular to the wall.



A V-shaped screw pair can absorb higher loads



Example of a suspended ceiling

The Eisys-2's adjustment function can, of course, also be used in other applications, e.g. for a suspended ceiling.