

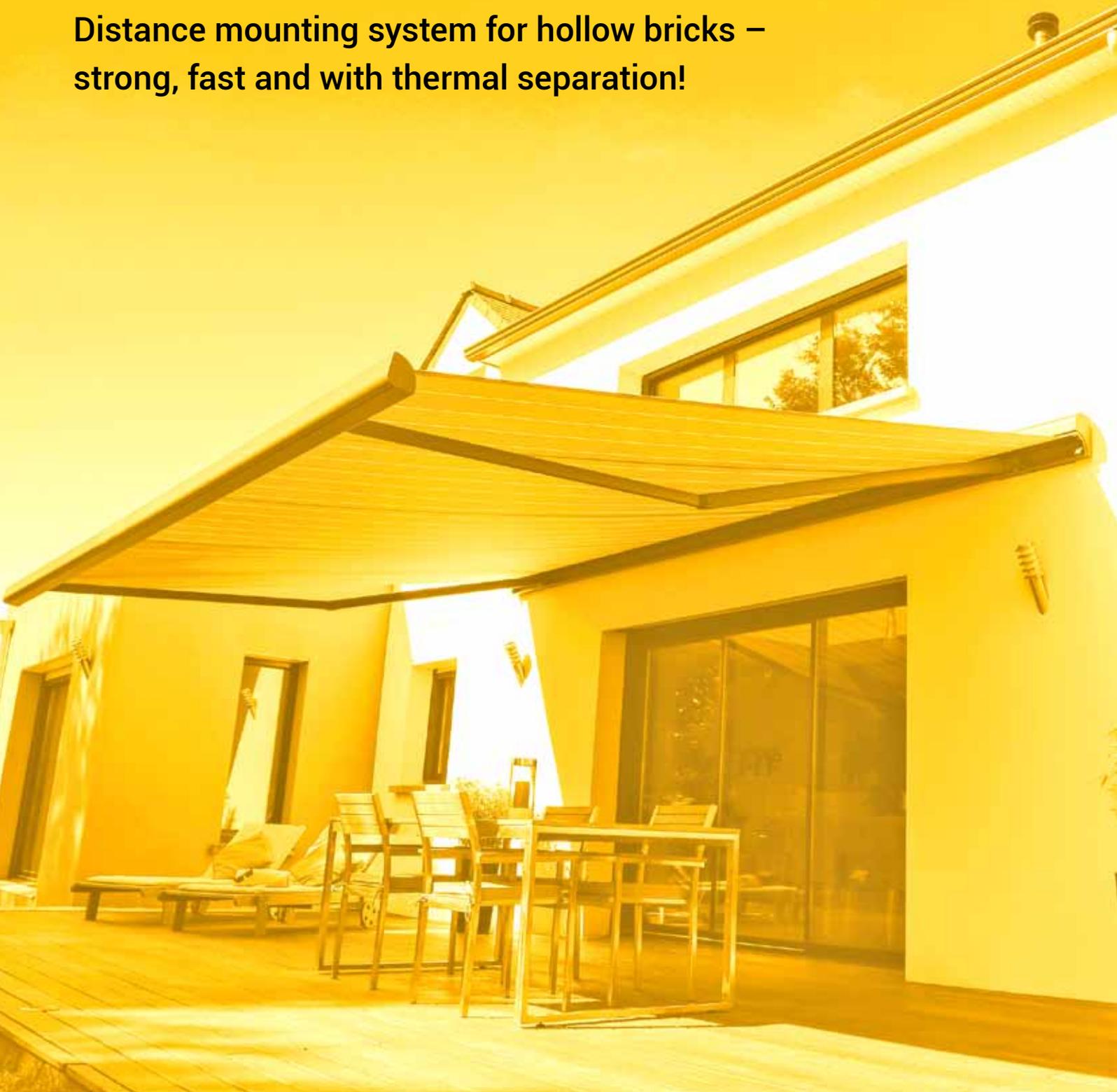
CELO

Made in Germany



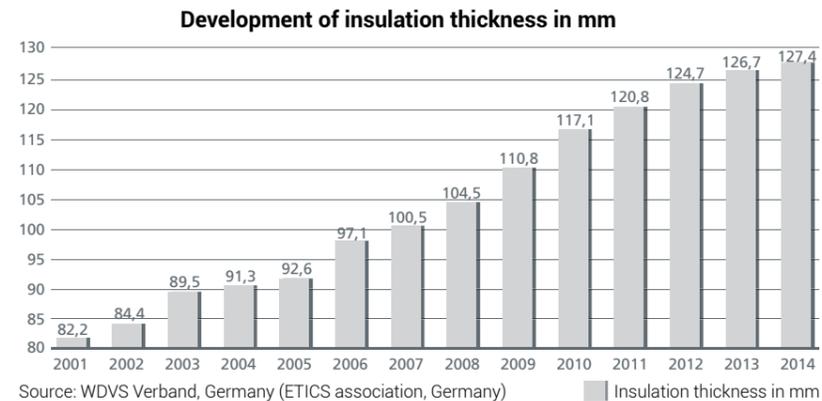
ResiTHERM[®]

Distance mounting system for hollow bricks –
strong, fast and with thermal separation!



Why ResiTHERM®?

An **External Thermal Insulation Composite System (ETICS)** is a multilayered construction to insulate walls. ETICS is used since about 1965 and consists out of coordinated system components. The key element - the insulation material - defines the basic characteristics of the system.



Fixings through the ETICS disturb the thermal insulation facade. Heavy-duty fastenings such as awnings, French balconies, canopies, satellite dishes, etc. have to be installed into the load-bearing wall through the ETICS.

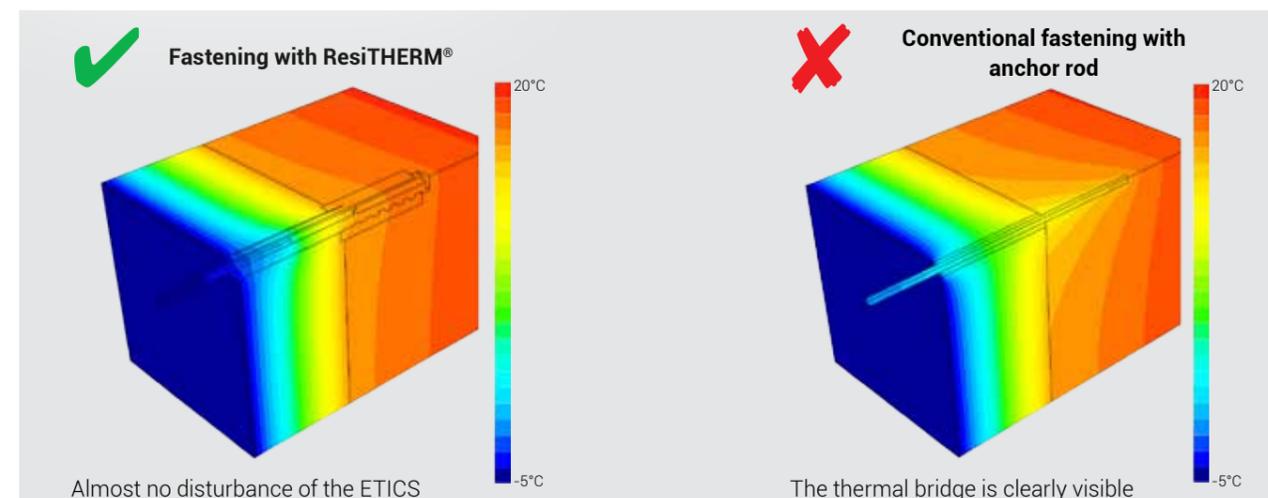
Two points are important:

1. The thickness of the insulation material must be bridged, which results in higher demands for the fastening system. In the case of hollow brick walls, it is even more difficult because the fastening system must be able to securely transmit the high forces into the hollow bricks.
2. The wall construction is disturbed, possibly resulting in a thermal bridge - risk of mold formation.



The ResiTHERM® from CELO solves these problems:

- ✓ Very robust anchoring system made out of glass fibre-reinforced nylon
- ✓ Excellent thermal separation
- ✓ Very high load values in hollow bricks
- ✓ Fast and easy to install



With a λ -value of 0,0034 W/K ResiTHERM® fulfills the requirement of the „Passivhausinstitut“ (passive house institute) for facade anchors of $\Delta U_{wb} \leq 0,010$ W/K.

Advantages

- ▶ **Excellent thermal separation**
ResiTHERM® protects your thermal insulation facade from mold and saves heating costs
- ▶ **High pull-out values, low bending**
Outstanding high load values in hollow bricks; ResiTHERM® is the perfect solution for safety-relevant applications like awnings, canopies, French balconies, railings, satellite dishes etc. in ETICS
- ▶ **Tested system**
The load values are proofed by an independent institute to guarantee safe and reliable fixings
- ▶ **Special system with perfectly matched components**
This ensures easy, fast and trouble-free usage
- ▶ **ResiTHERM® is a one-piece system**
An incorrect installation is almost impossible – for your safety and a good feeling during the installation



- ▶ **Precise positioning of the anchor**
The core bit BST drills accurately and quickly in hollow bricks, in addition the hollow brick won't be damaged
- ▶ **Heavy-duty sleeve** for non-insulated hollow brick walls: ResiTHERM® S



Profile

Suitable building materials	
Category	Chemical fastening systems
Assortment	ResiTHERM® 200 ResiTHERM® 160 ResiTHERM® 120 ResiTHERM® S
Approvals and certificates	IFBT tested PATENT PENDING BEST NYLON QUALITY A4 STAINLESS STEEL
Typical applications	ResiTHERM® is the perfect solution for distance installations in hollow bricks, e.g.: <ul style="list-style-type: none"> ▶ Awnings ▶ French balconies ▶ Canopies ▶ Railings ▶ Satellite dishes ▶ Sun protection sails ▶ Building constructions ▶ Window bars
Mounting	<p>1. Put drilling aid on core bit, drill with cordless screwdriver (without impact) through the insulation material up to the hollow brick wall (remove drilling aid after first 10 mm)</p> <p>2. Measure the thickness of insulation and cut ResiTHERM® if needed (max. 40 mm)</p> <p>3. Put drilling aid on core bit and drill min. 130 mm into the hollow brick wall (remove drilling aid after the first 10 mm)</p> <p>4. Clean hole</p> <p>5. Press ResiTHERM® onto mixing nozzle and push it carefully into the drill hole</p> <p>6. Fill ResiTHERM® with injection system ResiFIX; the end of the filling process can be clearly felt</p> <p>7. Respect curing time</p> <p>8. Fill annular gap with sealant StickFX XP, MS Polymer</p> <p>9. Install fixture $T_{inst} \leq 20$ Nm</p>
	<p>Montagevideo auf www.celofixings.com</p>

ResiTHERM® assortment



ResiTHERM® in set					Packing	
Type	Art-No	Set contains (packed in bag)	L [mm]	Insulation thickness h_D [mm]	[set]	[sets]
RTH 200	200RTH2	2x ResiTHERM® 200 2x Threaded stud M12x70 mm, stainless steel A4 2x Washer M12 DIN 125, stainless steel A4 2x Hexagon nut M12 DIN 934, stainless steel A4 1x ResiFIX VY300SF	325	160 - 200	1	10
RTH 160	160RTH2	2x ResiTHERM® 160 2x Threaded stud M12x70 mm, stainless steel A4 2x Washer M12 DIN 125, stainless steel A4 2x Hexagon nut M12 DIN 934, stainless steel A4 1x ResiFIX VY300SF	285	120 - 160	1	10
RTH 120	120RTH2	2x ResiTHERM® 120 2x Threaded stud M12x70 mm, stainless steel A4 2x Washer M12 DIN 125, stainless steel A4 2x Hexagon nut M12 DIN 934, stainless steel A4 1x ResiFIX VY300SF	245	80 - 120	1	10

¹⁾ ResiTHERM® may be cut up to 40 mm if needed. Longer lengths of ResiTHERM® on request.



Heavy-duty sleeve ResiTHERM® S for non-insulated hollow brick walls					Packing	
Type	Art-No	Set contains (packed in bag)	L [mm]	Insulation thickness h_D [mm]	[set]	[sets]
RTH S	RTHS2	2x ResiTHERM® S 2x Threaded stud M12x70 mm, stainless steel A4 2x Washer M12 DIN 125, stainless steel A4 2x Hexagon nut M12 DIN 934, stainless steel A4 1x ResiFIX VY300SF	125	-	1	10



Starter set ResiTHERM® in universal box (30 x 40 x 23 cm)				Packing
Type	Art-No	Set contains	[pcs]	
SYS120RTH4	Starter set RTH 120	4x ResiTHERM® 120 4x Threaded stud M12x70 mm, stainless steel A4 4x Washer M12 DIN 125, stainless steel A4 4x Hexagon nut M12 DIN 934, stainless steel A4 2x Injection system ResiFIX VY300SF incl. 4x mixing nozzle MD 1x Drilling aid for core bit	1	
SYS160RTH4	Starter set RTH 160	4x ResiTHERM® 160 1x Core bit \varnothing 39 x 220 mm 1x Adapter shank hexagon M16, 100 mm for core bit 1x Adapter shank hexagon M16, 200 mm for core bit	1	
SYS200RTH4	Starter set RTH 200	4x ResiTHERM® 200 1x StickFX XP white, MS Polymer 1x Caulking gun APVM 50x Distance washer DIN 9021 for M12 (13x37x3 mm) 1 pair work gloves	1	

ResiTHERM® Accessories

Core bit for perforated brick BST

Drilling aid for core bit ABH



Core bit and drilling aid for ResiTHERM®						Packing	
Type	Art-No	d [mm]	L [mm]	Connecting thread		[pcs]	[pcs]
BST 39 x 220	39220BST	39	220	M 16		1	-
ABH	39ABH	35	60	-		1	-

AD 100 AD 200



Adapter shank AD hexagon for core bit BST						Packing	
Type	Art-No	L [mm]	Connecting thread	Shank for drilling machine	Insulation thickness ≤ [mm]	[pcs]	[pcs]
AD 100	100M16AD	100	M 16	hexagon	160	1	-
AD 200	200M16AD	200	M 16	hexagon	260	1	-



Vinylester resin (styrene free)					Packing	
Type	Art-No	Content [ml]	Nozzles included [pcs]		[pcs]	[pcs]
VY 300 SF	300VSF	280	2		12	-



StickFX Professional all-purpose adhesive XP					Packing	
Type	Art-No	Content [ml]	Colour	Description	[pcs]	[pcs]
XP white	BL290MSXP	290	white	All-purpose adhesive, fills gaps	12	-



Distance washer AS Polyamid, DIN 9021 for M12					Packing	
Type	Art-No	Outer Ø [mm]	Internal Ø [mm]	h [mm]	[pcs]	[pcs]
AS	129021AS	37	13	3	50	-

To use as a distance washer for relining (if needed).



Caulking gun APVM				Packing	
Type	Art-No	Suitable for ResiFIX type		[pcs]	[pcs]
APVM	345APVM	345 / 300 / 165		1	-

Caulking gun APVM is recommended to read the scale units of ResiFIX VY (outer rod serves as a pointer).

Technical data

Installation parameters		ResiTHERM® S	ResiTHERM® 120	ResiTHERM® 160	ResiTHERM® 200
Anchor length	L [mm]	125	245	285	325
Thickness of insulation material	h_D [mm]	0	60 ¹⁾ - 120	120 ¹⁾ - 160	160 ¹⁾ - 200
Anchor Ø	d [mm]	37			
Drill hole Ø	d_0 [mm]	39 - 40			
Drill hole depth	$h_1 \geq$ [mm]	130			
Anchorage depth	h_{nom} [mm]	125 ± 10 ²⁾			
Connection thread	[mm]	M12			
Insertion depth of M12 threaded stud	$h_{s \text{ min-max}}$ [mm]	35 - 80			
Thickness of fixture	$t_{fix} \leq$ [mm]	22 ³⁾			
Ø of clearance hole in fixture	$d_f \leq$ [mm]	14			
Required volume of ResiFIX VY per ResiTHERM®	[ml]	app. 140			
Installation torque for mounting the fixture	$T_{inst} \leq$ [Nm]	20			

¹⁾ ResiTHERM® may be cut up to 40 mm if needed. ResiTHERM® 120: If thickness of insulation material is 60 mm, set 20 mm deeper.

²⁾ Tests with a minimum anchorage depth of 115 mm showed the same pulled-out values, see test report from IFBT, Leipzig.

³⁾ When using the included threaded stud with L=70 mm. If needed a longer threaded stud or metric screw can be used.

Loads and displacements/deflections ResiTHERM®: tested system with injection system ResiFIX VY

Building material	System	Thickness of insulation material	Recommended load ¹⁾	Displacement/deflection at rec. load ⁴⁾
Recommended tension load			N_{rec} [kN]	δ [mm]
Hollow brick T1.0-240	Single fastening	all	1,74	0,24
Hollow brick T10-300	Single fastening	all	1,56	0,31
Aerated concrete PP2-0,35	Single fastening	all	1,21	0,14
Aerated concrete PP4-0,55	Single fastening	all	2,12	0,32
Recommended pressure load			F_{rec} [kN]	δ [mm]
Hollow brick T1.0-240	Single fastening	all	4,23	0,57
Hollow brick T10-300	Single fastening	all	1,17	0,11
Recommended shear load²⁾			V_{rec} [kN]	δ [mm]
Hollow brick T1.0-240	Single fastening	0	3,77	1,80
		120	0,97	3,90
		160	0,90	6,31
		200	0,49	5,81
Hollow brick T10-300	Double fastening ³⁾	120	1,27	1,61
		160	0,98	2,45
		200	0,41	1,37
		0	1,39	0,39
Hollow brick T10-300	Single fastening	120	0,97	2,50
		160	0,90	7,10
		200	0,49	5,52
		120	0,52	0,54
Hollow brick T10-300	Double fastening ³⁾	160	0,41	0,69
		200	0,40	2,02

¹⁾ Recommended loads include the partial safety factor on action of $\gamma_F = 1,4$.

²⁾ For interpolated values see test report from IFBT, Leipzig.

³⁾ Spacing of 77 mm (standard awning console).

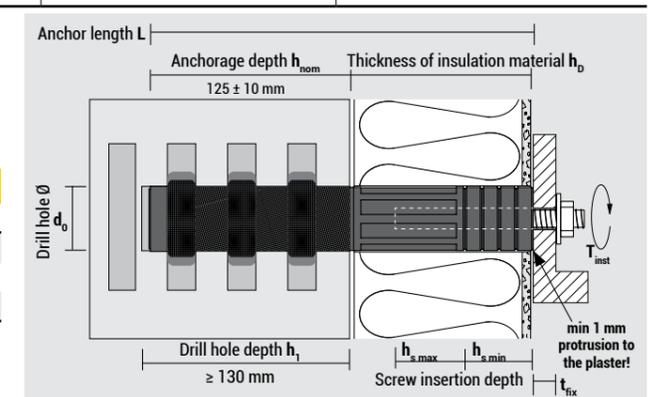
⁴⁾ Movement of ResiTHERM® in load direction at recommended load.

Application of ResiTHERM® in solid building materials is possible. For details please contact CELO or see test report from IFBT, Leipzig.

Spacing and edge distance

	ResiTHERM® S, 120, 160, 200
Minimum spacing	S_{min} [mm] 77 ³⁾
Minimum edge distance	C_{min} [mm] 125
Min. thickness of structural part	h_{min} [mm] 200

¹⁾ Spacing of 77 mm (standard awning console).



CELO Befestigungssysteme GmbH
Industriestraße 6
D-86551 Aichach
www.celofixings.com
Hotline: +49 (0) 8251-90485-0
Telefax: +49 (0) 8251-90485-49
E-mail: info@celofixings.de

Presented by:

