



Topduo Roofing screw

The wood-construction screw for all over-rafter insulation systems



Corrosion protection

blue+ is an innovative coating system with greater corrosion resistance than conventional electrogalvanised surfaces.

In the **blue+** system, a sealant is applied to a galvanised surface and reacts with it. In this way, any weak points in the galvanisation are safely sealed and protected. The coating is free of chromium(VI) oxide, which is classified among other things as being hazardous to the environment.

Surfaces treated with **blue+** have excellent resistance to mechanical stress.



Advantages **blue+** coating

- Greater corrosion resistance than conventional galvanisation
- Can be used in usage classes 1 and 2
- Free of chromium(VI) oxide
- Resistant to mechanical stress

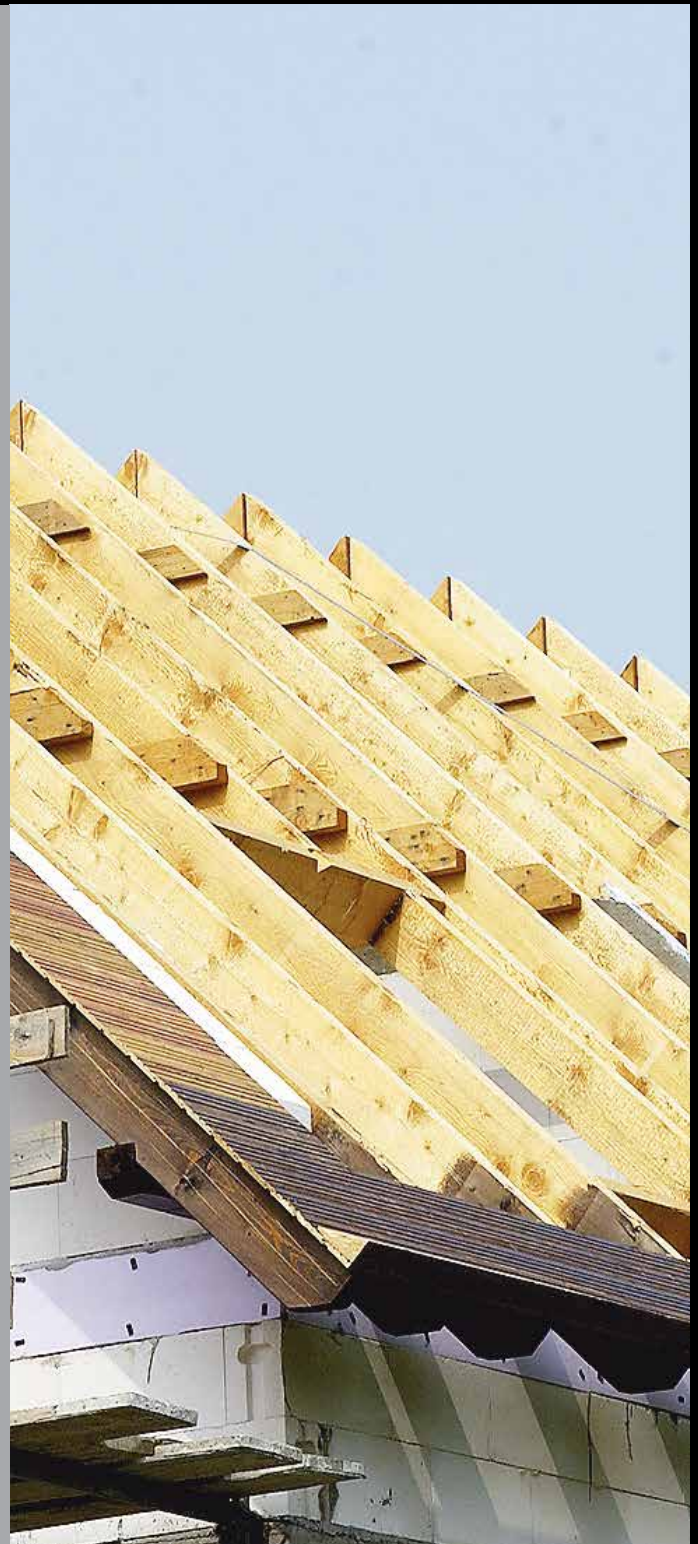
The Topduo double-threaded screw allows secure fastening of over-rafter insulation with both pressure-resistant and non-pressure-resistant insulating materials.

Of course, the high extraction resistance in both connecting timbers also makes the Topduo attractive for many other applications in the field of timber-frame construction.

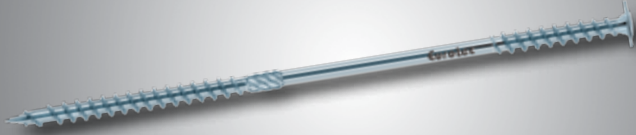


Advantages Topduo Roofing screw

- Double-threaded screw with new **blue+** coating
- Greater corrosion resistance than conventional galvanisation.



Topduo Roofing screw blue+ flanged button-head

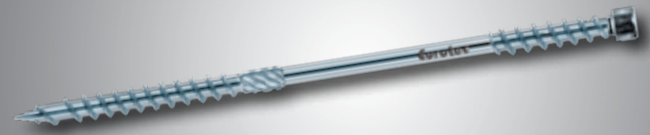


Art. no.	Dimensions (mm)	length (mm)*	Drive	PU	Box contents n x PU
945870	8,0 x 165 mm	60/ 80 mm	TX 40 ●	50	168 x 5
945871	8,0 x 195 mm	60/100 mm	TX 40 ●	50	144 x 50
945813	8,0 x 225 mm	60/100 mm	TX 40 ●	50	144 x 50
945814	8,0 x 235 mm	60/100 mm	TX 40 ●	50	111 x 50
945815	8,0 x 255 mm	60/100 mm	TX 40 ●	50	111 x 50
945816	8,0 x 275 mm	60/100 mm	TX 40 ●	50	111 x 50
945817	8,0 x 302 mm	60/100 mm	TX 40 ●	50	84 x 50
945818	8,0 x 335 mm	60/100 mm	TX 40 ●	50	84 x 50
945819	8,0 x 365 mm	60/100 mm	TX 40 ●	50	84 x 50
945820	8,0 x 397 mm	60/100 mm	TX 40 ●	50	84 x 50
945821	8,0 x 435 mm	60/100 mm	TX 40 ●	50	72 x 50
945843	8,0 x 472 mm	60/100 mm	TX 40 ●	50	72 x 50

* Under-head thread/drive thread

- For fastening over-rafter insulation
- Can also be used for many other applications in timber-frame construction thanks to its high extraction resistance.

Topduo Roofing screw blue+ cylinder-head



Art. no.	Dimensions (mm)	length (mm)*	Drive	PU	Box contents n x PU
945956	8,0 x 225	60/100	TX 40 ●	50	144x50
945965	8,0 x 235	60/100	TX 40 ●	50	111x50
945957	8,0 x 255	60/100	TX 40 ●	50	111x50
945958	8,0 x 275	60/100	TX 40 ●	50	111x50
945960	8,0 x 302	60/100	TX 40 ●	50	84x50
945961	8,0 x 335	60/100	TX 40 ●	50	84x50
945962	8,0 x 365	60/100	TX 40 ●	50	84x50
945963	8,0 x 397	60/100	TX 40 ●	50	84x50
945964	8,0 x 435	60/100	TX 40 ●	50	72x50

* Under-head thread/drive thread

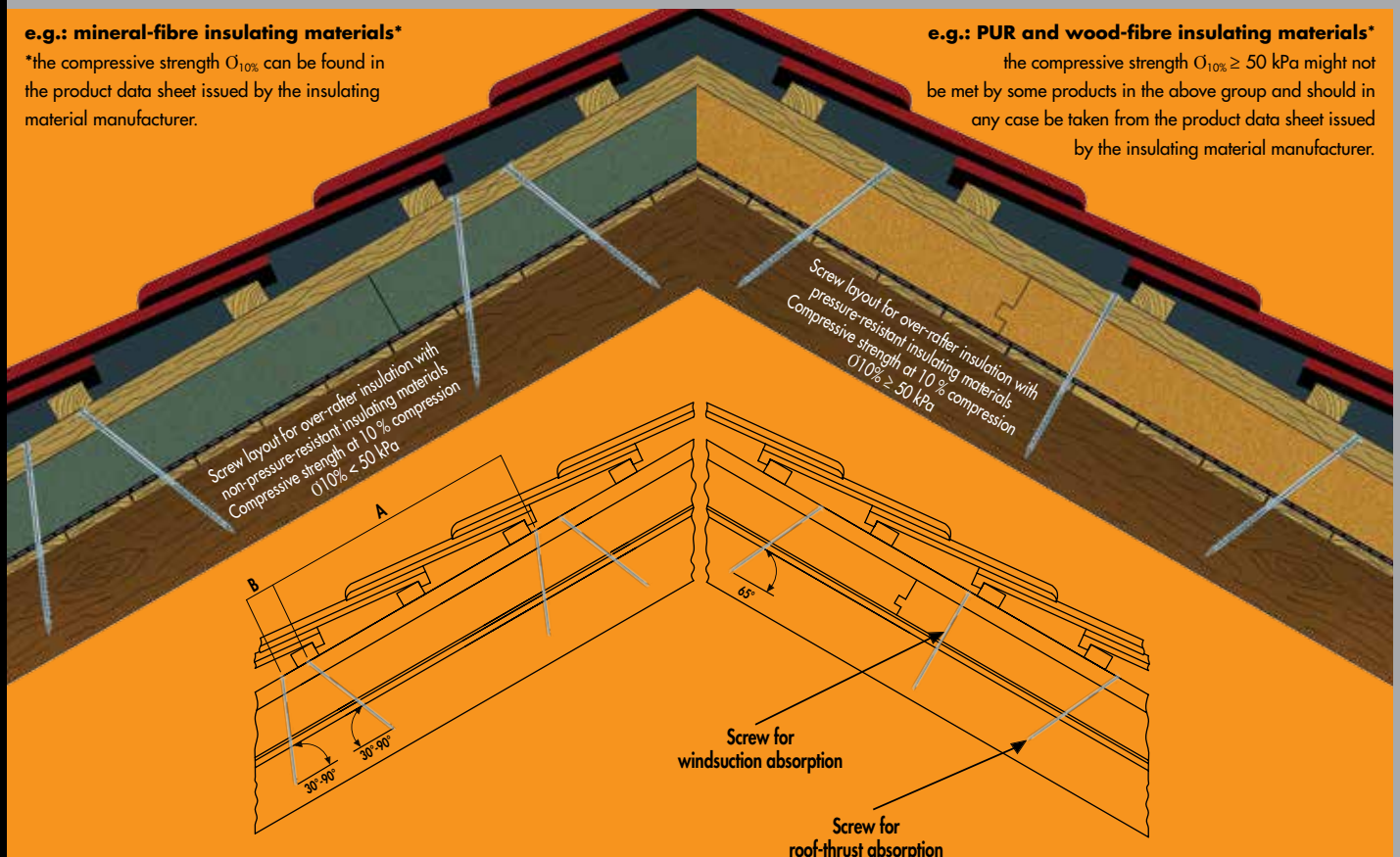
- For fastening over-rafter insulation
- Can also be used for many other applications in timber-frame construction thanks to its high extraction resistance.

e.g.: mineral-fibre insulating materials*

*the compressive strength $O_{10\%}$ can be found in the product data sheet issued by the insulating material manufacturer.

e.g.: PUR and wood-fibre insulating materials*

the compressive strength $O_{10\%} \geq 50$ kPa might not be met by some products in the above group and should in any case be taken from the product data sheet issued by the insulating material manufacturer.



Calculating quantities for Topduo roof-construction screw

Non-pressure-resistant insulating materials with $\sigma_{10\%} < 50 \text{ kPa}$

Example calculation

Number of Topduo screws/m^{2 a)} - Counter batten: 40 x 60 mm²

Insulation thickness	40	60	80	100	120	140	160	180	200	220	240	260	280	
Boarding thickness	-	-	24	24	24	24	24	24	24	24	24	24	-	
Screwing depth ^{b)}	77	58	66	74	72	77	88	66	106	84	62	78	82	
Dimensions	8 x 165	8 x 195	8 x 225	8 x 255	8 x 275	8 x 302	8 x 335	8 x 335	8 x 397	8 x 397	8 x 397	8 x 435	8 x 435	
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	
Roof pitch	20°	1,25	1,25	1,25	1,32	1,59	1,94	2,43	2,91	3,22	3,64	4,11	4,83	4,83
	25°	1,36	1,36	1,36	1,45	1,81	2,21	2,60	3,18	3,59	4,14	4,76	5,71	5,71
	30°	1,51	1,51	1,51	1,51	1,93	2,41	2,89	3,20	4,15	4,79	5,74	5,74	5,74
	35°	1,61	1,61	1,61	1,61	2,05	2,61	2,89	3,61	4,15	4,78	5,74	7,18	7,18
	40°	1,60	1,70	1,60	1,70	2,21	2,60	3,18	3,59	4,14	4,76	5,83	7,29	7,29
	45°	1,69	1,69	1,69	1,69	2,24	2,63	3,22	3,64	4,83	5,78	5,78	7,22	7,22
	50°	1,69	1,69	1,69	1,79	2,24	2,63	3,22	4,11	4,83	5,78	5,78	7,22	7,22
	55°	1,71	1,71	1,71	1,71	2,23	2,62	3,20	3,62	4,79	5,76	5,76	7,18	7,18
	60°	1,60	1,70	1,60	1,70	2,21	2,60	3,18	3,59	4,76	4,76	5,71	7,29	7,29

^{a)} With screw spacing A= B; screwing angle 65°.

^{b)} Screwing depth in the rafter.

Example conversion for screws/m² → max. screw spacing = $\frac{1}{(1,51 \times 0,7)} = 0,95 \text{ m}$.

With 1,51 = number of screws/m²; 0,7 = rafter clearance in m. According to the Z-9.1-630 approval, the screw spacing should not exceed 1,75 m.

Calculation according to Z-9.1-630, DIN 1055-4:2005-03 and DIN 1055-5:2005. All listed values should be viewed as subject to the assumptions that have been made.

They therefore represent example calculations and are subject to typographical and printing errors.

Further assumptions:

Gable roof; ridge height max. 18 m; site elevation max. 285 m above sea level; wind load zone 1 (only wind-pressure values for roof area "H" are taken into account);

snow load zone 2 (snow guard present); unladen weight of roofing 0,55 kN/m²; usage class (NKL) 2; rafters C24 8/≥12 cm; rafter length 8 m; rafter spacing 70 cm; counter batten C24 4/6 x 4 m.



Calculating quantities for Topduo roofing screw Pressure-resistant insulating materials with $\sigma_{10\%} \geq 50 \text{ kPa}$

Example calculation: Screws for roof-thrust absorption

Number of Topduo screws/m² - 100 kPa/50 kPa^{a)} - Counter batten: 40 x 60 mm²

Insulation thickness	40	60	80	100	120	140	160	180	200	220	240	260	280	
Boarding thickness	-	-	24	24	24	24	24	24	24	24	24	24	-	
Screwing depth ^{b)}	77	58	66	74	72	77	88	66	106	84	62	78	82	
Dimensions	8 x 165	8 x 195	8 x 225	8 x 255	8 x 275	8 x 302	8 x 335	8 x 335	8 x 397	8 x 397	8 x 397	8 x 435	8 x 435	
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	
Roof pitch	20°	0,58/0,97	0,57/1,00	0,57/0,97	0,57/0,97	0,57/0,97	0,57/1,02	0,57/1,13	0,57/1,24	0,57/1,33	0,57/1,44	0,57/1,53	0,57/1,62	0,62/1,72
	25°	0,69/1,18	0,62/1,22	0,59/1,18	0,59/1,18	0,59/1,18	0,59/1,24	0,59/1,37	0,59/1,50	0,59/1,62	0,59/1,74	0,64/1,85	0,70/1,98	0,75/2,10
	30°	0,79/1,36	0,72/1,41	0,68/1,36	0,68/1,36	0,68/1,36	0,68/1,42	0,68/1,58	0,68/1,72	0,68/1,87	0,68/2,01	0,74/2,13	0,80/2,26	0,87/2,42
	35°	0,88/1,51	0,79/1,56	0,75/1,51	0,75/1,51	0,75/1,51	0,75/1,58	0,75/1,76	0,75/1,93	0,75/2,07	0,75/2,23	0,83/2,38	0,89/2,55	0,96/2,69
	40°	0,93/1,64	0,85/1,70	0,82/1,64	0,82/1,64	0,82/1,64	0,82/1,72	0,82/1,90	0,82/2,07	0,82/2,26	0,82/2,42	0,89/2,59	0,97/2,74	1,04/2,91
	45°	0,98/1,74	0,89/1,78	0,87/1,74	0,87/1,74	0,87/1,74	0,87/1,83	0,87/2,01	0,87/2,19	0,87/2,38	0,87/2,55	0,94/2,74	1,02/2,91	1,10/3,03
	50°	1,00/1,80	0,92/1,85	0,89/1,80	0,89/1,80	0,89/1,80	0,89/1,87	0,89/2,07	0,89/2,26	0,89/2,46	0,89/2,64	0,97/2,80	1,06/2,97	1,14/3,17
	55°	1,00/1,83	0,93/1,87	0,91/1,83	0,91/1,83	0,91/1,83	0,91/1,90	0,91/2,13	0,91/2,30	0,91/2,50	0,91/2,69	0,99/2,85	1,08/3,03	1,16/3,24
	60°	0,98/1,83	0,93/1,87	0,90/1,83	0,90/1,83	0,90/1,83	0,90/1,90	0,90/2,10	0,90/2,30	0,90/2,50	0,90/2,69	0,99/2,85	1,07/3,03	1,16/3,24

^{a)} Number of screws/m², differentiated for compressive strength of the insulation: 100 kPa oder 50 kPa.

^{b)} Screwing depth in the rafter.

Example conversion for screws/m² → max. screw spacing = $\frac{1}{(1,36 \times 0,7)} = 1,05 \text{ m}$.

With 1,36 = number of screws/m²; 0,7 = rafter clearance in m. According to the Z-9.1-630 approval, the screw spacing should not exceed 1.75 m.

Calculation according to Z-9.1-630, DIN 1055-4:2005-03 and DIN 1055-5:2005.

All listed values should be viewed as subject to the assumptions that have been made. They therefore represent example calculations and are subject to typographical and printing errors.

Further assumptions:

Gable roof; ridge height max. 18 m; site elevation max. 285 m above sea level; wind load zone 1 (only wind-pressure values for roof area "H" are taken into account); snow load zone 2 (snow guard present); unladen weight of roofing 0,55 kN/m²; usage class (NKL) 2; rafters C24 8/≥12 cm; rafter length 8 m; rafter spacing 70 cm; counter batten C24 4/6 x 4 m.

Example calculation: Screws for wind-suction absorption

Number of Topduo screws/m² - max. screw spacing in m

Insulation thickness	40	60	80	100	120	140	160	180	200	220	240	260	280
Boarding thickness	-	-	24	24	24	24	24	24	24	24	24	24	-
Screwing depth ^{a)}	85	65	51	61	71	51	51	58	71	51	93	73	77
Dimensions (mm)	8 x 165	8 x 165	8 x 195	8 x 225	8 x 255	8 x 255	8 x 275	8 x 302	8 x 335	8 x 335	8 x 397	8 x 397	8 x 397
Roof pitch	20° - 25°	0,77 screws/m ² ; screw spacing = 1,85 m											
	>25° bis 35°	0,79 screws/m ² ; screw spacing = 1,80 m											
	>35° bis 40°	0,81 screws/m ² ; screw spacing = 1,76 m											
	>40° bis 50°	0,84 screws/m ² ; screw spacing = 1,70 m											
	>50° bis 60°	0,88 screws/m ² ; screw spacing = 1,63 m											

^{a)} Screwing depth in the rafter.

The following apply in addition to the assumptions made above: least favourable wind-suction values for the roof areas "H" and "I"; load-duration class (KLED) = short.

Roof hooks

Fastening for over-rafter insulation

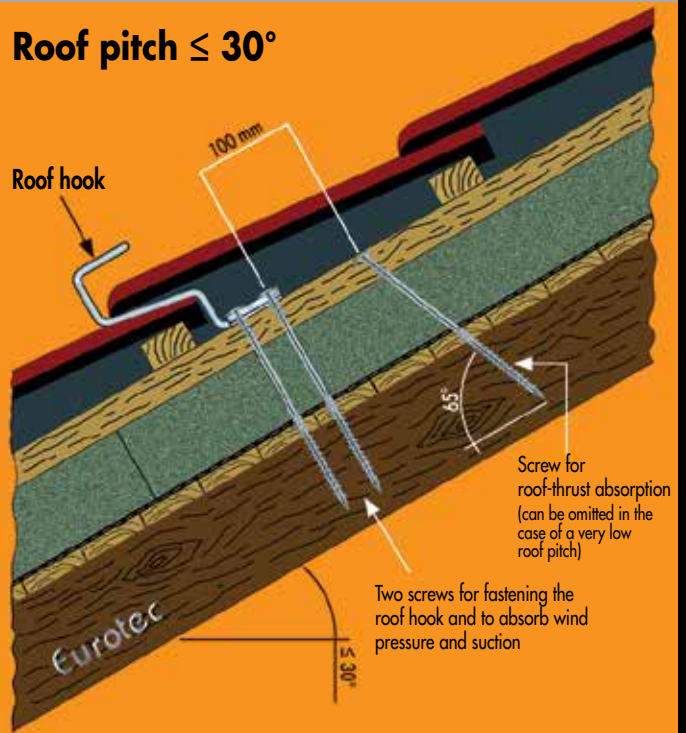


With the Topduo double-threaded screw, the additional point loads arising due to a photovoltaic or solar-thermal system are safely transferred to the rafter. The roof hooks are fastened to the rafter by means of two screws that pass through the entire assembly height of the over-rafter insulation.

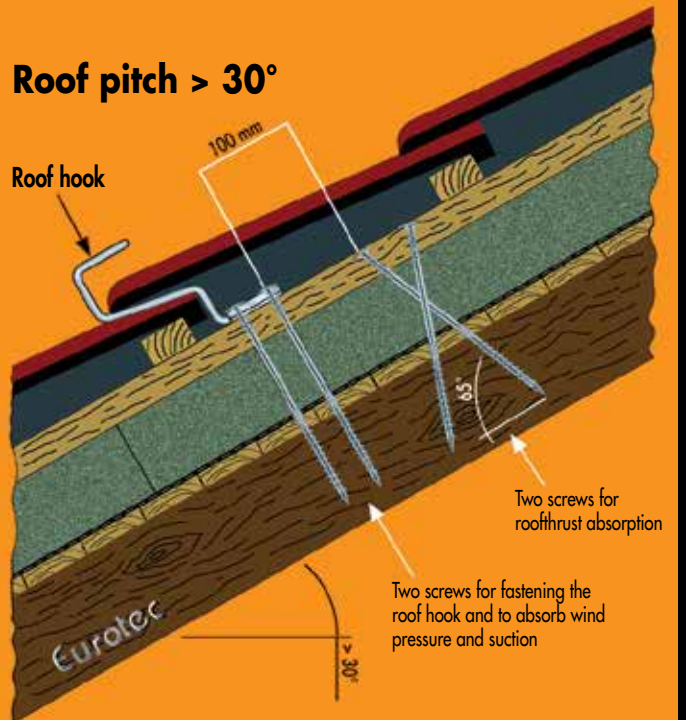
This connection must then be reinforced with max. two further screws, depending on the roof pitch and other factors.



Roof pitch $\leq 30^\circ$



Roof pitch $> 30^\circ$





Eurotec calculation service On-roof insulation in accordance with DIN EN 1995:2010-12

Paneltwistec and Topduo

With the ECS calculation software, you can create a calculation aid for the fastening of on-roof insulation systems in just a few minutes.

We will be delighted to handle your inquiry. Simply send the completed inquiry form to **Fax 02331 - 6245 200** or **Mail info@e-u-r-o-tec.de**

The software and inquiry form are available to download on the service page of our website **www.e-u-r-o-tec.de**

Contact

Traders:	Contractor:
Contact person:	Contact person:
E-Mail:	Tel.:
Construction project:	E-Mail:
We will email you the preliminary calculation, preferably in pdf format.	

Details of the construction project

<input type="checkbox"/> Lean-to roof	<input type="checkbox"/> Gable roof	<input type="checkbox"/> Hipped roof	Boarding thickness (mm):
Eave length (m):	Width of counter batten (mm): (at least 60 mm)		
Roof width (m):	Height of counter batten (mm): (at least 40 mm)		
Rafter length (m): (if roof width unknown)	Length of counter batten (m): (Length of actually installed counter-batten pieces)		
Ridge height (m): (above site)	Load from roofing and battens: <input type="checkbox"/> Standing metal seam roof (0,35 kN/m ²) <input type="checkbox"/> Concrete roofing tile, roof tile (0,55 kN/m ²) <input type="checkbox"/> Flat-tile roof in double/crown formation (0,75 kN/m ²) <input type="checkbox"/> or _____ (kN/m ²)		
Roof overhang (m): Eaves _____ / Verge _____ (To be stated only if insulation will not be laid beyond the edge of the building)			
Roof pitch (°): Main roof _____ / hip _____			
Insulation: (Product name)			
Insulation thickness (mm):	Post code of the construction project: (to allow determination of the wind/snow load zone)		
Rafter width (mm):	Characteristic snow load on base s_k (kN/m ²): (only for municipalities with special regulation)		
Rafter height (mm):	Site elevation above sea level (m):		
Rafter spacing (mm):	Snow guard provided? <input type="checkbox"/> Yes <input type="checkbox"/> No		

Screw selection

<input type="checkbox"/> Paneltwistec countersunk-head screw*	<input type="checkbox"/> Paneltwistec flanged button-head screw*	<input type="checkbox"/> Topduo**
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*only for pressure-resistant insulating materials with compressive strength ≥ 50 kPa

**also for non-pressure-resistant insulating materials