

PRODUCT DATA SHEET

PANELTWISTEC, COUNTERSUNK HEAD, STEEL BLUE ZINC PLATED

PRODUCT DESCRIPTION

Paneltwistec wood screws are used as fasteners for **load-bearing timber structures** between components made of solid timber, glued laminated timber, cross laminated timber and veneer laminated timber, as well as similar wood-based materials, board-shaped wood-based materials or steel-timber connections.

Paneltwistec wood screws can generally be screwed in **without any need for pre-drilling**. The exception to this rule is when they are used in deciduous wood / hardwood. The **scraping groove on the screw tip** ensures that the screws **"grip" quickly**, even in OSBs, for example. The **cutting ribs** downstream of the thread keep the **shaft clear**, so even long screws can be **inserted with ease**.

APPLICATIONS

- Conditionally corrosion-resistant and suitable for use in service classes 1 and 2 according to DIN EN 1995 (Eurocode 5)
- Timber Construction Screws Paneltwistec Ø 8.0 for fixing insulation above rafters
- Not suitable for use with woods containing tanning agents

MATERIAL

- Hardened carbon steel + blue galvanised
- Free of chromium (VI) oxide
- Good resistance to mechanical stresses

CERTIFICATION

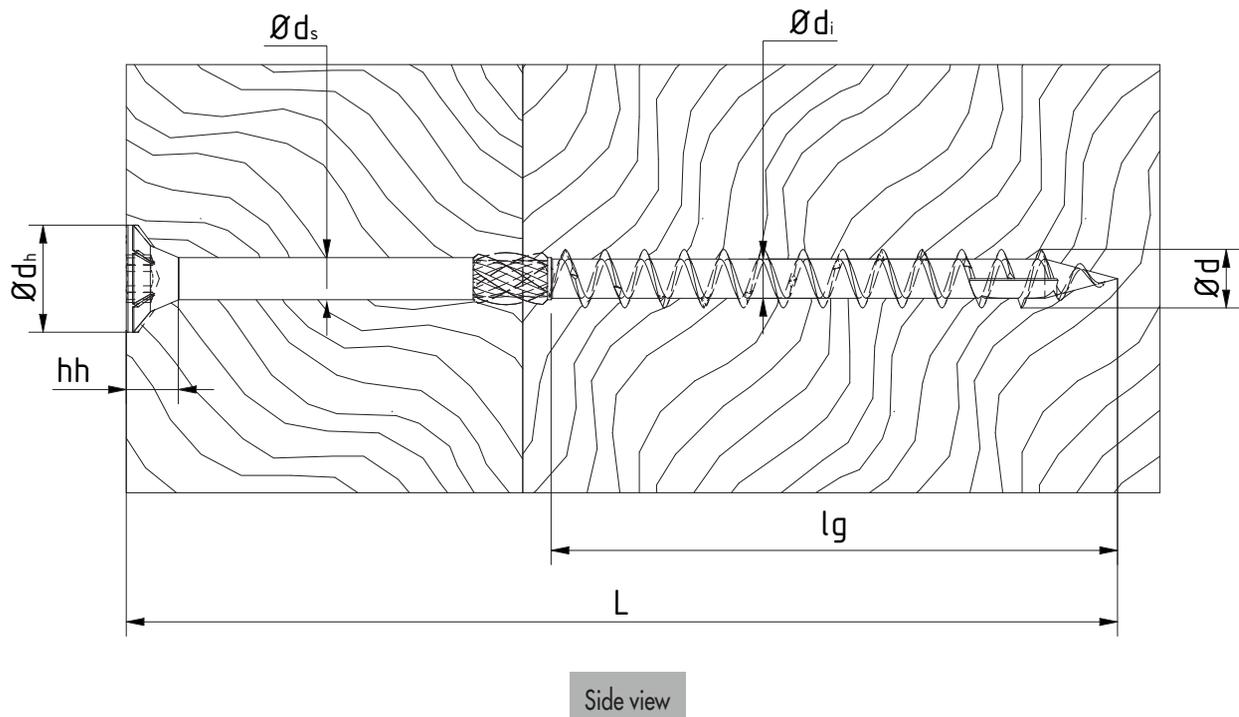
- European Technical Assessment ETA-11/0024
Self-tapping screws as wood connectors



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TECHNICAL INFORMATION



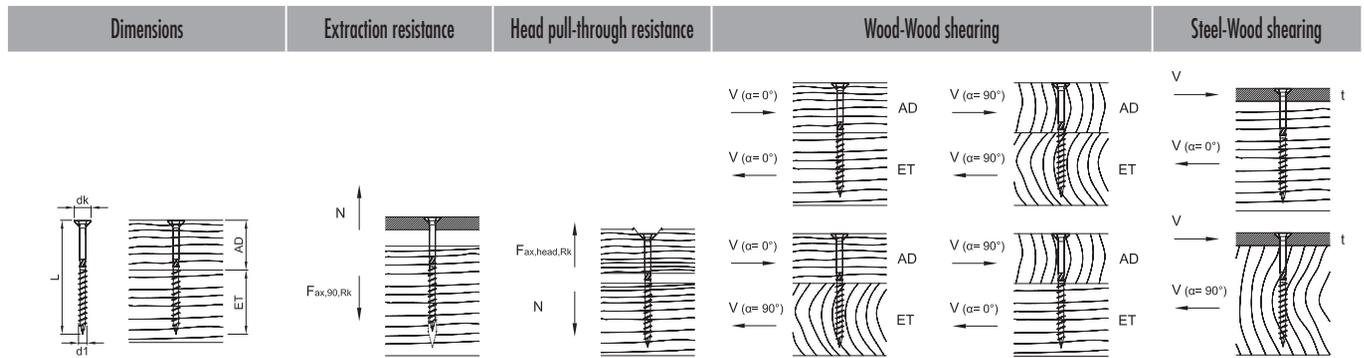
Paneltwistec, countersunk head screw, steel blue zinc plated

Nominal-Ø	Head-Ø	Root-Ø	Shank-Ø	Head shape	Lower head angle	Upper head angle	char. tensile capacity	char. yield moment	char. withdrawal parameter	char. head pull-through parameter	char. torsional strength ¹⁾
d [mm]	d _h [mm]	d _f [mm]	d _s [mm]	—	[Degree °]	[Degree °]	f _{tens,k} [kN]	M _{y,k} [Nm]	f _{ax,k} [N/mm ²]	f _{head,k} [N/mm ²]	f _{tor,k} [Nm]
3,5	7,0	2,1	2,3	SK	60	90	3,8	2,3	13,3	12	2,0
4	8,0	2,5	2,8	SK	60	90	5,0	3,3	12,9	12	3,0
4,5	9,0	2,7	3,0	SK	60	90	6,4	4,5	12,5	12	4,2
5	10,0	3,3	3,6	SK	60	90	7,9	5,9	12,1	12	5,6
6	12,0	4,0	4,3	SK	60	90	11,0	9,5	11,4	12	9,5
8	14,5	5,3	5,7	SK	60	90	20,0	20,0	11,1	12	22,0
10	17,5	6,3	6,9	SK	60	90	28,0	35,8	10,8	12	40,0

¹⁾ The values have been taken from ETA 11/0024 and DoP-ETA110024-05-2017. We cannot guarantee that there are no typographical or printing errors and therefore recommend that you check the documents mentioned above.

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d1 x L [mm]	dk [mm]	AD [mm]	ET [mm]	F _{ax,90,Rk} [kN]	F _{ax,head,Rk} [kN]	Wood-Wood shearing				Steel-Wood shearing	
						F _{la,Rk} [kN]	F _{lt,Rk} [kN]	F _{ra,Rk} [kN]	F _{rt,Rk} [kN]	t [mm]	F _{la,Rk} [kN]
						α _{AD} = 0°		α _{AD} = 90°			
						α = 0°	α = 90°	α _{ET} = 90°	α _{ET} = 0°	α = 0°	α = 90°
3,5 x 30	7,0	12	18	0,84	0,59			0,62		1	0,86
3,5 x 35	7,0	14	21	0,98	0,59			0,67		1	0,92
3,5 x 40	7,0	16	24	1,12	0,59			0,70		1	0,95
3,5 x 45	7,0	18	27	1,26	0,59			0,74		1	0,99
3,5 x 50	7,0	20	30	1,40	0,59			0,78		1	1,02
4,0 x 30	8,0	12	18	0,93	0,77			0,71		2	0,91
4,0 x 35	8,0	14	21	1,08	0,77			0,80		2	1,07
4,0 x 40	8,0	16	24	1,24	0,77			0,84		2	1,15
4,0 x 45	8,0	18	27	1,39	0,77			0,88		2	1,19
4,0 x 50	8,0	20	30	1,55	0,77			0,92		2	1,23
4,0 x 60	8,0	24	36	1,86	0,77			1,01		2	1,31
4,0 x 70	8,0	28	42	2,17	0,77			1,03		2	1,38
4,0 x 80	8,0	32	48	2,48	0,77			1,03		2	1,46
4,5 x 40	9,0	16	24	1,35	0,97			1,00		2	1,34
4,5 x 45	9,0	18	27	1,52	0,97			1,03		2	1,40
4,5 x 50	9,0	20	30	1,69	0,97			1,08		2	1,44
4,5 x 55	9,0	19	36	2,03	0,97			1,05		2	1,53
4,5 x 60	9,0	24	36	2,03	0,97			1,17		2	1,53
4,5 x 70	9,0	28	42	2,36	0,97			1,26		2	1,61
4,5 x 80	9,0	32	48	2,70	0,97			1,26		2	1,70
5,0 x 40	10,0	16	24	1,45	1,20			1,11		2	1,44
5,0 x 50	10,0	20	30	1,82	1,20			1,24		2	1,67
5,0 x 60	10,0	24	36	2,18	1,20			1,34		2	1,76
5,0 x 70	10,0	28	42	2,54	1,20			1,44		2	1,85

Calculation according to ETA-11/0024. Wood density ρ_k = 350 kg/m³. All mechanical values provided should be viewed as subject to the assumptions that have been made and represent example calculations.

All values are calculated minimum values and are subject to typographical and printing errors.

a) The characteristic values of the load-bearing capacity R_k cannot be treated as equivalent to the max. possible load (the max. force). Characteristic values of the load-bearing capacity R_k should be reduced to dimensioning values R_d with regard to the usage class and class of the load duration: R_d = R_k · k_{mod} / γ_M. The dimensioning values of the load-bearing capacity R_d should be contrasted with the dimensioning values of the loads (R_d ≥ E_d).

Example:

Characteristic value for constant load (dead weight) G_k = 2,00 kN and variable load (e. g. snow load) Q_k = 3,00 kN. k_{mod} = 0,9. γ_M = 1,3.

→ Dimensioning value of the load E_d = 2,00 · 1,35 + 3,00 · 1,5 = 7,20 kN.

The load-bearing capacity of the joint is therefore considered to have been demonstrated if R_d ≥ E_d. → min R_k = R_d · γ_M / k_{mod}

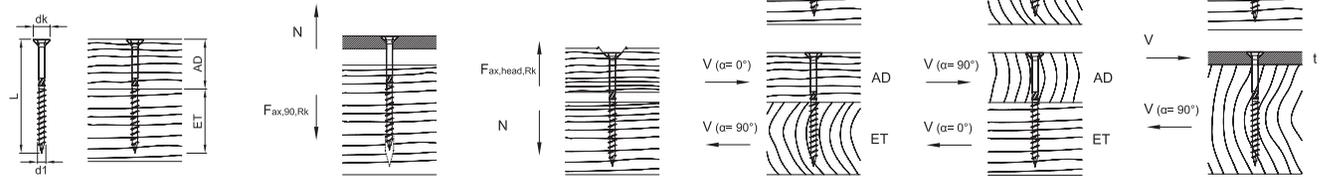
I.e. the characteristic minimum value is calculated based on: min R_k = R_d · γ_M / k_{mod} → R_k = 7,20 kN · 1,3 / 0,9 = 10,40 kN → comparison with table values.

Please note: These are planning aids. Projects must only be calculated by authorised persons.

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Dimensions	Extraction resistance	Head pull-through resistance	Wood-Wood shearing	Steel-Wood shearing
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d1 x L [mm]	dk [mm]	AD [mm]	ET [mm]	Fax,90,Rk [kN]	Fax,head,Rk [kN]	F _{l₀,Rk} [kN]		F _{l₀,Rk} [kN]		t [mm]	F _{l₀,Rk} [kN]	
						α=0°	α=90°	α _{AD} =0°	α _{AD} =90°		α=0°	α=90°
5,0 x 80	10,0	32	48	2,90	1,20		1,52			2		1,94
5,0 x 90	10,0	36	54	3,27	1,20		1,52			2		2,03
5,0 x 100	10,0	40	60	3,63	1,20		1,52			2		2,12
5,0 x 120	10,0	50	70	4,24	1,20		1,52			2		2,27
6,0 x 60	12,0	24	36	2,46	1,73		1,71			2		2,26
6,0 x 70	12,0	28	42	2,87	1,73		1,82			2		2,36
6,0 x 80	12,0	32	48	3,28	1,73		1,93			2		2,46
6,0 x 90	12,0	36	54	3,69	1,73		2,05			2		2,57
6,0 x 100	12,0	40	60	4,10	1,73		2,07			2		2,67
6,0 x 110	12,0	40	70	4,79	1,73		2,07			2		2,84
6,0 x 120	12,0	50	70	4,79	1,73		2,07			2		2,84
6,0 x 130	12,0	60	70	4,79	1,73		2,07			2		2,84
6,0 x 140	12,0	70	70	4,79	1,73		2,07			2		2,84
6,0 x 150	12,0	80	70	4,79	1,73		2,07			2		2,84
6,0 x 160	12,0	90	70	4,79	1,73		2,07			2		2,84
6,0 x 180	12,0	110	70	4,79	1,73		2,07			2		2,84
6,0 x 200	12,0	130	70	4,79	1,73		2,07			2		2,84
6,0 x 220	12,0	150	70	4,79	1,73		2,07			2		2,84
6,0 x 240	12,0	170	70	4,79	1,73		2,07			2		2,84
6,0 x 260	12,0	190	70	4,79	1,73		2,07			2		2,84
6,0 x 280	12,0	210	70	4,79	1,73		2,07			2		2,84
6,0 x 300	12,0	230	70	4,79	1,73		2,07			2		2,84

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 → Dimensioning value of the load E_d = 2,00 · 1,35 + 3,00 · 1,5 = 7,20 kN.
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 I.e. the characteristic minimum value is calculated based on: min R_k = R_d · γ_M / k_{mod} → R_k = 7,20 kN · 1,3 / 0,9 = 10,40 kN → comparison with table values.

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PRODUCT TABLE

Paneltwistec, countersunk head screw, steel blue zinc plated				
Art. no.	Dimensions Ø d x L [mm]	Drive	Thread length [mm]	PU
B903045	3,5 x 30	TX15 ●	18	1000
B903044	3,5 x 35	TX15 ●	21	1000
B903001	3,5 x 40	TX15 ●	24	1000
B903002	3,5 x 50	TX15 ●	30	500
B903003	4,0 x 30	TX20 ●	18	1000
B903603	4,0 x 35	TX20 ●	21	1000
B903004	4,0 x 40	TX20 ●	24	1000
B902089	4,0 x 45	TX20 ●	27	500
B903005	4,0 x 50	TX20 ●	30	500
B903006	4,0 x 60	TX20 ●	36	200
B903007	4,0 x 70	TX20 ●	42	200
B903008	4,0 x 80	TX20 ●	48	200
B903009	4,5 x 40	TX25 ●	24	500
B903087	4,5 x 45	TX25 ●	27	500
B903010	4,5 x 50	TX25 ●	30	500
B903088	4,5 x 55	TX25 ●	36	500
B903011	4,5 x 60	TX25 ●	36	200
B903012	4,5 x 70	TX25 ●	42	200
B903013	4,5 x 80	TX25 ●	48	200
B903014	5,0 x 40	TX25 ●	24	200
B903015	5,0 x 50	TX25 ●	30	200
B903016	5,0 x 60	TX25 ●	36	200
B903017	5,0 x 70	TX25 ●	42	200
B903018	5,0 x 80	TX25 ●	48	200
B903578	5,0 x 90	TX25 ●	54	200
B903019	5,0 x 100	TX25 ●	60	200
B903020	5,0 x 120	TX25 ●	70	200
B903021	6,0 x 60	TX30 ●	36	200
B903022	6,0 x 70	TX30 ●	42	200
B903023	6,0 x 80	TX30 ●	48	200
B903163	6,0 x 90	TX30 ●	54	100
B903024	6,0 x 100	TX30 ●	60	100
B903025	6,0 x 120	TX30 ●	70	100
B903026	6,0 x 130	TX30 ●	70	100
B903027	6,0 x 140	TX30 ●	70	100
B903030	6,0 x 150	TX30 ●	70	100
B903029	6,0 x 160	TX30 ●	70	100
B903031	6,0 x 180	TX30 ●	70	100
B903032	6,0 x 200	TX30 ●	70	100
B903033	6,0 x 220	TX30 ●	70	100
B903034	6,0 x 240	TX30 ●	70	100
B903035	6,0 x 260	TX30 ●	70	100
B903036	6,0 x 280	TX30 ●	70	100
B903037	6,0 x 300	TX30 ●	70	100
975780	12,0 x 120	TX50 ●	80	25

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Paneltwistec, countersunk head screw, steel blue zinc plated				
Art. no.	Dimensions Ø d x L [mm]	Drive	Thread length [mm]	PU
975781	12,0 x 140	TX50 •	80	25
975782	12,0 x 160	TX50 •	80	25
975783	12,0 x 180	TX50 •	80	25
975784	12,0 x 200	TX50 •	80	25
975785	12,0 x 220	TX50 •	100	25
975786	12,0 x 240	TX50 •	100	25
975787	12,0 x 260	TX50 •	100	25
975788	12,0 x 280	TX50 •	100	25
975789	12,0 x 300	TX50 •	100	25
975790	12,0 x 320	TX50 •	100	25
975791	12,0 x 340	TX50 •	120	25
975792	12,0 x 360	TX50 •	120	25
975793	12,0 x 380	TX50 •	120	25
975794	12,0 x 400	TX50 •	120	25
975795	12,0 x 500	TX50 •	120	25
975796	12,0 x 600	TX50 •	120	25

If you are not familiar with this product's application, and particularly with the product's intended use, please contact our Application Technology department (technik@eurotec.team).