GUIDE
FOR PROFESSIONALS

ET-T
CONSTRUCTION SCREW

INVISIBLE INSTALLATION
WITHOUT BRACKETS
FOR TIMBER-TO-TIMBER CONNECTIONS

ESSVE
GET IT DONE

STYLISH, SPEEDY & SAFE

ET-T stands for ESSVE Timber Technics and is a wood screw with a thread pitch which constricts the timber and provides excellent stability and strenght. The ET-T construction screw is developed for timber-to-timber connections, e.g. fixing joists to binders, splicing beams and joining pieces of timber. Thanks to its unique design, ET-T provides safe and strong installation, without any joist hangers or other brackets. The reduced head provides invisible installation, while the self-drilling tip eliminates the need for pre-drilling. ET-T has C4-class CorrSeal surface treatment and is CE marked.

ET-T CONSTRUCTION SCREW

TX-drive provides good grip between bit and screw.

Reduced head makes it easy to countersink the screw to the required insertion depth

The unthreaded part should be positioned in the joint between the pieces of timber.

Different thread pitches effectively draw the pieces of timber together, which gives strong installation and a tight join between the pieces of timber.

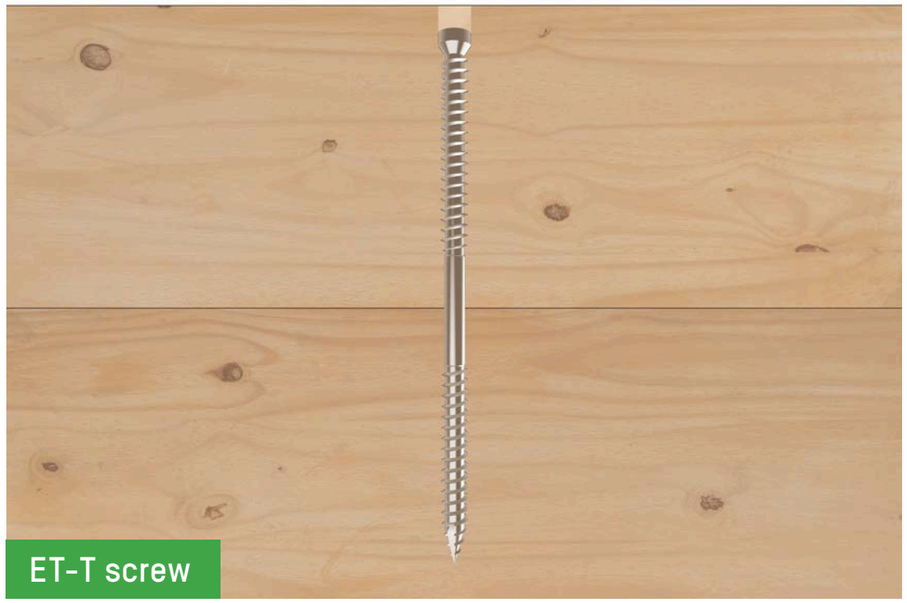
CE marked in accordance with EN 14592.

C4 CorrSeal C4-class surface treatment.

Fibercut gives low drive-in torque and minimises the risk of splitting.

CLAMPING FORCE

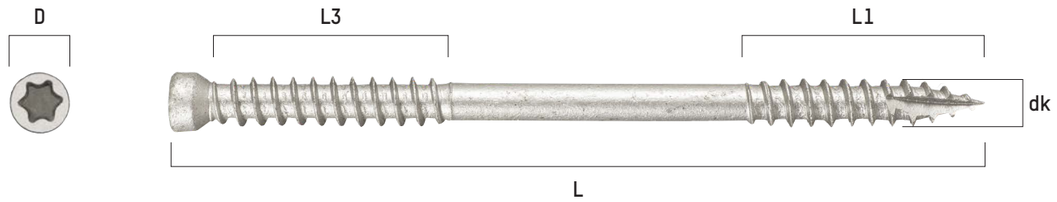
Thanks to different thread pitches, ET-T draws the pieces of timber together much more effectively than a regular screw.



ET-T screw

Regular screw

ET-T PRODUCT RANGE



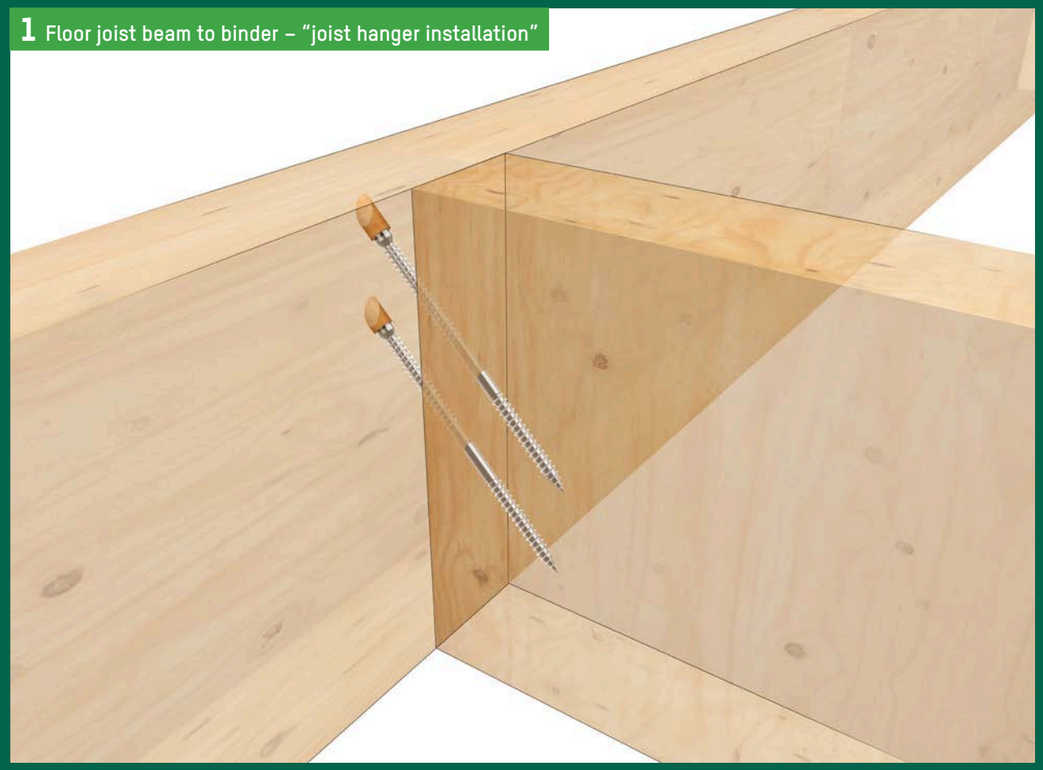
Item no.	Dimension/dk x L mm	D mm	L3 mm	L1 mm	Bit no.	ESSBOX-size	Qty/pack
118 100	6,5 x 65	8	22	22	TX30	203	100
118 102	6,5 x 90	8	38	38	TX30	204	100
118 104	6,5 x 130	8	38	38	TX30	304	100
118 106	6,5 x 160	8	60	60	TX30	206	50
118 108	6,5 x 190	8	80	80	TX30	206	50
118 110	6,5 x 220	8	95	95	TX30	206	50
118 112	8,2 x 90	10	38	38	TX40	204	50
118 114	8,2 x 130	10	38	38	TX40	204	50
118 116	8,2 x 160	10	60	60	TX40	206	50
118 118	8,2 x 190	10	80	80	TX40	206	50
118 120	8,2 x 220	10	95	95	TX40	206	50
118 122	8,2 x 245	10	107	107	TX40	206	50
118 124	8,2 x 275	10	107	107	TX40	802	50
118 126	8,2 x 300	10	135	135	TX40	803	50
118 128	8,2 x 330	10	135	135	TX40	803	50

AREAS OF USE

ET-T has many areas of use, since it is suitable for most types of installations involving timber-to-timber connections, see examples shown here.

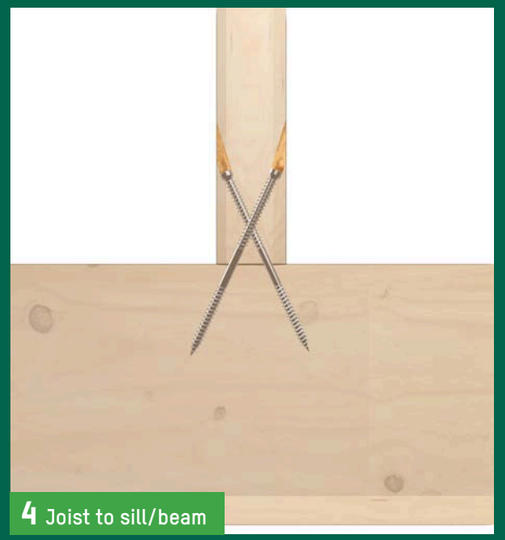
TABLES FOR LOAD-CARRY-ING CAPACITY PAGES 10–15

1 Floor joist beam to binder – “joist hanger installation”



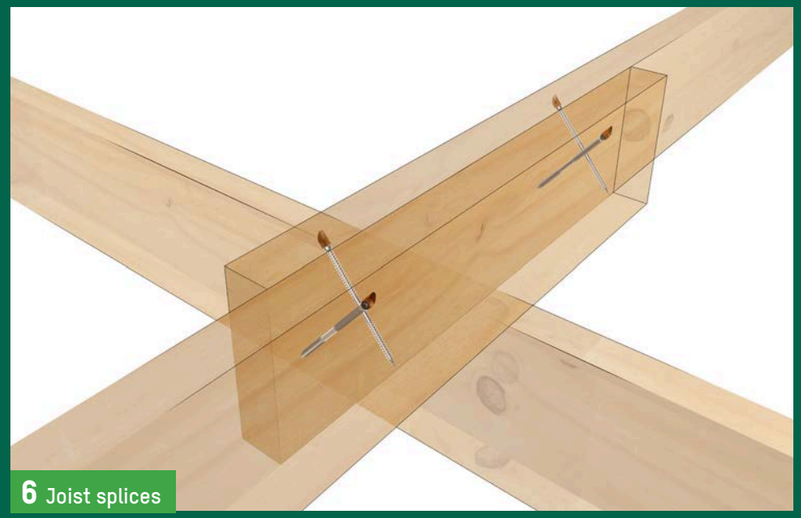
2 Roof rafter fastening

3 Combined timber joist



4 Joist to sill/beam

5 Support blocks



6 Joist splices

USE THE CORRECT BIT

TX30
FOR
Ø6,5 MM

Item no.	Dimension/dk x L mm	Bit no.	Qty/pack
9980206	25	TX30	3
9980376	25	TX30	10
9980266	50	TX30	3
9980316	70	TX30	3
9980324	110	TX30	1
9980340	150	TX30	1

TX BIT – SELECT LENGTH ACCORDING TO DESIRED COUNTERSINKING

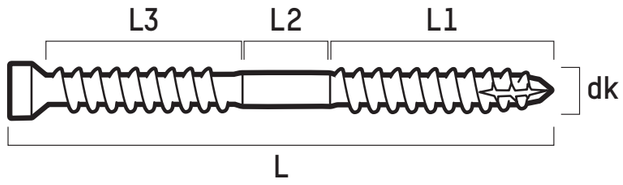
TX40
FOR
Ø8,2 MM

Art nr	Dimension/dk x L mm	Bits nr	Antal/frp
9980208	25	TX40	3
9980378	25	TX40	10
9980268	50	TX40	3
9980314	70	TX40	3
9980326	110	TX40	1
9980342	150	TX40	1

INSTALLATION INSTRUCTIONS

- Combinations of different ET-T screws at different angles in the same connection is not permitted without a more detailed analysis
- The unthreaded part of the screw should be situated in the joint between the pieces of timber
- For shear-loaded joints, the screws should be mounted so they take the load as tensile force
- When installing in crosscut ends, the angle between screw and fibre should be at least 30°
- Use ESSVE's specific system bits for a safe installation and fit the system bits without an adapter, directly in the chuck
- Screw installation must then occur at a constant torque without stopping
- Use a strong power driver for best installation, but not an impact driver
- Recommended rpm is 250–800/min
- The timber should be frost free at the time of installation

ASSUMPTIONS FOR THE LOAD-CARRYING CAPACITY VALUES IN THE TABLES[a]



The tabled values, calculated in accordance with Eurocode 5[a], assume that the unthreaded part, L2, of the screw ends up in the clamped joint between the pieces of timber, and the threaded parts, L1 and L3, are completely screwed into each piece of timber. There is also an assumption that both pieces of timber are of the same grade and that only one screw has been used in the screw joint. If there is more than one screw in the joints, a reduction will be made in accordance with the rules in Eurocode 5. For final design, the edge distance and spacing of the screws should be checked against the Eurocode.

a] Standard EN 1995–1:2004 including AC:2006, A1:2008 and A2:2014

RECALCULATING CHARACTERISTIC LOAD-CARRYING CAPACITY FOR A DIFFERENT TIMBER GRADE

Load-carrying capacity in the axial direction for a different timber grade is recalculated according to the equation below. In the example, the quotient of the used grade density (see table) and the used wood density for the corresponding load valueis raised to the power of 0.8.

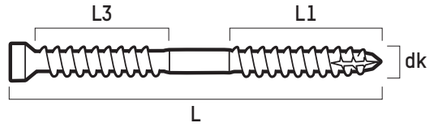
If the axial load-bearing capacity for the specific screw is 60kg in timber C14, the load-carrying capacity in timber C35 will increase as follows:

$$60kg \times [400/290]^{0.8} = 75kg$$

It is not possible, however, to perform a similar calculation for transverse loads. For guidance, please contact your local ESSVE distributor or find contacts on essve.com.

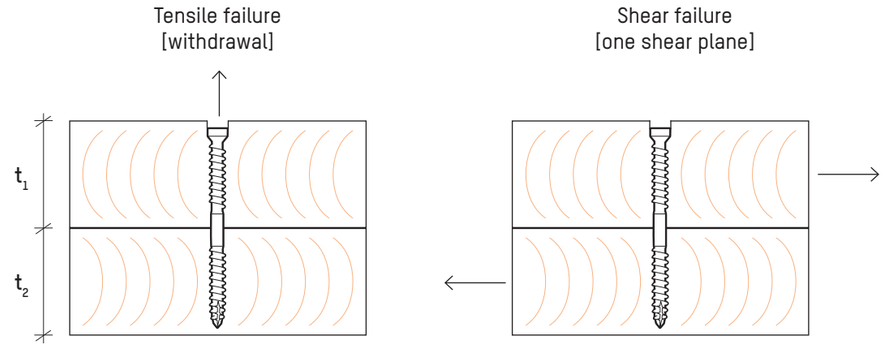
Material	Density ρ_k [kg/m³]
C14	290
C18	320
C24	350
C30	380
C35	400
C40	420

PERMITTED LOAD WHEN INSTALLED PERPENDICULAR TO THE GRAIN[a]

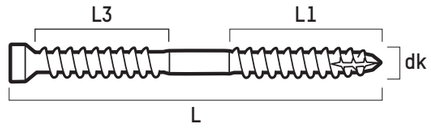


CE marking EN 14592	dk x L [mm]	L1, L3 [mm]	t_1, t_2 min [mm]	Axial direction [withdrawal/ pull-through] $F_{ax.permitted}$ [kg]		Transversal direction [one shear plane] $F_{v.permitted}$ [kg]	
				C14	C24	C14	C24
	6,5 x 65	22	32,5	60	75	45	55
x	6,5 x 90	38	45	110	130	70	80
x	6,5 x 130	38	65	110	130	75	85
x	6,5 x 160	60	80	175	205	95	105
x	6,5 x 190	80	95	235	270	100	110
x	6,5 x 220	95	110	280	325	100	110
x	8,2 x 90	38	45	115	135	100	115
x	8,2 x 130	38	65	115	135	120	130
x	8,2 x 160	60	80	185	215	135	150
x	8,2 x 190	80	95	245	285	150	170
x	8,2 x 220	95	110	295	340	165	185
x	8,2 x 245	107	122,5	330	385	170	195
x	8,2 x 275	107	137,5	330	385	170	195
x	8,2 x 300	135	150	415	485	180	200
x	8,2 x 330	135	165	415	485	180	200

a] Calculated by dividing the design load-carrying capacity [calculated with permanent load duration and climate class 2 in accordance with Eurocode 5] by the load factor $\gamma = 1.4$ as well as under the assumptions on Page 10.



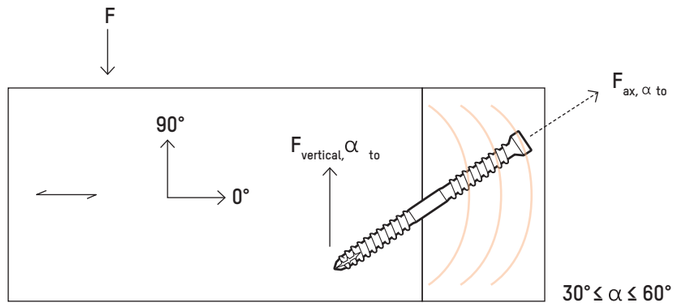
PERMITTED LOAD IN JOIST HANGER JOISTS [a]



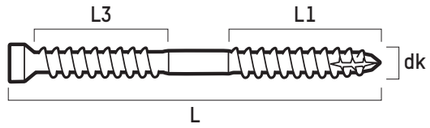
CE marking EN 14592	dk x L [mm]	30° $F_{vertical.30.to}$ [kg]		45° $F_{vertical.45.to}$ [kg]		60° $F_{vertical.60.to}$ [kg]	
		C14	C24	C14	C24	C14	C24
	6,5 x 65	25	35	40	45	55	65
x	6,5 x 90	50	55	70	85	90	105
x	6,5 x 130	50	55	70	85	90	105
x	6,5 x 160	75	90	110	130	140	170
x	6,5 x 190	100	115	150	170	190	220
x	6,5 x 220	120	140	180	205	230	265
x	8,2 x 90	50	60	75	85	95	110
x	8,2 x 130	50	60	75	85	95	110
x	8,2 x 160	80	90	120	135	150	175
x	8,2 x 190	105	120	160	180	200	235
x	8,2 x 220	125	145	185	220	240	275
x	8,2 x 245	140	165	210	245	270	315
x	8,2 x 275	140	165	210	245	270	315
x	8,2 x 300	180	210	265	305	340	395
x	8,2 x 330	180	210	265	305	340	395

a] Calculated by dividing the design load-carrying capacity (calculated with permanent load duration and climate class 2 according to Eurocode 5) by the load factor γ = 1.4. as well as under the assumptions on Page 10.

The vertical load-carrying capacity is based on that the axial load-carrying capacity of the screw is bearing the entire load.



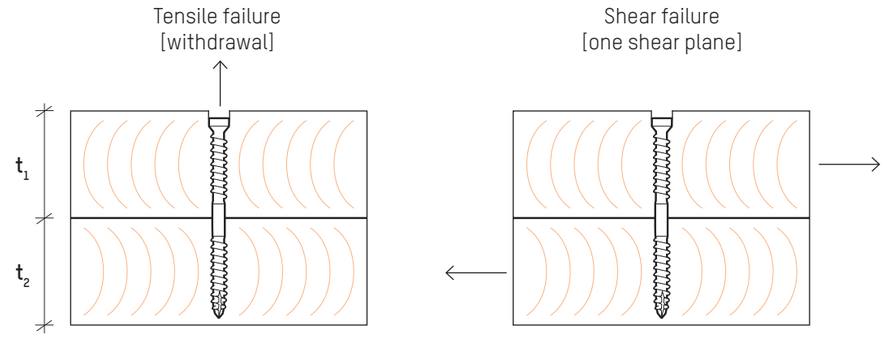
CHARACTERISTIC LOAD-CARRYING CAPACITY WHEN INSTALLED PERPENDICULAR TO THE GRAIN [a]



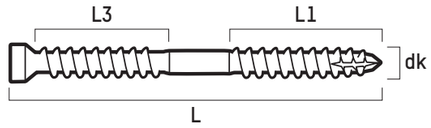
CE marking EN 14592	dk x L [mm]	L1, L3 [mm]	t_1, t_2 min [mm]	Axial direction [withdrawal/ pull-through] $F_{ax.Rk}$ [kN]		Transversal direction [one shear plane] $F_{v.Rk}$ [kN]	
				C14	C24	C14	C24
	6,5 x 65	22	32,5	1,9	2,2	1,4	1,7
x	6,5 x 90	38	45	3,3	3,9	2,1	2,4
x	6,5 x 130	38	65	3,3	3,9	2,3	2,6
x	6,5 x 160	60	80	5,3	6,1	2,9	3,2
x	6,5 x 190	80	95	7,0	8,2	3,0	3,3
x	6,5 x 220	95	110	8,3	9,7	3,0	3,3
x	8,2 x 90	38	45	3,5	4,1	3,0	3,5
x	8,2 x 130	38	65	3,5	4,1	3,6	3,9
x	8,2 x 160	60	80	5,5	6,4	4,1	4,5
x	8,2 x 190	80	95	7,4	8,6	4,5	5,2
x	8,2 x 220	95	110	8,8	10,2	5,0	5,6
x	8,2 x 245	107	122,5	9,9	11,5	5,2	5,9
x	8,2 x 275	107	137,5	9,9	11,5	5,2	5,9
x	8,2 x 300	135	150	12,5	14,5	5,5	6,1
x	8,2 x 330	135	165	12,5	14,5	5,5	6,1

a] To obtain the design load-carrying capacity in accordance with Eurocode 5 equation 2.17 the values in the table must be multiplied by k_{mod} and divided by γ_m = 1.3.

For assumptions of the calculated values, see Page 10



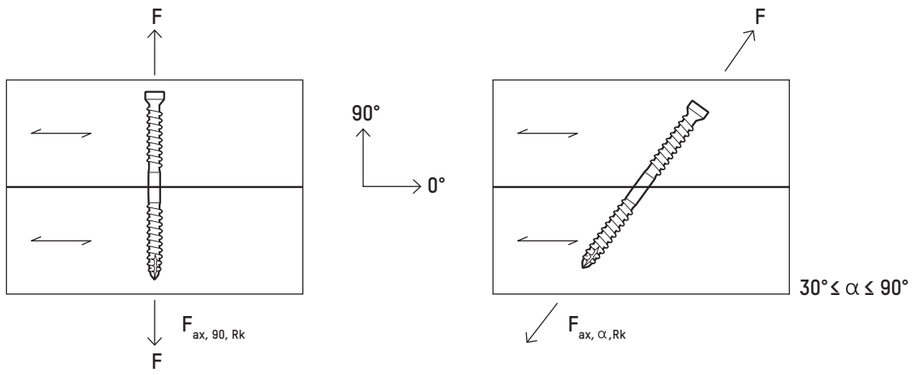
CHARACTERISTIC AXIAL LOAD-CARRYING CAPACITY FOR SCREW AT DIFFERENT ANGLES [a]



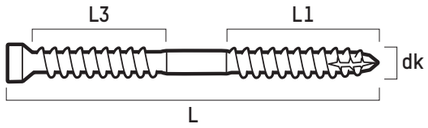
CE marking EN 14592	dk x L [mm]	30° $F_{ax.30.Rk}$ [kN]		45° $F_{ax.45.Rk}$ [kN]		60° $F_{ax.60.Rk}$ [kN]		90° $F_{ax.90.Rk}$ [kN]	
		C14	C24	C14	C24	C14	C24	C14	C24
	6,5 x 65	1,7	2,0	1,8	2,0	1,8	2,1	1,9	2,2
x	6,5 x 90	2,9	3,4	3,0	3,5	3,2	3,7	3,3	3,9
x	6,5 x 130	2,9	3,4	3,0	3,5	3,2	3,7	3,3	3,9
x	6,5 x 160	4,6	5,3	4,8	5,6	5,0	5,8	5,3	6,1
x	6,5 x 190	6,1	7,1	6,4	7,4	6,7	7,8	7,0	8,2
x	6,5 x 220	7,3	8,4	7,6	8,8	7,9	9,2	8,3	9,7
x	8,2 x 90	3,1	3,5	3,2	3,7	3,3	3,9	3,5	4,1
x	8,2 x 130	3,1	3,5	3,2	3,7	3,3	3,9	3,5	4,1
x	8,2 x 160	4,8	5,6	5,0	5,9	5,3	6,1	5,5	6,4
x	8,2 x 190	6,4	7,5	6,7	7,8	7,0	8,2	7,4	8,6
x	8,2 x 220	7,6	8,9	8,0	9,3	8,4	9,7	8,8	10,2
x	8,2 x 245	8,6	10,0	9,0	10,4	9,4	10,9	9,9	11,5
x	8,2 x 275	8,6	10,0	9,0	10,4	9,4	10,9	9,9	11,5
x	8,2 x 300	10,8	12,3	11,3	13,2	11,9	13,8	12,5	14,5
x	8,2 x 330	10,8	12,6	11,3	13,2	11,9	13,8	12,5	14,5

a] To obtain the design load-carrying capacity in accordance with Eurocode 5 equation 2.17, the values in the table must be multiplied by k_{mod} and divided by γ_m = 1.3.

For assumptions of the calculated values, see Page 10.



CHARACTERISTIC LOAD-CARRYING CAPACITY JOIST HANGER JOINT [a]



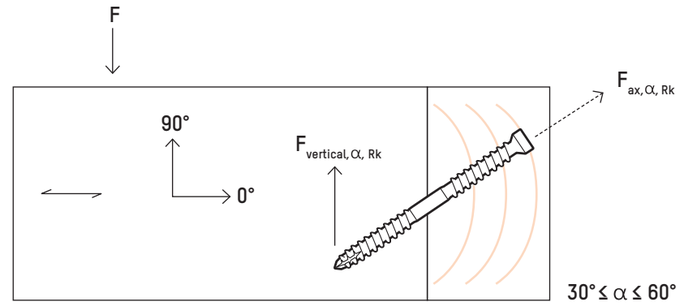
CE marking EN 14592	dk x L [mm]	30° $F_{vertikal,30,Rk}$ [kN]		45° $F_{vertikal,45,Rk}$ [kN]		60° $F_{vertikal,60,Rk}$ [kN]	
		C14	C24	C14	C24	C14	C24
	6,5 x 65	0,8	1,0	1,2	1,4	1,6	1,9
x	6,5 x 90	1,5	1,7	2,1	2,5	2,8	3,2
x	6,5 x 130	1,5	1,7	2,1	2,5	2,8	3,2
x	6,5 x 160	2,3	2,7	3,4	3,9	4,3	5,1
x	6,5 x 190	3,1	3,5	4,5	5,2	5,8	6,7
x	6,5 x 220	3,6	4,2	5,4	6,2	6,9	8,0
x	8,2 x 90	1,5	1,8	2,3	2,6	2,9	3,4
x	8,2 x 130	1,5	1,8	2,3	2,6	2,9	3,4
x	8,2 x 160	2,4	2,8	3,6	4,1	4,6	5,3
x	8,2 x 190	3,2	3,7	4,8	5,5	6,1	7,1
x	8,2 x 220	3,8	4,4	5,6	6,6	7,2	8,4
x	8,2 x 245	4,3	5,0	6,4	7,4	8,2	9,5
x	8,2 x 275	4,3	5,0	6,4	7,4	8,2	9,5
x	8,2 x 300	5,4	6,3	8,0	9,3	10,3	12,0
x	8,2 x 330	5,4	6,3	8,0	9,3	10,3	12,0

a] To obtain the design load-carrying capacity in accordance with Eurocode 5 equation 2.17, the values in the table must be multiplied by k_{mod} and divided by γ_m = 1.3.

For assumptions of the calculated values, see below and Page 10.

The vertical load-carrying capacity is based on that the axial load-carrying capacity of the screw is bearing the entire load.

$F_{vertical,\alpha,\ Rk} = F_{ax,\alpha,\ Rk} \times \sin\alpha$



FOR DESIGN ENGINEERS

FALCK & CO.

Find more information with your local ESSVE distributor.
Find contact details on: essve.com

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