

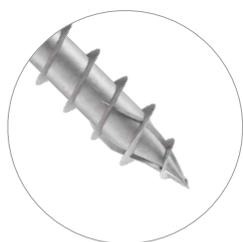


TLL EVO



FLANGE-HEAD SCREW FOR TIMBER

- Same mechanical performance as TLL, but with the added corrosion resistance of the EVO coating, based on epoxy and aluminium flakes
- With the 3 THORNS tip, screw grip becomes more reliable and faster, while maintaining the usual mechanical performance
- It can be used for service class 3 outdoor applications and under class C4 atmospheric corrosion conditions (coastal and industrial areas) tested by the Research Institutes of Sweden - RISE
- Coating suitable for outdoor use on wood species with an acidity level (pH) greater than 4, such as spruce, larch and pine



ENVIRONMENT

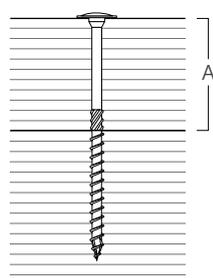


MATERIAL



d_1 [mm]	d_k [mm]	CODE	L [mm]	b [mm]	A [mm]	pcs
6 TX 30	15,50	TLLEVO680	80	50	30	100
		TLLEVO6100	100	60	40	100
		TLLEVO6120	120	75	45	100
		TLLEVO6140	140	75	65	100
		TLLEVO6160	160	75	85	100
		TLLEVO6180	180	75	105	100
8 TX 40	19,00	TLLEVO6200	200	75	125	100
		TLLEVO8100	100	52	48	50
		TLLEVO8120	120	80	40	50
		TLLEVO8140	140	80	60	50
		TLLEVO8160	160	100	60	50
		TLLEVO8180	180	100	80	50
		TLLEVO8200	200	100	100	50
		TLLEVO8220	220	100	120	50
TLLEVO8240	240	100	140	50		
TLLEVO8280	280	100	180	50		

A maximum fastening thickness



RELATED PRODUCTS



WBAR
WASHER WITH GASKET FOR METAL SHEET

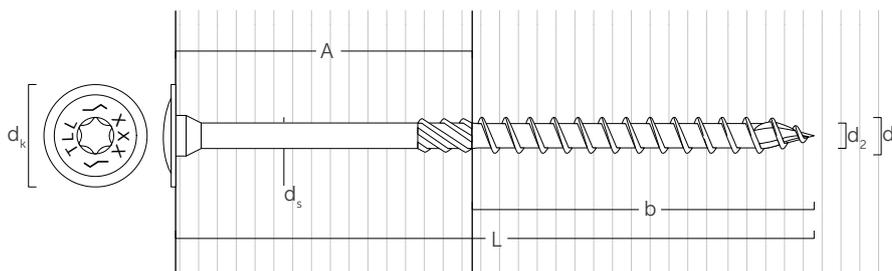


CPL
PRE-PAINTED METAL SHEET CAP WITH PE GASKET



LEWIS AND SNAIL BITS
TWIST DRILL BITS FOR DRILLING

GEOMETRY AND MECHANICAL CHARACTERISTICS



nominal diameter	d ₁	[mm]	6	8
head diameter	d _k	[mm]	15,50	19,00
internal thread diameter	d ₂	[mm]	3,95	5,40
shank diameter	d _s	[mm]	4,30	5,80
pre-drilling hole diameter ⁽¹⁾	d _v	[mm]	4,0	5,0
characteristic yield moment	M _{y,k}	[Nm]	9,5	20,1
characteristic withdrawal-resistance parameter ⁽²⁾	f _{ax,k}	[N/mm ²]	11,7	11,7
associated density	ρ _a	[kg/m ³]	350	350
characteristic head-pull-through parameter ⁽²⁾	f _{head,k}	[N/mm ²]	10,5	10,5
associated density	ρ _a	[kg/m ³]	350	350
characteristic tensile strength	f _{tens,k}	[kN]	11,3	20,1

⁽¹⁾Pre-drilling valid for softwood.

⁽²⁾Valid for softwood - maximum density 440 kg/m³.

For applications with different materials or with high density please see ETA-11/0030.

STRUCTURAL VALUES

geometry				SHEAR		TENSION	
				timber-to-timber		thread withdrawal ⁽¹⁾	head pull-through ⁽²⁾
d ₁	L	b	A	R _{V,k}	R _{ax,k}	R _{head,k}	
[mm]	[mm]	[mm]	[mm]	[kN]	[kN]	[kN]	
6	80	50	30	2,15	3,79	2,72	
	100	60	40	2,35	4,55	2,72	
	120	75	45	2,35	5,68	2,72	
	140	75	65	2,35	5,68	2,72	
	160	75	85	2,35	5,68	2,72	
	180	75	105	2,35	5,68	2,72	
	200	75	125	2,35	5,68	2,72	
8	100	52	48	3,71	5,25	4,09	
	120	80	40	3,41	8,08	4,09	
	140	80	60	3,71	8,08	4,09	
	160	100	60	3,71	10,10	4,09	
	180	100	80	3,71	10,10	4,09	
	200	100	100	3,71	10,10	4,09	
	220	100	120	3,71	10,10	4,09	
	240	100	140	3,71	10,10	4,09	
280	100	180	3,71	10,10	4,09		

NOTES

⁽¹⁾ The axial thread withdrawal resistance was calculated considering a 90° ε angle between the grain and the connector and for a fixing length of b.

⁽²⁾ The axial resistance to head pull-through was calculated using timber elements.

GENERAL PRINCIPLES

- Characteristic values comply with the EN 1995:2014 standard in accordance with ETA-11/0030.
- Design values can be obtained from characteristic values as follows:

$$R_d = \frac{R_k \cdot k_{mod}}{\gamma_M}$$

The coefficients γ_M and k_{mod} should be taken according to the current regulations used for the calculation.

- For the mechanical resistance values and the geometry of the screws, reference was made to ETA-11/0030.
- For the calculation process a timber characteristic density $\rho_k = 385 \text{ kg/m}^3$ has been considered.
- Values were calculated considering the threaded part as being completely inserted into the wood.
- Dimensioning and verification of the timber elements must be carried out separately.
- The characteristic shear strength are calculated for screws inserted without pre-drilling hole.
- The screws must be positioned in accordance with the minimum distances.