

ESCRFT Full threaded cylinder head screw

ESCRFT is a full threaded screws with a cylinder head, suitable for hidden timber to timber assembly. It can also be used for timber reinforcement.

Egenskaper

Material

- Hardened carbon steel
- Electrogalvanized blue passivated

Advantages

- **Cylinder head:** ideal for discreet timber/timber assembly with head flush with surface or sunk into timber
- **Full asymmetrical thread** for a maximum withdrawal capacity, allows compressive load bearing
- **Half cut point:** reduces splitting effect and allows smaller minimum spacings and edge distances. No pre-drilling needed, easier installation when skewed
- **Torx driven:** reduces the wear of the bit

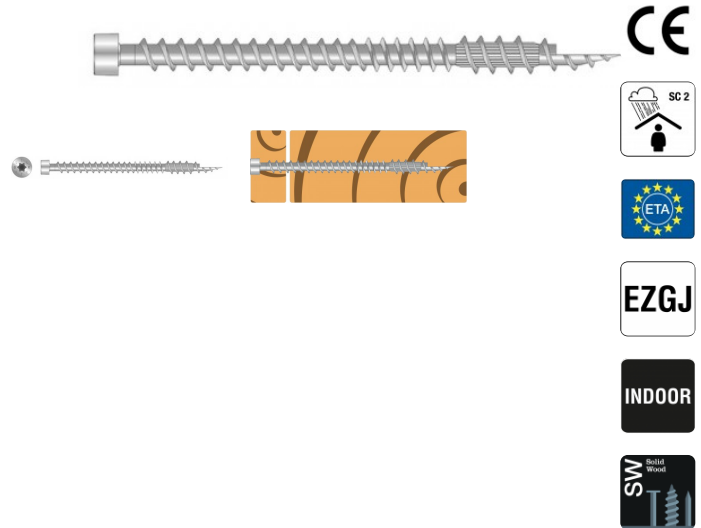
Anvendelse

Suitable on

- Solid Timber, Glulam timber, CLT, Wood-based panels

When to use

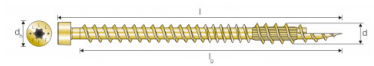
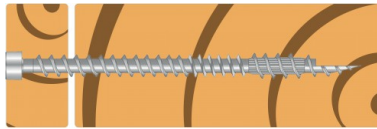
- Timber to timber assembly
- Timber reinforcement (to transversile tension or compression)
- Crossed pair of screws assembly for optimal capacity



ESCRFT
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Teknisk data

Dimensjoner



Art. nr.	DB nr.	NOBB nr.	Dimensjoner [mm]					Bit	Qty/box
			d	l	d _h	d ₁	l _g		
ESCRFT10.0X450	-	-	10	450	13.4	6.1	426	T-50	25
ESCRFT10.0X500	-	-		500	13.4	6.1	476	T-50	25
ESCRFT10.0X600	-	-		600	13.4	6.1	576	T-50	25
ESCRFT10.0X800	-	-		800	13.4	6.1	776	T-50	15
ESCRFT10.0X1000	-	-		1000	13.4	6.1	976	T-50	15

Produktkarakteristiske egenskaber

Art. nr.	Characteristic Yield Moment – M _{y,k} [Nm]	Karakteristisk uttrekks parameter - f _{ax,k,90°} [N/mm ²]	Karakteristisk trekkstyrke - f _{tens,k} [kN]	Karakteristisk hovdegjennomtrekningsparameter - f _{head,k} [Nm]
ESCRFT10	36.7	12.5	40	55

ESCRFT
Full threaded cylinder head screw

Montering

Spacing and Edge distances - Shear loaded screws

Art. nr.	Minimum edge distances and spacing for shear loaded screws [mm]											
	Angle between load and grain = 0°						Angle between load and grain = 90°					
	a _{1.0}	a _{2.0}	a _{3.t.0}	a _{3.c.0}	a _{4.t.0}	a _{4.c.0}	a _{1.90}	a _{2.90}	a _{3.t.90}	a _{3.c.90}	a _{4.t.90}	a _{4.c.90}
ESCRFT10	50	40	80	40	30	30	40	40	80	70	40	30

a₁ and a₂ can be multiplied by 0.85 for panel/timber assembly, and by 0.7 for steel/timber assembly.

Spacing and edge distances - Axially loaded screws

Art. nr.	Minimum edge distances and spacing for axially loaded screws [mm]			
	a ₁	a ₂	a _{3.c}	a _{4.c}
ESCRFT10	50	50	50	40

ESCRFT
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Bæreevner

Timber to Timber characteristic capacities

Art. nr.	Product characteristic capacities - Timber to Timber C24															
	Axial resistance		Shear resistance parallel to the grain depending of t_1 [Rv.0.k] [kN]							Shear resistance perpendicular to the grain depending of t_1 [Rv.90.k] [kN]						
	t_1 [mm]	$R_{ax.k}$ [kN]	35 [mm]	40 [mm]	45 [mm]	60 [mm]	75 [mm]	80 [mm]	≥100 [mm]	35 [mm]	40 [mm]	45 [mm]	60 [mm]	75 [mm]	80 [mm]	≥100 [mm]
ESCRFT10.0X450	225	24.25	-	9.1	9.77	10.01	10.01	10.01	10.01	-	6.59	7.02	8.18	8.18	8.18	8.18
ESCRFT10.0X500	250	27.38	-	9.1	9.77	10.01	10.01	10.01	10.01	-	6.59	7.02	8.18	8.18	8.18	8.18
ESCRFT10.0X600	300	33.63	-	9.1	9.77	10.01	10.01	10.01	10.01	-	6.59	7.02	8.18	8.18	8.18	8.18
ESCRFT10.0X800	400	40	-	9.1	9.77	10.01	10.01	10.01	10.01	-	6.59	7.02	8.18	8.18	8.18	8.18
ESCRFT10.0X1000	500	40	-	9.1	9.77	10.01	10.01	10.01	10.01	-	6.59	7.02	8.18	8.18	8.18	8.18

These capacities are valid for:

- Timber element under the head with thickness $\leq t_1$ disclosed in adjacent column
- Screw axis between 45° and 90° from timber grain for ESCR(XXX), and 90° from timber grain for all other screws.

For tightening screws (partially threaded), t_1 dimension is the maximum thickness of the under-head timber member for which the thread is fully in the pointside timber member, for an optimum installation and tightening.

The shear capacities are given for several timber thicknesses t_1 of the under-head member under the following configurations:

- Load axis at 0° from both timber grains $R_{v,0°.k}$
- Load axis at 90° from both timber grains $R_{v,90°.k}$

These capacities are valid for C24 timber grades or higher

The pre-drilled hypothesis for capacity and distances calculation is fulfilled.

For partial threaded screws, capacities are only given for configurations where the thread is less than 5mm in under-head timber member, in order to achieve optimum installation and tightening.

Clause (2) in 8.3.1.2 from EN1995-1-1:2004+A2:2014 about embedment length is ignored in these calculations.

Timber to Timber - Cross pair of screws

Art. nr.	Crossed pair of screws - characteristic capacities									
	Header	Joist			Installation distance		Characteristic capacities (Pull-out / Buckling) $R_{v, pair} = \min(R_{w,k, pair}; R_{buck,k, pair})$ [kN]			
		h_j min [mm]	1 pair	2 pairs	m [mm]	m_i [mm]	1 pair		2 pairs	
			b_j min [mm]	b_j min 2 [mm]			$R_{w,k, pair}$ [kN]	$R_{buck,k, pair}$ [kN]	$R_{w,k, pair}$ [kN]	$R_{buck,k, pair}$ [kN]
ESCRFT10.0X450	170	331	105	155	164	169	34.29	17.14 + 19.62 /kmod	64	31.99 + 36.62 /kmod
ESCRFT10.0X500	187	366	105	155	181	186	38.71	19.35 + 19.62 /kmod	72.2	36.12 + 36.62 /kmod
ESCRFT10.0X600	223	437	105	155	217	222	47.55	23.77 + 19.62 /kmod	88.7	44.36 + 36.62 /kmod
ESCRFT10.0X800	293	578	105	155	287	292	56.57	28.28 + 19.62 /kmod	105.6	52.78 + 36.62 /kmod
ESCRFT10.0X1000	364	719	105	155	358	363	56.57	28.28 + 19.62 /kmod	105.6	52.78 + 36.62 /kmod

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