

ESCRFTC

Fully Threaded Countersunk Structural Wood Screw

ESCRFTC is a full threaded screw with a countersunk head, suitable for hidden timber to timber assembly and steel to timber assembly. It can also be used for timber reinforcement.

[Find it in the Solid Wood Application >](#)

Egenskaper

Material

- Hardened carbon steel
- Electrogalvanized yellow passivated

Advantages

- **Countersunk head:** ideal for timber/timber or steel/timber assembly with head flush with surface
- **Underhead ribs:** for a clear finish and no timber superficial split
- **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 for

- Solid Timber, Glulam timber, CLT, Wood-based panels
- Pre-drilled steel plate

When to use

- Timber to timber assembly
- Steel to timber assembly
- Timber reinforcement (to transversile tension or compression)

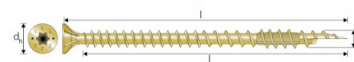


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Teknisk data

Dimensjoner



Art. nr.	Dimensjoner [mm]							Vekt [kg]
	l	l _g	d ₁	d	d _h	Bit	Box Quantity	
ESCRFTC8.0X120	120	110	5.2	8	15	T-40	50	0.026
ESCRFTC8.0X140	140	130	5.2		15	T-40	50	0.03
ESCRFTC8.0X160	160	150	5.2		15	T-40	50	0.035
ESCRFTC8.0X180	180	170	5.2		15	T-40	50	0.039
ESCRFTC8.0X200	200	190	5.2		15	T-40	50	0.043
ESCRFTC8.0X220	220	210	5.2		15	T-40	50	0.047
ESCRFTC8.0X240	240	230	5.2		15	T-40	50	0.051
ESCRFTC8.0X260	260	250	5.2		15	T-40	50	0.055
ESCRFTC8.0X280	280	270	5.2		15	T-40	50	0.059
ESCRFTC8.0X300	300	290	5.2		15	T-40	50	0.063
ESCRFTC8.0X350	350	340	5.2		15	T-40	50	0.072
ESCRFTC8.0X400	400	390	5.2		15	T-40	50	0.084
ESCRFTC10.0X120	120	108	6.1	10	18.5	T-50	50	0.038
ESCRFTC10.0X160	160	148	6.1		18.5	T-50	-	0.05
ESCRFTC10.0X180	180	168	6.1		18.5	T-50	50	0.056
ESCRFTC10.0X200	200	188	6.1		18.5	T-50	50	0.062
ESCRFTC10.0X220	220	208	6.1		18.5	T-50	50	0.068
ESCRFTC10.0X240	240	228	6.1		18.5	T-50	50	0.074
ESCRFTC10.0X260	260	248	6.1		18.5	T-50	50	0.08
ESCRFTC10.0X280	280	268	6.1		18.5	T-50	50	0.086
ESCRFTC10.0X300	300	288	6.1		18.5	T-50	50	0.092
ESCRFTC10.0X350	350	338	6.1		18.5	T-50	50	0.11
ESCRFTC10.0X400	400	388	6.1		18.5	T-50	50	0.12
ESCRFTC12.0X200	200	180	6.8	12	20	T-50	25	0.068
ESCRFTC12.0X220	220	200	6.8		20	T-50	25	0.092
ESCRFTC12.0X240	240	220	6.8		20	T-50	25	0.085
ESCRFTC12.0X260	260	240	6.8		20	T-50	25	0.11
ESCRFTC12.0X280	280	260	6.8		20	T-50	25	0.1
ESCRFTC12.0X300	300	280	6.8		20	T-50	25	0.11
ESCRFTC12.0X350	350	330	6.8		20	T-50	25	0.13
ESCRFTC12.0X400	400	380	6.8		20	T-50	25	0.15
ESCRFTC12.0X450	450	430	6.8		20	T-50	25	0.062
ESCRFTC12.0X500	500	480	6.8		20	T-50	25	0.2
ESCRFTC12.0X600	600	580	6.8		20	T-50	25	0.24

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Produktkarakteristiske egenskaber

Art. nr.	Yield Moment – $M_{y,k}$ [Nm]	Karakteristisk uttrekks parameter - $f_{ax,k,90^\circ}$ [N/mm ²]	Karakteristisk hovdegjennomtrekningsparameter - $f_{head,k}$ [N/mm ²]	Karakteristisk trekkstyrke - $f_{tens,k}$ [kN]	Torsional Strength $f_{tor,k}$ [Nm]
ESCRFTC8.0	20.3	13.1	12.4	24.1	25.8
ESCRFTC10.0	36.7	12.5	12.2	40	55
ESCRFTC12.0	48.5	11.2	11	46.7	73

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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}
ESCRFTC8.0	40	32	80	32	24	24	32	32	80	56	32	24
ESCRFTC10.0	50	40	80	40	30	30	40	40	80	70	40	30
ESCRFTC12.0	60	48	84	48	36	36	48	48	84	84	48	36

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}
ESCRFTC8.0	40	40	40	32
ESCRFTC10.0	50	50	50	40
ESCRFTC12.0	60	60	60	48

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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]
ESCRFTC8.0X220	110	10.48	5.78	5.99	5.99	5.99	5.99	5.99	5.99	4.65	5.03	5.33	5.4	5.4	5.4	5.4
ESCRFTC8.0X240	120	11.53	6.05	6.25	6.25	6.25	6.25	6.25	6.25	4.65	5.03	5.43	5.56	5.56	5.56	5.56
ESCRFTC8.0X260	130	12.58	6.31	6.51	6.51	6.51	6.51	6.51	6.51	4.65	5.03	5.43	5.56	5.56	5.56	5.56
ESCRFTC8.0X280	140	13.62	6.33	6.74	6.74	6.74	6.74	6.74	6.74	4.65	5.03	5.43	5.56	5.56	5.56	5.56
ESCRFTC8.0X300	150	14.67	6.33	6.74	6.74	6.74	6.74	6.74	6.74	4.65	5.03	5.43	5.56	5.56	5.56	5.56
ESCRFTC8.0X350	175	17.29	6.33	6.74	6.74	6.74	6.74	6.74	6.74	4.65	5.03	5.43	5.56	5.56	5.56	5.56
ESCRFTC8.0X400	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ESCRFTC10.0X240	120	13.38	-	7.87	8.23	8.35	8.35	8.35	8.35	-	6.59	6.85	7.43	7.43	7.43	7.43
ESCRFTC10.0X260	130	14.63	-	8.18	8.54	8.66	8.66	8.66	8.66	-	6.59	7.02	7.74	7.74	7.74	7.74
ESCRFTC10.0X280	140	15.88	-	8.49	8.85	8.98	8.98	8.98	8.98	-	6.59	7.02	8.06	8.06	8.06	8.06
ESCRFTC10.0X300	150	17.13	-	8.8	9.16	9.29	9.29	9.29	9.29	-	6.59	7.02	8.18	8.18	8.18	8.18
ESCRFTC10.0X350	175	20.25	-	9.05	9.77	10.01	10.01	10.01	10.01	-	6.59	7.02	8.18	8.18	8.18	8.18
ESCRFTC10.0X400	200	21.13	-	9.05	9.77	10.01	10.01	10.01	10.01	-	6.59	7.02	8.18	8.18	8.18	8.18
ESCRFTC12.0X280	140	15.46	-	-	-	-	-	10.1	10.1	-	-	-	-	-	8.9	8.9
ESCRFTC12.0X300	150	16.8	-	-	-	-	-	10.44	10.44	-	-	-	-	-	9.24	9.24
ESCRFTC12.0X350	175	20.16	-	-	-	-	-	11.28	11.28	-	-	-	-	-	10.08	10.08
ESCRFTC12.0X400	200	23.52	-	-	-	-	-	12.12	12.12	-	-	-	-	-	10.08	10.08
ESCRFTC12.0X450	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ESCRFTC12.0X500	250	30.24	-	-	-	-	-	12.47	12.47	-	-	-	-	-	10.08	10.08

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.

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Steel to Timber characteristic capacities

Art. nr.	Product characteristic capacities - Steel to Timber C24				
	Axial resistance [R _{ax.st.k}] [kN]	Shear resistance - Thin plate		Shear Resistance - Thick steel	
		R _{v.0.st.k} [kN]	R _{v.90.st.k} [kN]	R _{v.0.st.k} [kN]	R _{v.90.st.k} [kN]
ESCRFTC8.0X180	-	-	-	-	-
ESCRFTC8.0X200	-	-	-	-	-
ESCRFTC8.0X220	22.01	6.74	5.56	9.53	7.86
ESCRFTC8.0X240	24.1	6.74	5.56	9.53	7.86
ESCRFTC8.0X260	24.1	6.74	5.56	9.53	7.86
ESCRFTC8.0X280	24.1	6.74	5.56	9.53	7.86
ESCRFTC8.0X300	24.1	6.74	5.56	9.53	7.86
ESCRFTC8.0X350	24.1	6.74	5.56	9.53	7.86
ESCRFTC8.0X400	-	-	-	-	-
ESCRFTC10.0X240	28.5	10.01	8.18	14.16	11.56
ESCRFTC10.0X260	31	10.01	8.18	14.16	11.56
ESCRFTC10.0X280	33.5	10.01	8.18	14.16	11.56
ESCRFTC10.0X300	36	10.01	8.18	14.16	11.56
ESCRFTC10.0X350	40	10.01	8.18	14.16	11.56
ESCRFTC10.0X400	40	10.01	8.18	14.16	11.56
ESCRFTC12.0X280	34.94	12.47	10.08	17.55	14.26
ESCRFTC12.0X300	37.63	12.47	10.08	17.64	14.26
ESCRFTC12.0X350	44.35	12.47	10.08	17.64	14.26
ESCRFTC12.0X400	46.7	12.47	10.08	17.64	14.26
ESCRFTC12.0X450	-	-	-	-	-
ESCRFTC12.0X500	46.7	12.47	10.08	17.64	14.26

Shear capacities are given for thick ($t_{st} = d$) and thin ($t_{st} = 0,5xd$) steel plates under the following configurations:

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

These capacities are valid for C24 timber grades or higher.

For intermediate steel thicknesses, capacities shall be calculated by linear interpolation between the limiting thin and thick plate values.

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

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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]
ESCRFTC8.0X220	88	168	84	124	82	87	14.82	7.41 + 13.99 /kmod	27.66	13.82 + 26.11 /kmod
ESCRFTC8.0X240	95	182	84	124	89	94	16.3	8.15 + 13.99 /kmod	30.42	15.21 + 26.11 /kmod
ESCRFTC8.0X260	102	196	84	124	96	101	17.79	8.89 + 13.99 /kmod	33.19	16.59 + 26.11 /kmod
ESCRFTC8.0X280	109	210	84	124	103	108	19.27	9.63 + 13.99 /kmod	35.95	17.97 + 26.11 /kmod
ESCRFTC8.0X300	117	225	84	124	111	116	20.75	10.37 + 13.99 /kmod	38.72	19.35 + 26.11 /kmod
ESCRFTC8.0X350	134	260	84	124	128	133	24.45	12.22 + 13.99 /kmod	45.63	22.81 + 26.11 /kmod
ESCRFTC8.0X400	-	-	-	-	-	-	-	-	-	-
ESCRFTC10.0X240	95	182	105	155	89	94	18.92	9.45 + 19.62 /kmod	35.3	17.64 + 36.62 /kmod
ESCRFTC10.0X260	102	196	105	155	96	101	20.68	10.34 + 19.62 /kmod	38.6	19.29 + 36.62 /kmod
ESCRFTC10.0X280	109	210	105	155	103	108	22.45	11.22 + 19.62 /kmod	41.89	20.94 + 36.62 /kmod
ESCRFTC10.0X300	117	225	105	155	111	116	24.22	12.1 + 19.62 /kmod	45.19	22.59 + 36.62 /kmod
ESCRFTC10.0X350	134	260	105	155	128	133	28.64	14.31 + 19.62 /kmod	53.44	26.72 + 36.62 /kmod
ESCRFTC10.0X400	152	295	105	155	146	151	29.88	14.93 + 19.62 /kmod	55.75	27.87 + 36.62 /kmod
ESCRFTC12.0X260	-	-	-	-	-	-	-	-	-	-
ESCRFTC12.0X280	109	210	126	186	103	108	21.86	10.92 + 24.81 /kmod	40.79	20.39 + 46.29 /kmod
ESCRFTC12.0X300	117	225	126	186	111	116	23.76	11.87 + 24.81 /kmod	44.34	22.16 + 46.29 /kmod
ESCRFTC12.0X350	134	260	126	186	128	133	28.51	14.25 + 24.81 /kmod	53.2	26.6 + 46.29 /kmod
ESCRFTC12.0X400	152	295	126	186	146	151	33.26	16.63 + 24.81 /kmod	62.07	31.03 + 46.29 /kmod
ESCRFTC12.0X450	-	-	-	-	-	-	-	-	-	-
ESCRFTC12.0X500	187	366	126	186	181	186	42.77	21.38 + 24.81 /kmod	79.8	39.9 + 46.29 /kmod

