

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 >](#)

### Ominaisuudet

#### Materiaali

- Hardened carbon steel
- Electrogalvanized yellow passivated

#### Hyödyt

- **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

### Sovellus

#### Liitos

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

#### Käyttötarkoitus

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



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## Technical Data

Mitat ja ominaisarvot



Tuotenro	Mitat [mm]						Määrä / laatikko
	l	l <sub>g</sub>	d <sub>1</sub>	d	d <sub>h</sub>	Bit	
ESCRFTC8.0X120	120	110	5.2	8	15	T-40	50
ESCRFTC8.0X140	140	130	5.2	8	15	T-40	50
ESCRFTC8.0X160	160	150	5.2	8	15	T-40	50
ESCRFTC8.0X180	180	170	5.2	8	15	T-40	50
ESCRFTC8.0X200	200	190	5.2	8	15	T-40	50
ESCRFTC8.0X220	220	210	5.2	8	15	T-40	50
ESCRFTC8.0X240	240	230	5.2	8	15	T-40	50
ESCRFTC8.0X260	260	250	5.2	8	15	T-40	50
ESCRFTC8.0X280	280	270	5.2	8	15	T-40	50
ESCRFTC8.0X300	300	290	5.2	8	15	T-40	50
ESCRFTC8.0X350	350	340	5.2	8	15	T-40	50
ESCRFTC8.0X400	400	390	5.2	8	15	T-40	50
ESCRFTC10.0X120	120	108	6.1	10	18.5	T-50	50
ESCRFTC10.0X160	160	148	6.1	10	18.5	T-50	-
ESCRFTC10.0X180	180	168	6.1	10	18.5	T-50	50
ESCRFTC10.0X200	200	188	6.1	10	18.5	T-50	50
ESCRFTC10.0X220	220	208	6.1	10	18.5	T-50	50
ESCRFTC10.0X240	240	228	6.1	10	18.5	T-50	50
ESCRFTC10.0X260	260	248	6.1	10	18.5	T-50	50
ESCRFTC10.0X280	280	268	6.1	10	18.5	T-50	50
ESCRFTC10.0X300	300	288	6.1	10	18.5	T-50	50
ESCRFTC10.0X350	350	338	6.1	10	18.5	T-50	50
ESCRFTC10.0X400	400	388	6.1	10	18.5	T-50	50
ESCRFTC12.0X200	200	180	6.8	12	20	T-50	25
ESCRFTC12.0X220	220	200	6.8	12	20	T-50	25
ESCRFTC12.0X240	240	220	6.8	12	20	T-50	25
ESCRFTC12.0X260	260	240	6.8	12	20	T-50	25
ESCRFTC12.0X280	280	260	6.8	12	20	T-50	25
ESCRFTC12.0X300	300	280	6.8	12	20	T-50	25
ESCRFTC12.0X350	350	330	6.8	12	20	T-50	25
ESCRFTC12.0X400	400	380	6.8	12	20	T-50	25
ESCRFTC12.0X450	450	430	6.8	12	20	T-50	25
ESCRFTC12.0X500	500	480	6.8	12	20	T-50	25
ESCRFTC12.0X600	600	580	6.8	12	20	T-50	25

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## **Asennus**

Spacing and Edge distances - Shear loaded screws

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Spacing and edge distances - Axially loaded screws

Table "Spacing and edge distances - Axially loaded screws" cannot be displayed : no references available.

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## Ominaisarvot

Timber to Timber characteristic capacities

Tuotenumero	Product characteristic capacities - Timber to Timber C24															
	Axial resistance		Shear resistance parallel to the grain depending of $t_1$ [R <sub>v.0.k</sub> ] [kN]							Shear resistance perpendicular to the grain depending of $t_1$ [R <sub>v.90.k</sub> ] [kN]						
	$t_1$ [mm]	R <sub>ax.k</sub> [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.OX220	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.OX240	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.OX260	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.OX280	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.OX300	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.OX350	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.OX400	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ESCRFTC10.OX240	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.OX260	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.OX280	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.OX300	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.OX350	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.OX400	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.OX280	140	15.46	-	-	-	-	-	10.1	10.1	-	-	-	-	-	8.9	8.9
ESCRFTC12.OX300	150	16.8	-	-	-	-	-	10.44	10.44	-	-	-	-	-	9.24	9.24
ESCRFTC12.OX350	175	20.16	-	-	-	-	-	11.28	11.28	-	-	-	-	-	10.08	10.08
ESCRFTC12.OX400	200	23.52	-	-	-	-	-	12.12	12.12	-	-	-	-	-	10.08	10.08
ESCRFTC12.OX450	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ESCRFTC12.OX500	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

Tuotenro	Product characteristic capacities - Steel to Timber C24				
	Axial resistance [R <sub>ax.st.k</sub> ] [kN]	Shear resistance - Thin plate		Shear Resistance - Thick steel	
		R <sub>v,0.st.k</sub> [kN]	R <sub>v,90.st.k</sub> [kN]	R <sub>v,0.st.k</sub> [kN]	R <sub>v,90.st.k</sub> [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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## Fully Threaded Countersunk Structural Wood Screw

Timber to timber - Cross pair of screws

Tuotenro	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

