

ESCRFTZ

Fully Threaded Cylinder Head Structural Screw

The ESCRFTZ cylindrical head structural wood screw with full thread is designed for timber framing, framework and reinforcement. This screw can be used for a wide range of applications in professional wood construction.

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

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Material

- Hardened carbon steel
- Electrogalvanized yellow 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
- **Torx driven:** reduces the wear of the bit

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Suitable for

- 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**



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Technical Data

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Tuotenro	Mitat [mm]					Bit	Box Quantity	Paino [kg]
	d	l	d _h	d ₁	l _g			
ESCRFTZ8.0X120	8	120	10.2	5.2	110	T-40	50	0.025
ESCRFTZ8.0X140		140	10.2	5.2	130	T-40	50	0.032
ESCRFTZ8.0X160		160	10.2	5.2	150	T-40	50	0.007
ESCRFTZ8.0X180		180	10.2	5.2	170	T-40	50	0.008
ESCRFTZ8.0X200		200	10.2	5.2	190	T-40	50	0.008
ESCRFTZ8.0X220		220	10.2	5.2	210	T-40	50	0.009
ESCRFTZ8.0X240		240	10.2	5.2	230	T-40	50	0.01
ESCRFTZ8.0X260		260	10.2	5.2	250	T-40	50	0.011
ESCRFTZ8.0X280		280	10.2	5.2	270	T-40	50	0.012
ESCRFTZ8.0X300		300	10.2	5.2	290	T-40	50	0.012
ESCRFTZ8.0X350		350	10.2	5.2	340	T-40	50	0.014
ESCRFTZ8.0X400		400	10.2	5.2	390	T-40	50	0.017

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Tuotenro	Yield Moment – $M_{y,k}$ [Nm]	Tyypillinen vetoparametri - $f_{ax,k,90^\circ}$ [N/mm ²]	Tyypillinen vetolujuus - $f_{tens,k}$ [kN]	Torsional Strength $f_{tor,k}$ [kN]
ESCRFTZ8.0X120	20.3	13.1	24.1	-
ESCRFTZ8.0X140	20.3	13.1	24.1	-
ESCRFTZ8.0X160	20.3	13.1	24.1	-
ESCRFTZ8.0X180	20.3	13.1	24.1	-
ESCRFTZ8.0X200	20.3	13.1	24.1	-
ESCRFTZ8.0X220	20.3	13.1	24.1	-
ESCRFTZ8.0X240	20.3	13.1	24.1	-
ESCRFTZ8.0X260	20.3	13.1	24.1	-
ESCRFTZ8.0X280	20.3	13.1	24.1	-
ESCRFTZ8.0X300	20.3	13.1	24.1	-
ESCRFTZ8.0X350	20.3	13.1	24.1	-
ESCRFTZ8.0X400	20.3	13.1	24.1	-

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Spacing and Edge distances - Shear loaded screws

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

Spacing and edge distances - Axially loaded screws

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Timber to Timber characteristic capacities

Tuotenumro	Product characteristic capacities - Timber to Timber C24															
	Axial resistance		Shear resistance parallel to the grain depending of t ₁ [R _{v.0.k}] [kN]							Shear resistance perpendicular to the grain depending of t ₁ [R _{v.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]
ESCRFTZ8.0X120	60	5.24	4.47	4.68	4.68	4.68	4.68	4.68	-	3.63	3.82	4.02	4.09	4.02	3.82	-
ESCRFTZ8.0X140	70	6.29	4.74	4.94	4.94	4.94	4.94	4.94	4.94	3.9	4.09	4.29	4.35	4.35	4.35	4.09
ESCRFTZ8.0X160	80	7.34	5	5.2	5.2	5.2	5.2	5.2	5.2	4.16	4.35	4.55	4.61	4.61	4.61	4.61
ESCRFTZ8.0X180	90	8.38	5.26	5.46	5.46	5.46	5.46	5.46	5.46	4.42	4.61	4.81	4.87	4.87	4.87	4.87
ESCRFTZ8.0X200	100	9.43	5.52	5.73	5.73	5.73	5.73	5.73	5.73	4.65	4.87	5.07	5.14	5.14	5.14	5.14
ESCRFTZ8.0X220	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
ESCRFTZ8.0X240	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
ESCRFTZ8.0X260	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ESCRFTZ8.0X280	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ESCRFTZ8.0X300	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
ESCRFTZ8.0X350	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ESCRFTZ8.0X400	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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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Crossed pairs of screws - characteristic capacities

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]			
	b_h min [mm]	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]
ESCRFTZ8.0X120	64	128	84	124	68	73	7.41	3.7 + 13.99 /kmod	13.82	6.91 + 26.11 /kmod
ESCRFTZ8.0X140	64	128	84	124	68	73	8.89	4.44 + 13.99 /kmod	16.59	8.29 + 26.11 /kmod
ESCRFTZ8.0X160	67	128	84	124	68	73	10.37	5.18 + 13.99 /kmod	19.35	9.67 + 26.11 /kmod
ESCRFTZ8.0X180	74	140	84	124	68	73	11.85	5.92 + 13.99 /kmod	22.12	11.06 + 26.11 /kmod
ESCRFTZ8.0X200	81	154	84	124	75	80	13.33	6.66 + 13.99 /kmod	24.89	12.44 + 26.11 /kmod
ESCRFTZ8.0X220	88	168	84	124	82	87	14.82	7.41 + 13.99 /kmod	27.65	13.82 + 26.11 /kmod
ESCRFTZ8.0X240	95	182	84	124	89	94	16.3	8.15 + 13.99 /kmod	30.42	15.21 + 26.11 /kmod
ESCRFTZ8.0X260	102	196	84	124	96	101	17.78	8.89 + 13.99 /kmod	33.18	16.59 + 26.11 /kmod
ESCRFTZ8.0X280	109	210	84	124	103	108	19.26	9.63 + 13.99 /kmod	35.95	17.97 + 26.11 /kmod
ESCRFTZ8.0X300	117	225	84	124	111	116	20.74	10.37 + 13.99 /kmod	38.71	19.35 + 26.11 /kmod
ESCRFTZ8.0X350	134	260	84	124	128	133	24.45	12.22 + 13.99 /kmod	45.63	22.81 + 26.11 /kmod
ESCRFTZ8.0X400	152	295	84	124	146	151	28.15	14.07 + 13.99 /kmod	52.54	26.27 + 26.11 /kmod

