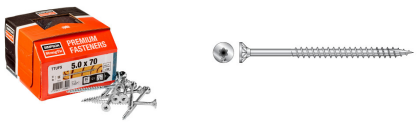
Tekniskt datablad

TTUFS
Träskruv Försänkt - Elförzinkad

TTUFS Försänkta träskruvar i elförzinkat utförande för applikationer i trä. Skruvarna har en tandad gänga för att reducera indrivningsmomentet och en skärande spets som reducerar risken för flis- och sprickbildning. Skruvlängder från 80 mm har en stamfräs som reducerar indrivningsmomentet ytterligare.

OBS säljs i sverige under varumärket Gunnebo Fastening. För mer info besök gunnebofastening.se



Egenskaper

Material

- Elförzinkat stål

Egenskaper

- Försänkt huvud med rillor under huvudet som skapar en snygg försänkning
- Skärande spets för snabb indrivning och minimal risk för flis- och sprickbildning
- Stamfräs reducerar indrivningsmomentet

Användning

Use on

-

Applikationer

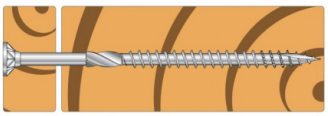
- Anslutning av virkesdelar i trä

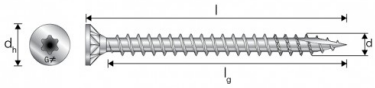
Teknisk data

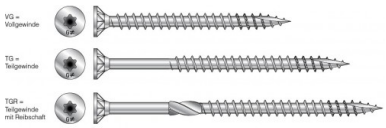
Tekniskt datablad

TTUFS
Träskruv Försänkt - Elförzinkad

Mått







Art. nr.	Art. nr.	Dimensioner [mm]								Qty/box
		d	l	d_h	d_1	l_g	bit	Thread	Thread EU	
TTUFS3.0X16	74414	3	16	6	2	11	T-10	VG	FT	200
TTUFS3.0X20	74415		20	6	2	15	T-10	VG	FT	200
TTUFS3.0X25	74416		25	6	2	20	T-10	VG	FT	200
TTUFS3.0X30	74417		30	6	2	25	T-10	VG	FT	200
TTUFS3.0x40	77606		40	6	2	-	T-10	VG	FT	200
TTUFS3.5X16	74418	3.5	16	7	2.2	11	T-15	VG	FT	200
TTUFS3.5X20	74419		20	7	2.2	15	T-15	VG	FT	200
TTUFS3.5X25	74420		25	7	2.2	20	T-15	VG	FT	200
TTUFS3.5X30	74421		30	7	2.2	25	T-15	VG	FT	200
TTUFS3.5X35	74422		35	7	2.2	30	T-15	VG	FT	200
TTUFS3.5X40	74423		40	7	2.2	35	T-15	VG	FT	200
TTUFS3.5X50 PT	74424		50	7	2.2	30	T-15	TG	PT	200
TTUFS3.5X50 FT	77609		50	7	2.2	45	T-15	VG	FT	200
TTUFS4.0X20	74425	4	20	8	2.5	15	T-20	VG	FT	200
TTUFS4.0X25	74426		25	8	2.5	20	T-20	VG	FT	200
TTUFS4.0X30 PT	77610		25	8	2.5	18	T-20	TG	PT	200
TTUFS4.0X30 FT	74427		30	8	2.5	25	T-20	VG	FT	200
TTUFS4.0X35	74428		35	8	2.5	30	T-20	VG	FT	200
TTUFS4.0X40 PT	77612		40	8	2.5	20	T-20	TG	PT	200
TTUFS4.0X40 FT	74429		40	8	2.5	35	T-20	VG	FT	200
TTUFS4.0X45 PT	74430		45	8	2.5	29	T-20	VG	PT	200
TTUFS4.0X45 FT	77613		45	8	2.5	40	T-20	TG	FT	200
TTUFS4.0X50 PT	74431		50	8	2.5	30	T-20	TG	PT	200
TTUFS4.0X50 FT	77615		50	8	2.5	45	T-20	VG	FT	200
TTUFS4.0X60 PT	74432		60	8	2.5	35	T-20	TG	PT	200
TTUFS4.0X60 FT	77616		60	8	2.5	55	T-20	VG	FT	200
TTUFS4.0X70	74433		70	8	2.5	40	T-20	VG	FT	200
TTUFS4.5X25	74434	4.5	25	8.4	2.8	20	T-20	VG	FT	200
TTUFS4.5X30	74435		30	8.4	2.8	25	T-20	VG	FT	200
TTUFS4.5X35 PT	77617		35	8.4	2.8	21	T-20	TG	PT	200
TTUFS4.5X35 FT	74436		35	8.4	2.8	30	T-20	VG	FT	200
TTUFS4.5X40 PT	77618		40	8.4	2.8	20	T-20	TG	PT	200
TTUFS4.5X40 FT	74437		40	8.4	2.8	35	T-20	VG	FT	200
TTUFS4.5X45 PT	74438		45	8.4	2.8	29	T-20	TG	PT	200
TTUFS4.5X45 FT	77619		45	8.4	2.8	40	T-20	VG	FT	200
TTUFS4.5X50 PT	74439		50	8.4	2.8	30	T-20	TG	PT	200

Diameters 3.0, 3.5 and 4.0 screws are not CE marked.

Tekniskt datablad

TTUFS

Träskruv Försänkt - Elförzinkad

Art. nr.	Art. nr.		Dimensioner [mm]							Qty/box
		d	l	d_h	d_1	l_g	bit	Thread	Thread EU	
TTUFS4.5X50 FT	77620		50	8.4	2.8	45	T-20	VG	FT	200
TTUFS4.5X60 PT	74440		60	8.4	2.8	35	T-20	TG	PT	200
TTUFS4.5X60 FT	77627		60	8.4	2.8	55	T-20	VG	FT	200
TTUFS4.5X70	74441		70	8.4	2.8	40	T-20	TG	PT	100
TTUFS4.5X80	74442		80	8.4	2.8	50	T-20	TGR	PTM	100
TTUFS5.0X30	74373		30	9.5	3.1	25	T-25	VG	FT	200
TTUFS5.0x35	77629		35	9.5	3.1	30	T-25	VG	FT	200
TTUFS5.0X40 PT	77630		40	9.5	3.1	20	T-25	TG	PT	200
TTUFS5.0X40 FT	74374		40	9.5	3.1	35	T-25	VG	FT	200
TTUFS5.0x45	77631		45	9.5	3.1	40	T-25	VG	FT	200
TTUFS5.0X50 PT	74375		50	9.5	3.1	30	T-25	TG	PT	200
TTUFS5.0X50 FT	77634		50	9.5	3.1	45	T-25	VG	FT	200
TTUFS5.0X60 PT	74376	5	60	9.5	3.1	35	T-25	TG	PT	200
TTUFS5.0X60 FT	77635		60	9.5	3.1	55	T-25	VG	FT	200
TTUFS5.0X70	74377		70	9.5	3.1	40	T-25	VG	FT	100
TTUFS5.0X80	74378		80	9.5	3.1	40	T-25	TGR	PTM	100
TTUFS5.0X90	74379		90	9.5	3.1	45	T-25	TGR	PTM	100
TTUFS5.0X90 Bulk	75500		90	9.5	3.1	45	T-25	TGR	PTM	450
TTUFS5.0X100	74443		100	9.5	3.1	60	T-25	TGR	PTM	100
TTUFS5.0X120	74372		120	9.5	3.1	60	T-25	TGR	PTM	100
TTUFS6.0x30	77636		30	11.6	3.7	24	T-30	VG	FT	200
TTUFS6.0X40	74455		40	11.6	3.7	34	T-30	VG	FT	200
TTUFS6.0X50	74457		50	11.6	3.7	30	T-30	TG	PT	200
TTUFS6.0X50 FT	77637		50	11.6	3.7	44	T-30	VG	FT	200
TTUFS6.0X60	74458		60	11.6	3.7	35	T-30	TG	PT	200
TTUFS6.0X60 FT	77638		60	11.6	3.7	54	T-30	VG	FT	200
TTUFS6.0X70	74459	6	70	11.6	3.7	40	T-30	TG	PT	100
TTUFS6.0X80	74460		80	11.6	3.7	40	T-30	TGR	PTM	100
TTUFS6.0X90	74461		90	11.6	3.7	45	T-30	TGR	PTM	100
TTUFS6.0X100	74380		100	11.6	3.7	60	T-30	TGR	PTM	100
TTUFS6.0X120	74451		120	11.6	3.7	70	T-30	TGR	PTM	100
TTUFS6.0X140	74452		140	11.6	3.7	70	T-30	TGR	PTM	100
TTUFS6.0X160	74453		160	11.6	3.7	70	T-30	TGR	PTM	100
TTUFS6.0X180	74454		180	11.6	3.7	70	T-30	TGR	PTM	100

Diameters 3.0, 3.5 and 4.0 screws are not CE marked.

Tekniskt datablad

TTUFS
Träskruv Försänkt - Elförzinkad

SIMPSON Strong-Tie

Produktkarakteristisk egenskaper

Art. nr.	Karakteristisk böjmoment - $M_{y,k}$ [Nmm]	Karakteristisk extrahering parameter - $f_{ax,k,90°}$ [N/mm²]	Karakteristisk genomdragshållfasthets parameter - $f_{head,k}$ [N/mm²]	Karakteristisk dragkraftstyrke - $f_{tens,k}$ [kN]
TTUFS4.5X25	4660	14.7	15.6	7.8
TTUFS4.5X30	4660	14.7	15.6	7.8
TTUFS4.5X35 PT	4660	14.7	15.6	7.8
TTUFS4.5X35 FT	4660	14.7	15.6	7.8
TTUFS4.5X40 PT	4660	14.7	15.6	7.8
TTUFS4.5X40 FT	4660	14.7	15.6	7.8
TTUFS4.5X45 PT	4660	14.7	15.6	7.8
TTUFS4.5X45 FT	4660	14.7	15.6	7.8
TTUFS4.5X50 PT	4660	14.7	15.6	7.8
TTUFS4.5X50 FT	4660	14.7	15.6	7.8
TTUFS4.5X60 PT	4660	14.7	15.6	7.8
TTUFS4.5X60 FT	4660	14.7	15.6	7.8
TTUFS4.5X70	4660	14.7	15.6	7.8
TTUFS4.5X80	4660	14.7	15.6	7.8
TTUFS5.0X30	6720	15	17.1	7.9
TTUFS5.0x35	6720	15	17.1	7.9
TTUFS5.0X40 PT	6720	15	17.1	7.9
TTUFS5.0X40 FT	6720	15	17.1	7.9
TTUFS5.0x45	6720	15	17.1	7.9
TTUFS5.0X50 PT	6720	15	17.1	7.9
TTUFS5.0X50 FT	6720	15	17.1	7.9
TTUFS5.0X60 PT	6720	15	17.1	7.9
TTUFS5.0X60 FT	6720	15	17.1	7.9
TTUFS5.0X70	6720	15	17.1	7.9
TTUFS5.0X80	6720	15	17.1	7.9
TTUFS5.0X90	6720	15	17.1	7.9
TTUFS5.0X90 Bulk	6720	15	17.1	7.9
TTUFS5.0X100	6720	15	17.1	7.9
TTUFS5.0X120	6720	15	17.1	7.9
TTUFS6.0x30	9500	12.5	16.6	11.1
TTUFS6.0X40	9500	12.5	16.6	11.1
TTUFS6.0X50	9500	12.5	16.6	11.1
TTUFS6.0X50 FT	9500	12.5	16.6	11.1
TTUFS6.0X60	9500	12.5	16.6	11.1
TTUFS6.0X60 FT	9500	12.5	16.6	11.1
TTUFS6.0X70	9500	12.5	16.6	11.1
TTUFS6.0X80	9500	12.5	16.6	11.1
TTUFS6.0X90	9500	12.5	16.6	11.1

Refer to relevant ITTR or ETA for more details

Tekniskt datablad

TTUFS
Träskruv Försänkt - Elförzinkad

Art. nr.	Karakteristisk böjmoment - $M_{y,k}$ [Nmm]	Karakteristisk extrahering parameter - $f_{ax,k,90°}$ [N/mm²]	Karakteristisk genomdragshållfasthets parameter - $f_{head,k}$ [N/mm²]	Karakteristisk dragkraftstyrke - $f_{tens,k}$ [kN]
TTUFS6.0X100	9500	12.5	16.6	11.1
TTUFS6.0X120	9500	12.5	16.6	11.1
TTUFS6.0X140	9500	12.5	16.6	11.1
TTUFS6.0X160	9500	12.5	16.6	11.1
TTUFS6.0X180	9500	12.5	16.6	11.1

Refer to relevant ITTR or ETA for more details

Montering

TTUFS
Träskruv Försänkt - Elförzinkad

SIMPSON Strong-Tie

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°					
	$a_{1.0}$	$a_{2.0}$	$a_{3.t.0}$	$a_{3.c.0}$	$a_{4.t.0}$	$a_{4.c.0}$	$a_{1.90}$	$a_{2.90}$	$a_{3.t.90}$	$a_{3.c.90}$	$a_{4.t.90}$	$a_{4.c.90}$
TTUFS4.5X25	-	-	-	-	-	-	-	-	-	-	-	-
TTUFS4.5X30	-	-	-	-	-	-	-	-	-	-	-	-
TTUFS4.5X35 PT	-	-	-	-	-	-	-	-	-	-	-	-
TTUFS4.5X35 FT	-	-	-	-	-	-	-	-	-	-	-	-
TTUFS4.5X40 PT	-	-	-	-	-	-	-	-	-	-	-	-
TTUFS4.5X40 FT	-	-	-	-	-	-	-	-	-	-	-	-
TTUFS4.5X45 PT	-	-	-	-	-	-	-	-	-	-	-	-
TTUFS4.5X45 FT	-	-	-	-	-	-	-	-	-	-	-	-
TTUFS4.5X50 PT	-	-	-	-	-	-	-	-	-	-	-	-
TTUFS4.5X50 FT	-	-	-	-	-	-	-	-	-	-	-	-
TTUFS4.5X60 PT	-	-	-	-	-	-	-	-	-	-	-	-
TTUFS4.5X60 FT	-	-	-	-	-	-	-	-	-	-	-	-
TTUFS4.5X70	-	-	-	-	-	-	-	-	-	-	-	-
TTUFS4.5X80	-	-	-	-	-	-	-	-	-	-	-	-
TTUFS5.0X30	-	-	-	-	-	-	-	-	-	-	-	-
TTUFS5.0x35	-	-	-	-	-	-	-	-	-	-	-	-
TTUFS5.0X40 PT	-	-	-	-	-	-	-	-	-	-	-	-
TTUFS5.0X40 FT	-	-	-	-	-	-	-	-	-	-	-	-
TTUFS5.0x45	-	-	-	-	-	-	-	-	-	-	-	-
TTUFS5.0X50 PT	-	-	-	-	-	-	-	-	-	-	-	-
TTUFS5.0X50 FT	-	-	-	-	-	-	-	-	-	-	-	-
TTUFS5.0X60 PT	-	-	-	-	-	-	-	-	-	-	-	-
TTUFS5.0X60 FT	-	-	-	-	-	-	-	-	-	-	-	-
TTUFS5.0X70	-	-	-	-	-	-	-	-	-	-	-	-
TTUFS5.0X80	-	-	-	-	-	-	-	-	-	-	-	-
TTUFS5.0X90	-	-	-	-	-	-	-	-	-	-	-	-
TTUFS5.0X90 Bulk	-	-	-	-	-	-	-	-	-	-	-	-
TTUFS5.0X100	-	-	-	-	-	-	-	-	-	-	-	-
TTUFS5.0X120	-	-	-	-	-	-	-	-	-	-	-	-
TTUFS6.0x30	-	-	-	-	-	-	-	-	-	-	-	-
TTUFS6.0X40	-	-	-	-	-	-	-	-	-	-	-	-
TTUFS6.0X50	-	-	-	-	-	-	-	-	-	-	-	-
TTUFS6.0X50 FT	-	-	-	-	-	-	-	-	-	-	-	-
TTUFS6.0X60	-	-	-	-	-	-	-	-	-	-	-	-
TTUFS6.0X60 FT	-	-	-	-	-	-	-	-	-	-	-	-
TTUFS6.0X70	-	-	-	-	-	-	-	-	-	-	-	-
TTUFS6.0X80	-	-	-	-	-	-	-	-	-	-	-	-

a_1 and a_2 can be multiplied by 0.85 for panel/timber assembly, and by 0.7 for steel/timber assembly.

TTUFS
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Art. nr.	Minimum edge distances and spacing for shear loaded screws [mm]											
	Angle between load and grain = 0°						Angle between load and grain = 90°					
	$a_{1.0}$	$a_{2.0}$	$a_{3.t.0}$	$a_{3.c.0}$	$a_{4.t.0}$	$a_{4.c.0}$	$a_{1.90}$	$a_{2.90}$	$a_{3.t.90}$	$a_{3.c.90}$	$a_{4.t.90}$	$a_{4.c.90}$
TTUFS6.0X90	-	-	-	-	-	-	-	-	-	-	-	-
TTUFS6.0X100	-	-	-	-	-	-	-	-	-	-	-	-
TTUFS6.0X120	-	-	-	-	-	-	-	-	-	-	-	-
TTUFS6.0X140	-	-	-	-	-	-	-	-	-	-	-	-
TTUFS6.0X160	-	-	-	-	-	-	-	-	-	-	-	-
TTUFS6.0X180	-	-	-	-	-	-	-	-	-	-	-	-

a_1 and a_2 can be multiplied by 0.85 for panel/timber assembly, and by 0.7 for steel/timber assembly.

TTUFS
Träskruv Försänkt - Elförzinkad

SIMPSON Strong-Tie

Spacing and edge distances - Axially loaded screws

Art. nr.	Minimum edge distances and spacing for axially loaded screws [mm]			
	a_1	a_2	$a_{3.c}$	$a_{4.c}$
TTUFS4.5X25	-	-	-	-
TTUFS4.5X30	-	-	-	-
TTUFS4.5X35 PT	-	-	-	-
TTUFS4.5X35 FT	-	-	-	-
TTUFS4.5X40 PT	-	-	-	-
TTUFS4.5X40 FT	-	-	-	-
TTUFS4.5X45 PT	-	-	-	-
TTUFS4.5X45 FT	-	-	-	-
TTUFS4.5X50 PT	-	-	-	-
TTUFS4.5X50 FT	-	-	-	-
TTUFS4.5X60 PT	-	-	-	-
TTUFS4.5X60 FT	-	-	-	-
TTUFS4.5X70	-	-	-	-
TTUFS4.5X80	-	-	-	-
TTUFS5.0X30	-	-	-	-
TTUFS5.0x35	-	-	-	-
TTUFS5.0X40 PT	-	-	-	-
TTUFS5.0X40 FT	-	-	-	-
TTUFS5.0x45	-	-	-	-
TTUFS5.0X50 PT	-	-	-	-
TTUFS5.0X50 FT	-	-	-	-
TTUFS5.0X60 PT	-	-	-	-
TTUFS5.0X60 FT	-	-	-	-
TTUFS5.0X70	-	-	-	-
TTUFS5.0X80	-	-	-	-
TTUFS5.0X90	-	-	-	-
TTUFS5.0X90 Bulk	-	-	-	-
TTUFS5.0X100	-	-	-	-
TTUFS5.0X120	-	-	-	-
TTUFS6.0x30	-	-	-	-
TTUFS6.0X40	-	-	-	-
TTUFS6.0X50	-	-	-	-
TTUFS6.0X50 FT	-	-	-	-
TTUFS6.0X60	-	-	-	-
TTUFS6.0X60 FT	-	-	-	-
TTUFS6.0X70	-	-	-	-
TTUFS6.0X80	-	-	-	-
TTUFS6.0X90	-	-	-	-
TTUFS6.0X100	-	-	-	-
TTUFS6.0X120	-	-	-	-

TTUFS
Träskruv Försänkt - Elförzinkad

Art. nr.	Minimum edge distances and spacing for axially loaded screws [mm]			
	a_1	a_2	$a_{3.c}$	$a_{4.c}$
TTUFS6.0X140	-	-	-	-
TTUFS6.0X160	-	-	-	-
TTUFS6.0X180	-	-	-	-

Bärförmåga

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]
TTUFS5.0X80	40	1.64	1.64	1.64	1.64	-	-	-	-	1.64	1.64	1.64	-	-	-	-
TTUFS5.0X90	45	1.64	1.64	1.64	1.64	-	-	-	-	1.64	1.64	1.64	-	-	-	-
TTUFS5.0X90 Bulk	45	1.64	1.64	1.64	1.64	-	-	-	-	1.64	1.64	1.64	-	-	-	-
TTUFS5.0X100	40	1.64	1.64	1.64	1.64	-	-	-	-	1.64	1.64	1.64	-	-	-	-
TTUFS5.0X120	60	1.64	1.64	1.64	1.64	1.64	-	-	-	1.64	1.64	1.64	1.64	-	-	-
TTUFS6.0X80	40	2.73	2.09	2.09	2.15	-	-	-	-	2.09	2.09	2.15	-	-	-	-
TTUFS6.0X90	45	2.73	2.09	2.09	2.15	-	-	-	-	2.09	2.09	2.15	-	-	-	-
TTUFS6.0X100	40	2.73	2.09	2.09	2.15	-	-	-	-	2.09	2.09	2.15	-	-	-	-
TTUFS6.0X120	50	2.73	2.09	2.09	2.15	-	-	-	-	2.09	2.09	2.15	-	-	-	-
TTUFS6.0X140	70	2.73	2.09	2.09	2.15	2.15	2.15	-	-	2.09	2.09	2.15	2.15	2.15	-	-
TTUFS6.0X160	90	2.73	2.09	2.09	2.15	2.15	2.15	2.15	-	2.09	2.09	2.15	2.15	2.15	2.15	-
TTUFS6.0X180	110	2.73	2.09	2.09	2.15	2.15	2.15	2.15	2.15	2.09	2.09	2.15	2.15	2.15	2.15	2.15

These capacities are valid for:

- Timber element under the head with thickness ≤ 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), t1 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 t1 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 [Rax.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]
TTUFS4.5X25	1.73	0.8	0.8	1.54	1.54
TTUFS4.5X30	2.16	0.98	0.98	1.77	1.77
TTUFS4.5X35 FT	2.59	1.15	1.15	2.02	2.02
TTUFS4.5X40 FT	3.02	1.32	1.32	2.27	2.27
TTUFS4.5X45 PT	2.51	1.49	1.49	2.2	2.2
TTUFS4.5X50 PT	2.59	1.66	1.66	2.22	2.22
TTUFS4.5X60 PT	3.02	1.87	1.87	2.33	2.33
TTUFS4.5X70	3.46	1.98	1.98	2.44	2.44
TTUFS4.5X80	4.32	2.19	2.19	2.65	2.65
TTUFS5.0X30	1.65	1.1	1.1	1.87	1.87
TTUFS5.0X40 FT	2.31	1.49	1.49	2.34	2.34
TTUFS5.0X50 PT	1.98	1.88	1.88	2.47	2.47
TTUFS5.0X60 PT	2.31	1.98	1.98	2.56	2.56
TTUFS5.0X70	2.64	2.06	2.06	2.64	2.64
TTUFS5.0X80	2.64	2.06	2.06	2.64	2.64
TTUFS5.0X90	2.97	2.14	2.14	2.72	2.72
TTUFS5.0X90 Bulk	2.97	2.14	2.14	2.72	2.72
TTUFS5.0X100	3.96	2.39	2.39	2.97	2.97
TTUFS5.0X120	3.96	2.39	2.39	2.97	2.97
TTUFS6.0X40	3.51	1.74	1.74	3.05	3.05
TTUFS6.0X50	3.1	2.2	2.2	3.33	3.33
TTUFS6.0X60	3.61	2.66	2.66	3.64	3.64
TTUFS6.0X70	4.13	2.96	2.96	3.76	3.76
TTUFS6.0X80	4.13	2.96	2.96	3.76	3.76
TTUFS6.0X90	4.64	3.09	3.09	3.89	3.89
TTUFS6.0X100	6.19	3.48	3.48	4.28	4.28
TTUFS6.0X120	7.22	3.74	3.74	4.54	4.54
TTUFS6.0X140	7.22	3.74	3.74	4.54	4.54
TTUFS6.0X160	7.22	3.74	3.74	4.54	4.54
TTUFS6.0X180	7.22	3.74	3.74	4.54	4.54

Shear capacities are given for thick (tst = d) and thin (tst = 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.

Ledger on stud characteristic capacities

Art. nr.	Product characteristic capacities - Ledger on stud C24									
	Minimum width of the stud [mm]	Minimum distance to the bottom side of the ledger $a_{4,c}$ [mm]	Shear capacity depending of thickness of ledger t_1 [Rv.90-0.k] [kN]							
			35 [mm]	40 [mm]	45 [mm]	60 [mm]	75 [mm]	80 [mm]	90 [mm]	≥100 [mm]
TTUFS4.5X25	-	-	-	-	-	-	-	-	-	-
TTUFS4.5X30	-	-	-	-	-	-	-	-	-	-
TTUFS4.5X35 PT	-	-	-	-	-	-	-	-	-	-
TTUFS4.5X35 FT	-	-	-	-	-	-	-	-	-	-
TTUFS4.5X40 PT	-	-	-	-	-	-	-	-	-	-
TTUFS4.5X40 FT	-	-	-	-	-	-	-	-	-	-
TTUFS4.5X45 PT	-	-	-	-	-	-	-	-	-	-
TTUFS4.5X45 FT	-	-	-	-	-	-	-	-	-	-
TTUFS4.5X50 PT	-	-	-	-	-	-	-	-	-	-
TTUFS4.5X50 FT	-	-	-	-	-	-	-	-	-	-
TTUFS4.5X60 PT	-	-	-	-	-	-	-	-	-	-
TTUFS4.5X60 FT	-	-	-	-	-	-	-	-	-	-
TTUFS4.5X70	27	13.5	1.41	-	-	-	-	-	-	-
TTUFS4.5X80	27	13.5	1.41	-	-	-	-	-	-	-
TTUFS5.0X30	30	15	-	-	-	-	-	-	-	-
TTUFS5.0x35	-	-	-	-	-	-	-	-	-	-
TTUFS5.0X40 PT	-	-	-	-	-	-	-	-	-	-
TTUFS5.0X40 FT	30	15	-	-	-	-	-	-	-	-
TTUFS5.0x45	-	-	-	-	-	-	-	-	-	-
TTUFS5.0X50 PT	30	15	-	-	-	-	-	-	-	-
TTUFS5.0X50 FT	-	-	-	-	-	-	-	-	-	-
TTUFS5.0X60 PT	30	15	-	-	-	-	-	-	-	-
TTUFS5.0X60 FT	-	-	-	-	-	-	-	-	-	-
TTUFS5.0X70	30	15	1.81	-	-	-	-	-	-	-
TTUFS5.0X80	30	15	1.81	1.81	1.81	-	-	-	-	-
TTUFS5.0X90	30	15	1.81	1.81	1.81	-	-	-	-	-
TTUFS5.0X90 Bulk	-	-	-	-	-	-	-	-	-	-
TTUFS5.0X100	30	15	1.81	1.81	1.81	-	-	-	-	-
TTUFS5.0X120	30	15	1.81	1.81	1.81	1.81	-	-	-	-
TTUFS6.0x30	-	-	-	-	-	-	-	-	-	-
TTUFS6.0X40	36	18	-	-	-	-	-	-	-	-
TTUFS6.0X50	36	18	-	-	-	-	-	-	-	-
TTUFS6.0X50 FT	-	-	-	-	-	-	-	-	-	-
TTUFS6.0X60	36	18	-	-	-	-	-	-	-	-
TTUFS6.0X60 FT	-	-	-	-	-	-	-	-	-	-

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

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Art. nr.	Product characteristic capacities - Ledger on stud C24									
	Minimum width of the stud [mm]	Minimum distance to the bottom side of the ledger $a_{4,c}$ [mm]	Shear capacity depending of thickness of ledger t_1 [Rv.90-0.k] [kN]							
			35 [mm]	40 [mm]	45 [mm]	60 [mm]	75 [mm]	80 [mm]	90 [mm]	≥100 [mm]
TTUFS6.0X70	36	18	2.44	-	-	-	-	-	-	-
TTUFS6.0X80	36	18	2.62	2.6	2.44	-	-	-	-	-
TTUFS6.0X90	36	18	2.62	2.62	2.62	-	-	-	-	-
TTUFS6.0X100	36	18	2.62	2.62	2.62	-	-	-	-	-
TTUFS6.0X120	36	18	2.62	2.62	2.62	-	-	-	-	-
TTUFS6.0X140	36	18	2.62	2.62	2.62	2.62	2.62	-	-	-
TTUFS6.0X160	36	18	2.62	2.62	2.62	2.62	2.62	2.62	2.62	-
TTUFS6.0X180	36	18	2.62	2.62	2.62	2.62	2.62	2.62	2.62	2.62

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

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Panel to Timber characteristic capacities

Art. nr.	Panel (OSB, Fibreboard $\rho_k \geq 380$ kg/m^3) on Timber C24 depending on panel thickness t_p														
	13 [mm]			15 [mm]			18 [mm]			22 [mm]			25 [mm]		
	$R_{ax.k.13}$ [kN]	$R_{v.0.k.13}$ [kN]	$R_{v.90.k.13}$ [kN]	$R_{ax.k.15}$ [kN]	$R_{v.0.k.15}$ [kN]	$R_{v.90.k.15}$ [kN]	$R_{ax.k.18}$ [kN]	$R_{v.0.k.18}$ [kN]	$R_{v.90.k.18}$ [kN]	$R_{ax.k.22}$ [kN]	$R_{v.0.k.22}$ [kN]	$R_{v.90.k.22}$ [kN]	$R_{ax.k.25}$ [kN]	$R_{v.0.k.25}$ [kN]	$R_{v.90}$ [k
TTUFS4.5X25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TTUFS4.5X30	-	-	-	0.56	-	-	-	-	-	-	-	-	-	-	-
TTUFS4.5X35 PT	-	-	-	0.56	-	-	-	-	-	-	-	-	-	-	-
TTUFS4.5X35 FT	-	-	-	0.56	-	-	-	-	-	-	-	-	-	-	-
TTUFS4.5X40 PT	0.56	0.84	0.84	0.56	0.88	0.88	0.56	-	-	0.71	-	-	0.71	-	-
TTUFS4.5X40 FT	0.56	0.84	0.84	0.56	0.88	0.88	0.56	0.94	0.94	0.71	1.06	1.06	0.71	1.06	1.0
TTUFS4.5X45 PT	0.56	0.84	0.84	0.56	0.88	0.88	0.56	0.94	0.94	0.71	1.06	1.06	0.71	1.06	1.0
TTUFS4.5X45 FT	0.56	0.84	0.84	0.56	0.88	0.88	0.56	0.94	0.94	0.71	1.06	1.06	0.71	1.06	1.0
TTUFS4.5X50 PT	0.56	0.84	0.84	0.56	0.88	0.88	0.56	0.94	0.94	0.71	1.06	1.06	0.71	1.06	1.0
TTUFS4.5X50 FT	0.56	0.84	0.84	0.56	0.88	0.88	0.56	0.94	0.94	0.71	1.06	1.06	0.71	1.06	1.0
TTUFS4.5X60 PT	0.56	0.84	0.84	0.56	0.88	0.88	0.56	0.94	0.94	0.71	1.06	1.06	0.71	1.06	1.0
TTUFS4.5X60 FT	0.56	0.84	0.84	0.56	0.88	0.88	0.56	0.94	0.94	0.71	1.06	1.06	0.71	1.06	1.0
TTUFS4.5X70	0.56	0.84	0.84	0.56	0.88	0.88	0.56	0.94	0.94	0.71	1.06	1.06	0.71	1.06	1.0
TTUFS4.5X80	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TTUFS5.0X30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TTUFS5.0x35	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TTUFS5.0X40 PT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TTUFS5.0X40 FT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TTUFS5.0x45	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TTUFS5.0X50 PT	0.72	1.03	1.03	0.72	1.06	1.06	0.72	1.11	1.11	0.9	1.24	1.24	0.9	1.31	1.3
TTUFS5.0X50 FT	0.72	1.03	1.03	0.72	1.06	1.06	0.72	1.11	1.11	0.9	1.24	1.24	0.9	1.31	1.3
TTUFS5.0X60 PT	0.72	1.03	1.03	0.72	1.06	1.06	0.72	1.11	1.11	0.9	1.24	1.24	0.9	1.31	1.3
TTUFS5.0X60 FT	0.72	1.03	1.03	0.72	1.06	1.06	0.72	1.11	1.11	0.9	1.24	1.24	0.9	1.31	1.3
TTUFS5.0X70	0.72	1.03	1.03	0.72	1.06	1.06	0.72	1.11	1.11	0.9	1.24	1.24	0.9	1.31	1.3
TTUFS5.0X80	0.72	1.03	1.03	0.72	1.06	1.06	0.72	1.11	1.11	0.9	1.24	1.24	0.9	1.31	1.3
TTUFS5.0X90	0.72	1.03	1.03	0.72	1.06	1.06	0.72	1.11	1.11	0.9	1.24	1.24	0.9	1.31	1.3
TTUFS5.0X90 Bulk	0.72	1.03	1.03	0.72	1.06	1.06	0.72	1.11	1.11	0.9	1.24	1.24	0.9	1.31	1.3
TTUFS5.0X100	0.72	1.03	1.03	0.72	1.06	1.06	0.72	1.11	1.11	0.9	1.24	1.24	0.9	1.31	1.3
TTUFS5.0X120	0.72	1.03	1.03	0.72	1.06	1.06	0.72	1.11	1.11	0.9	1.24	1.24	0.9	1.31	1.3
TTUFS6.0x30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TTUFS6.0X40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TTUFS6.0X50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Art. nr.	Panel (OSB, Fibreboard $\rho_K \geq 380$ kg/m^3) on Timber C24 depending on panel thickness t_p														
	13 [mm]			15 [mm]			18 [mm]			22 [mm]			25 [mm]		
	$R_{ax.k.13}$ [kN]	$R_{v.0.k.13}$ [kN]	$R_{v.90.k.13}$ [kN]	$R_{ax.k.15}$ [kN]	$R_{v.0.k.15}$ [kN]	$R_{v.90.k.15}$ [kN]	$R_{ax.k.18}$ [kN]	$R_{v.0.k.18}$ [kN]	$R_{v.90.k.18}$ [kN]	$R_{ax.k.22}$ [kN]	$R_{v.0.k.22}$ [kN]	$R_{v.90.k.22}$ [kN]	$R_{ax.k.25}$ [kN]	$R_{v.0.k.25}$ [kN]	$R_{v.90}$ [k
TTUFS6.0X50 FT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TTUFS6.0X60	1.08	1.31	1.31	1.08	1.36	1.36	1.08	1.41	1.41	1.35	1.56	1.56	1.35	1.64	1.6
TTUFS6.0X60 FT	1.08	1.31	1.31	1.08	1.36	1.36	1.08	1.41	1.41	1.35	1.56	1.56	1.35	1.64	1.6
TTUFS6.0X70	1.08	1.31	1.31	1.08	1.36	1.36	1.08	1.41	1.41	1.35	1.56	1.56	1.35	1.64	1.6
TTUFS6.0X80	1.08	1.31	1.31	1.08	1.36	1.36	1.08	1.41	1.41	1.35	1.56	1.56	1.35	1.64	1.6
TTUFS6.0X90	1.08	1.31	1.31	1.08	1.36	1.36	1.08	1.41	1.41	1.35	1.56	1.56	1.35	1.64	1.6
TTUFS6.0X100	1.08	1.31	1.31	1.08	1.36	1.36	1.08	1.41	1.41	1.35	1.56	1.56	1.35	1.64	1.6
TTUFS6.0X120	1.08	1.31	1.31	1.08	1.36	1.36	1.08	1.41	1.41	1.35	1.56	1.56	1.35	1.64	1.6
TTUFS6.0X140	1.08	1.31	1.31	1.08	1.36	1.36	1.08	1.41	1.41	1.35	1.56	1.56	1.35	1.64	1.6
TTUFS6.0X160	1.08	1.31	1.31	1.08	1.36	1.36	1.08	1.41	1.41	1.35	1.56	1.56	1.35	1.64	1.6
TTUFS6.0X180	1.08	1.31	1.31	1.08	1.36	1.36	1.08	1.41	1.41	1.35	1.56	1.56	1.35	1.64	1.6

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Plywood to Timber Characteristic Capacities

Art. nr.	Plywood ($\rho_k \geq 490$ kg/m^3) on Timber C24 depending on panel thickness t_p														
	10 [mm]			15 [mm]			18 [mm]			22 [mm]			25 [mm]		
	$R_{ax.k.10}$ [kN]	$R_{v.0.k.10}$ [kN]	$R_{v.90.k.10}$ [kN]	$R_{ax.k.15}$ [kN]	$R_{v.0.k.15}$ [kN]	$R_{v.90.k.15}$ [kN]	$R_{ax.k.18}$ [kN]	$R_{v.0.k.18}$ [kN]	$R_{v.90.k.18}$ [kN]	$R_{ax.k.22}$ [kN]	$R_{v.0.k.22}$ [kN]	$R_{v.90.k.22}$ [kN]	$R_{ax.k.25}$ [kN]	$R_{v.0.k.25}$ [kN]	$R_{v.90}$ [k
TTUFS4.5X25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TTUFS4.5X30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TTUFS4.5X35 PT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TTUFS4.5X35 FT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TTUFS4.5X40 PT	0.69	0.94	0.94	0.69	0.97	0.97	0.69	-	-	-	-	-	-	-	-
TTUFS4.5X40 FT	0.69	0.94	0.94	0.69	0.97	0.97	0.69	-	-	-	-	-	-	-	-
TTUFS4.5X45 PT	0.69	0.94	0.94	0.69	0.97	0.97	0.69	-	-	-	-	-	-	-	-
TTUFS4.5X45 FT	0.69	0.94	0.94	0.69	0.97	0.97	0.69	-	-	-	-	-	-	-	-
TTUFS4.5X50 PT	0.69	0.94	0.94	0.69	1.01	1.01	0.69	1.08	1.08	1.64	1.41	1.41	1.64	1.37	1.3
TTUFS4.5X50 FT	0.69	0.94	0.94	0.69	1.01	1.01	0.69	1.08	1.08	1.64	1.41	1.41	1.64	1.37	1.3
TTUFS4.5X60 PT	0.69	0.94	0.94	0.69	1.01	1.01	0.69	1.08	1.08	1.64	1.44	1.44	1.64	1.5	1.4
TTUFS4.5X60 FT	0.69	0.94	0.94	0.69	1.01	1.01	0.69	1.08	1.08	1.64	1.44	1.44	1.64	1.5	1.4
TTUFS4.5X70	0.69	0.94	0.94	0.69	1.01	1.01	0.69	1.08	1.08	1.64	1.44	1.44	1.64	1.5	1.4
TTUFS4.5X80	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TTUFS5.0X30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TTUFS5.0x35	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TTUFS5.0X40 PT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TTUFS5.0X40 FT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TTUFS5.0x45	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TTUFS5.0X50 PT	0.88	1.14	1.14	0.88	1.2	1.2	0.88	1.28	1.28	2.07	1.59	1.59	1.88	1.56	1.5
TTUFS5.0X50 FT	0.88	1.14	1.14	0.88	1.2	1.2	0.88	1.28	1.28	2.07	1.59	1.59	1.88	1.56	1.5
TTUFS5.0X60 PT	0.88	1.14	1.14	0.88	1.2	1.2	0.88	1.28	1.28	2.07	1.59	1.59	1.88	1.56	1.7
TTUFS5.0X60 FT	0.88	1.14	1.14	0.88	1.2	1.2	0.88	1.28	1.28	2.07	1.59	1.59	1.88	1.56	1.7
TTUFS5.0X70	0.88	1.14	1.14	0.88	1.2	1.2	0.88	1.28	1.28	2.07	1.59	1.59	1.88	1.56	1.7
TTUFS5.0X80	0.88	1.14	1.14	0.88	1.2	1.2	0.88	1.28	1.28	2.07	1.59	1.59	1.88	1.56	1.7
TTUFS5.0X90	0.88	1.14	1.14	0.88	1.2	1.2	0.88	1.28	1.28	2.07	1.59	1.59	1.88	1.56	1.7
TTUFS5.0X90 Bulk	0.88	1.14	1.14	0.88	1.2	1.2	0.88	1.28	1.28	2.07	1.59	1.59	1.88	1.56	1.7
TTUFS5.0X100	0.88	1.14	1.14	0.88	1.2	1.2	0.88	1.28	1.28	2.07	1.59	1.59	1.88	1.56	1.7
TTUFS5.0X120	0.88	1.14	1.14	0.88	1.2	1.2	0.88	1.28	1.28	2.07	1.59	1.59	1.88	1.56	1.7
TTUFS6.0x30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TTUFS6.0X40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TTUFS6.0X50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

TTUFS
Träskruv Försänkt - Elförzinkad

Art. nr.	Plywood ($\rho_k \geq 490$ kg/m^3) on Timber C24 depending on panel thickness t_p														
	10 [mm]			15 [mm]			18 [mm]			22 [mm]			25 [mm]		
	$R_{ax.k.10}$ [kN]	$R_{v.0.k.10}$ [kN]	$R_{v.90.k.10}$ [kN]	$R_{ax.k.15}$ [kN]	$R_{v.0.k.15}$ [kN]	$R_{v.90.k.15}$ [kN]	$R_{ax.k.18}$ [kN]	$R_{v.0.k.18}$ [kN]	$R_{v.90.k.18}$ [kN]	$R_{ax.k.22}$ [kN]	$R_{v.0.k.22}$ [kN]	$R_{v.90.k.22}$ [kN]	$R_{ax.k.25}$ [kN]	$R_{v.0.k.25}$ [kN]	$R_{v.90}$ [k
TTUFS6.0X50 FT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TTUFS6.0X60	1.32	1.48	1.48	1.32	1.53	1.53	1.32	1.61	1.61	2.63	2.05	2.05	2.63	2.11	2.
TTUFS6.0X60 FT	1.32	1.48	1.48	1.32	1.53	1.53	1.32	1.61	1.61	2.63	2.05	2.05	2.63	2.11	2.
TTUFS6.0X70	1.32	1.48	1.48	1.32	1.53	1.53	1.32	1.61	1.61	3	2.15	2.15	3	2.25	2.
TTUFS6.0X80	1.32	1.48	1.48	1.32	1.53	1.53	1.32	1.61	1.61	3.1	2.17	2.17	3.1	2.27	2.
TTUFS6.0X90	1.32	1.48	1.48	1.32	1.53	1.53	1.32	1.61	1.61	3.1	2.17	2.17	3.1	2.27	2.
TTUFS6.0X100	1.32	1.48	1.48	1.32	1.53	1.53	1.32	1.61	1.61	3.1	2.17	2.17	3.1	2.27	2.
TTUFS6.0X120	1.32	1.48	1.48	1.32	1.53	1.53	1.32	1.61	1.61	3.1	2.17	2.17	3.1	2.27	2.
TTUFS6.0X140	1.32	1.48	1.48	1.32	1.53	1.53	1.32	1.61	1.61	3.1	2.17	2.17	3.1	2.27	2.
TTUFS6.0X160	1.32	1.48	1.48	1.32	1.53	1.53	1.32	1.61	1.61	3.1	2.17	2.17	3.1	2.27	2.
TTUFS6.0X180	1.32	1.48	1.48	1.32	1.53	1.53	1.32	1.61	1.61	3.1	2.17	2.17	3.1	2.27	2.

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