

TTUFS

Træskruer, undersænket

TTUFS-skruen er undersænkede skruer til bærende trækonstruktioner. Skruerne har et savtakket gevind for at reducere iskruningsmomentet og en fibercut spids, som reducerer risikoen for at træet flækker. Skruer på 80 mm eller længere har en ekstra fræseribbe for at reducere iskruningsmomentet yderligere.

Egenskaber

Egenskaber

- TX-recess
- Undersænket hoved giver en jævn finish
- Fræseribbe reducerer iskruningsmomentet
- Fibercut spids (type 17 spids) reducerer risikoen for at træet flækker under installationen
- Savtakket gevind
- El-forzinket

Anvendelse

Anvendelse

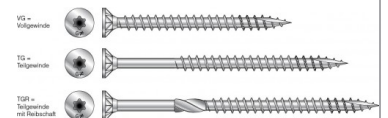
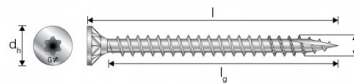
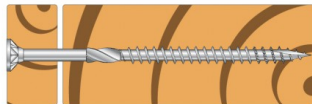
- Træ på træ



TTUFS

Træskrue, undersænket

Dimensioner



Art. nr.	Best. nr.	DB nr.	Dimensioner [mm]							Antal pr. kasse	Vægt [kg]
			d	l	d _h	d ₁	l _g	Bit	Gevind		
TTUFS3.0X16	74414	1949909	3	16	6	2	11	T-10	FT	200	0.001
TTUFS3.0X20	74415	1949910		20	6	2	15	T-10	FT	200	0.001
TTUFS3.0X25	74416	1949911		25	6	2	20	T-10	FT	200	0.001
TTUFS3.0X30	74417	1949912		30	6	2	25	T-10	FT	200	0.001
TTUFS3.0x40	77606	-		40	6	2	-	T-10	FT	200	0.001
TTUFS3.5X16	74418	1949913	3.5	16	7	2.2	11	T-15	FT	200	0.001
TTUFS3.5X20	74419	1949914		20	7	2.2	15	T-15	FT	200	0.001
TTUFS3.5X25	74420	1949915		25	7	2.2	20	T-15	FT	200	0.001
TTUFS3.5X30	74421	1949916		30	7	2.2	25	T-15	FT	200	0.001
TTUFS3.5X35	74422	1949917		35	7	2.2	30	T-15	FT	200	0.002
TTUFS3.5X40	74423	1949918		40	7	2.2	35	T-15	FT	200	0.002
TTUFS3.5X50 PT	74424	1949919		50	7	2.2	30	T-15	PT	200	0.002
TTUFS3.5X50 FT	77609	-		50	7	2.2	45	T-15	FT	200	0.002
TTUFS4.0X20	74425	1949920	4	20	8	2.5	15	T-20	FT	200	0.001
TTUFS4.0X25	74426	1949921		25	8	2.5	20	T-20	FT	200	0.002
TTUFS4.0X30 PT	77610	-		25	8	2.5	18	T-20	PT	200	0.002
TTUFS4.0X30 FT	74427	1949922		30	8	2.5	25	T-20	FT	200	0.002
TTUFS4.0X35	74428	1949923		35	8	2.5	30	T-20	FT	200	0.002
TTUFS4.0X40 PT	77612	-		40	8	2.5	20	T-20	PT	200	0.002
TTUFS4.0X40 FT	74429	1949924		40	8	2.5	35	T-20	FT	200	0.002
TTUFS4.0X45 PT	74430	1949925		45	8	2.5	29	T-20	PT	200	0.002
TTUFS4.0X45 FT	77613	-		45	8	2.5	40	T-20	FT	200	0.002
TTUFS4.0X50 PT	74431	1949926		50	8	2.5	30	T-20	PT	200	0.003
TTUFS4.0X50 FT	77615	-		50	8	2.5	45	T-20	FT	200	0.003
TTUFS4.0X60 PT	74432	1949927		60	8	2.5	35	T-20	PT	200	0.003
TTUFS4.0X60 FT	77616	-	4.5	60	8	2.5	55	T-20	FT	200	0.003
TTUFS4.0X70	74433	1949928		70	8	2.5	40	T-20	FT	200	0.004
TTUFS4.5X25	74434	1949929		25	8.4	2.8	20	T-20	FT	200	0.002
TTUFS4.5X30	74435	1949930		30	8.4	2.8	25	T-20	FT	200	0.002
TTUFS4.5X35 PT	77617	-		35	8.4	2.8	21	T-20	PT	200	0.002
TTUFS4.5X35 FT	74436	1949931		35	8.4	2.8	30	T-20	FT	200	0.002
TTUFS4.5X40 PT	77618	-		40	8.4	2.8	20	T-20	PT	200	0.003
TTUFS4.5X40 FT	74437	1949932		40	8.4	2.8	35	T-20	FT	200	0.003
TTUFS4.5X45 PT	74438	1949933		45	8.4	2.8	29	T-20	PT	200	0.003
TTUFS4.5X45 FT	77619	-		45	8.4	2.8	40	T-20	FT	200	0.003
TTUFS4.5X50 PT	74439	1949935		50	8.4	2.8	30	T-20	PT	200	0.003

* ikke CE-mærket

FT = Full Thread (fuldgevind)

PT = Partial Thread (delgevind)

PTM = Partial Thread with Milling thread (delgevind med fræseribbe)

TTUFS

Træskrue, undersænket

Art. nr.	Best. nr.	DB nr.	d	Dimensioner [mm]						Antal pr. kasse	Vægt [kg]
				l	d _h	d ₁	l _g	Bit	Gevind		
TTUFS4.5X50 FT	77620	-	5	50	8.4	2.8	45	T-20	FT	200	0.003
TTUFS4.5X60 PT	74440	1949936		60	8.4	2.8	35	T-20	PT	200	0.004
TTUFS4.5X60 FT	77627	-		60	8.4	2.8	55	T-20	FT	200	0.004
TTUFS4.5X70	74441	1949937		70	8.4	2.8	40	T-20	PT	100	0.005
TTUFS4.5X80	74442	1949938		80	8.4	2.8	50	T-20	PTM	100	0.005
TTUFS5.0X30	74373	1949941		30	9.5	3.1	25	T-25	FT	200	0.003
TTUFS5.0x35	77629	-		35	9.5	3.1	30	T-25	FT	200	0.003
TTUFS5.0X40 PT	77630	-		40	9.5	3.1	20	T-25	PT	200	0.003
TTUFS5.0X40 FT	74374	1949942		40	9.5	3.1	35	T-25	FT	200	0.003
TTUFS5.0x45	77631	-		45	9.5	3.1	40	T-25	FT	200	0.003
TTUFS5.0X50 PT	74375	1949943		50	9.5	3.1	30	T-25	PT	200	0.004
TTUFS5.0X50 FT	77634	-		50	9.5	3.1	45	T-25	FT	200	0.004
TTUFS5.0X60 PT	74376	1949944		60	9.5	3.1	35	T-25	PT	200	0.005
TTUFS5.0X60 FT	77635	-		60	9.5	3.1	55	T-25	FT	200	0.005
TTUFS5.0X70	74377	1949945		70	9.5	3.1	40	T-25	FT	100	0.006
TTUFS5.0X80	74378	1949946		80	9.5	3.1	40	T-25	PTM	100	0.006
TTUFS5.0X90	74379	1949947		90	9.5	3.1	45	T-25	PTM	100	0.007
TTUFS5.0X90 Bulk	75500	2055855		90	9.5	3.1	45	T-25	PTM	450	-
TTUFS5.0X100	74443	1949939		100	9.5	3.1	60	T-25	PTM	100	0.008
TTUFS5.0X120	74372	1949940		120	9.5	3.1	60	T-25	PTM	100	0.009
TTUFS6.0x30	77636	-	6	30	11.6	3.7	24	T-30	FT	200	0.005
TTUFS6.0X40	74455	1949953		40	11.6	3.7	34	T-30	FT	200	0.005
TTUFS6.0X50	74457	1949954		50	11.6	3.7	30	T-30	PT	200	0.006
TTUFS6.0X50 FT	77637	-		50	11.6	3.7	44	T-30	FT	200	0.006
TTUFS6.0X60	74458	1949955		60	11.6	3.7	35	T-30	PT	200	0.007
TTUFS6.0X60 FT	77638	-		60	11.6	3.7	54	T-30	FT	200	0.007
TTUFS6.0X70	74459	1949956		70	11.6	3.7	40	T-30	PT	100	0.008
TTUFS6.0X80	74460	1949957		80	11.6	3.7	40	T-30	PTM	100	0.01
TTUFS6.0X90	74461	1949958		90	11.6	3.7	45	T-30	PTM	100	0.011
TTUFS6.0X100	74380	1949948		100	11.6	3.7	60	T-30	PTM	100	0.012
TTUFS6.0X120	74451	1949949		120	11.6	3.7	70	T-30	PTM	100	0.015
TTUFS6.0X140	74452	1949950		140	11.6	3.7	70	T-30	PTM	100	0.016
TTUFS6.0X160	74453	1949951		160	11.6	3.7	70	T-30	PTM	100	0.018
TTUFS6.0X180	74454	1949952		180	11.6	3.7	70	T-30	PTM	100	0.021

* ikke CE-mærket

FT = Full Thread (fuldgevind)

PT = Partial Thread (delgevind)

PTM = Partial Thread with Milling thread (delgevind med fræseribbe)

TTUFS

Træskrue, undersænket

Produktets karakteristiske egenskaber

Art. nr.	Karakteristisk bøjningsstyrke - $M_{y,k}$ [Nm]	Karakteristisk udtræksparameter - $f_{ax,k,90^\circ}$ [N/mm ²]	Karakteristisk hoved gennemtræksparameter - $f_{head,k}$ [N/mm ²]	Karakteristisk trækstyrke - $f_{tens,k}$ [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
TTUFS6.0X100	9500	12.5	16.6	11.1
TTUFS6.0X120	9500	12.5	16.6	11.1

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Træskrue, undersænket

Art. nr.	Karakteristisk bøjningsstyrke - $M_{y,k}$ [Nmm]	Karakteristisk udtræksparameter - $f_{ax,k,90^\circ}$ [N/mm ²]	Karakteristisk hoved gennemtræksparameter - $f_{head,k}$ [N/mm ²]	Karakteristisk trækstyrke - $f_{tens,k}$ [kN]
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
-				

Montering

TTUFS
Træskrue, undersænket

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	-	-	-	-	-	-	-	-	-	-	-	-
TTUFS6.0X90	-	-	-	-	-	-	-	-	-	-	-	-
TTUFS6.0X100	-	-	-	-	-	-	-	-	-	-	-	-

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



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}
TTUFS6.0X120	-	-	-	-	-	-	-	-	-	-	-	-
TTUFS6.0X140	-	-	-	-	-	-	-	-	-	-	-	-
TTUFS6.0X160	-	-	-	-	-	-	-	-	-	-	-	-
TTUFS6.0X180	-	-	-	-	-	-	-	-	-	-	-	-

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

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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	-	-	-	-
TTUFS6.0X140	-	-	-	-
TTUFS6.0X160	-	-	-	-
TTUFS6.0X180	-	-	-	-

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]
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 $\leq t_1$ 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.

TTUFS
Træskrue, undersænket

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]
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 (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.

TTUFS

Træskrue, undersænket

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	-	-	-	-	-	-	-	-	-	-
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	-	-	-	-	-

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

TTUFS

Træskrue, undersænket

Product characteristic capacities - Ledger on stud C24

Art. nr.	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]
TTUFS6.0X100	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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Træskrue, undersænket

Panel to Timber characteristic capacities

Art. nr.	Panel (OSB, Fibreboard $\rho_k \geq 380 \text{ kg/m}^3$) 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]	$R_{v.90,k.25}$ [kN]
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	1.06
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	1.06
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	1.06
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	1.06
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	1.06
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	1.06
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	1.06
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	1.06
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	1.31
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	1.31
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	1.31
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	1.31
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	1.31
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	1.31
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	1.31
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	1.31
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	1.31
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	1.31
TTUFS6.0x30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TTUFS6.0X40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TTUFS6.0X50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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	1.64

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Træskrue, undersænket

Panel (OSB, Fibreboard $\rho_k \geq 380 \text{ kg/m}^3$) on Timber C24 depending on panel thickness t_p

Art. nr.	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]	$R_{v.90.k.25}$ [kN]
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	1.64
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	1.64
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	1.64
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	1.64
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	1.64
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	1.64
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	1.64
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	1.64
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	1.64

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Plywood to Timber Characteristic Capacities

Art. nr.	Plywood ($\rho_k \geq 490 \text{ kg/m}^3$) 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]	$R_{v,90,k,25}$ [kN]
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	1.37
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	1.37
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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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	2.1

TTUFS

Træskrue, undersænket

Art. nr.	Plywood ($\rho_k \geq 490 \text{ kg/m}^3$) 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]	$R_{v,90,k,25}$ [kN]
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	2.11
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	2.25
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	2.27
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	2.27
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	2.27
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	2.27
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	2.27
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	2.27
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	2.27

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TTUFS
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