schmid
schrauben hainfeld

Solutions for timber constructions

Product Information I Technical data sheets

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Content

What we Fix holds firm

Partial thread

Full thread

Special solutions with ETA

Additional information

photo by Alexander Maria Lohmann

RAPID® partial thread

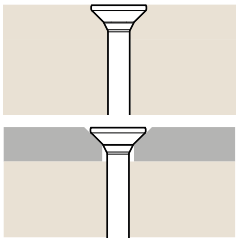
The next generation in wood construction

Head types

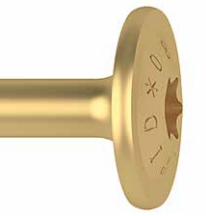
90° countersunk head

> Countersinks fully into the wood and fits well in steel bores

> Milling pockets reduce tearing and splitting in the wood

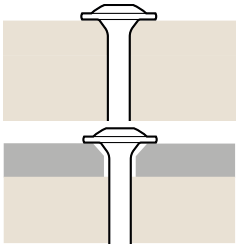


Washer head



> Highest permissible head pull-through values for sturdy joints pulled tightly together

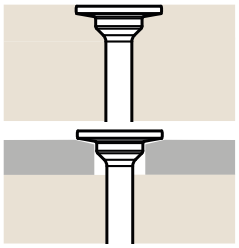
> No washers required, which makes processing faster



SuperSenkFix

> Innovative countersunk and washer head connections for the perfect fit in steel bores

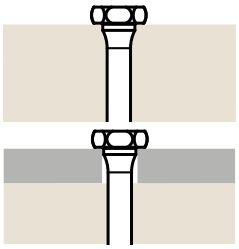
> Clean, flush countersinking in connections with high pull-through values - optimal for visible screwed connections



Dual

> The hexagonal recess allows for better force transfer; recommended for woods with higher density and impact drivers

> Additional T-drive saves the time of changing tools



Thread geometry

Minimised effort

> With hardwood screw development innovations

> Significantly reduced turning resistance from the friction part

> Longer battery life for screwdriver

Fastest screwing processes

> Dual thread with high and low flanks

> Accelerated screwing processes save time - compared to conventional wood construction screws

> The highest technical values guarantee a secure hold, even for oblique and cross grained wood screw connections

Low splitting, little resistance

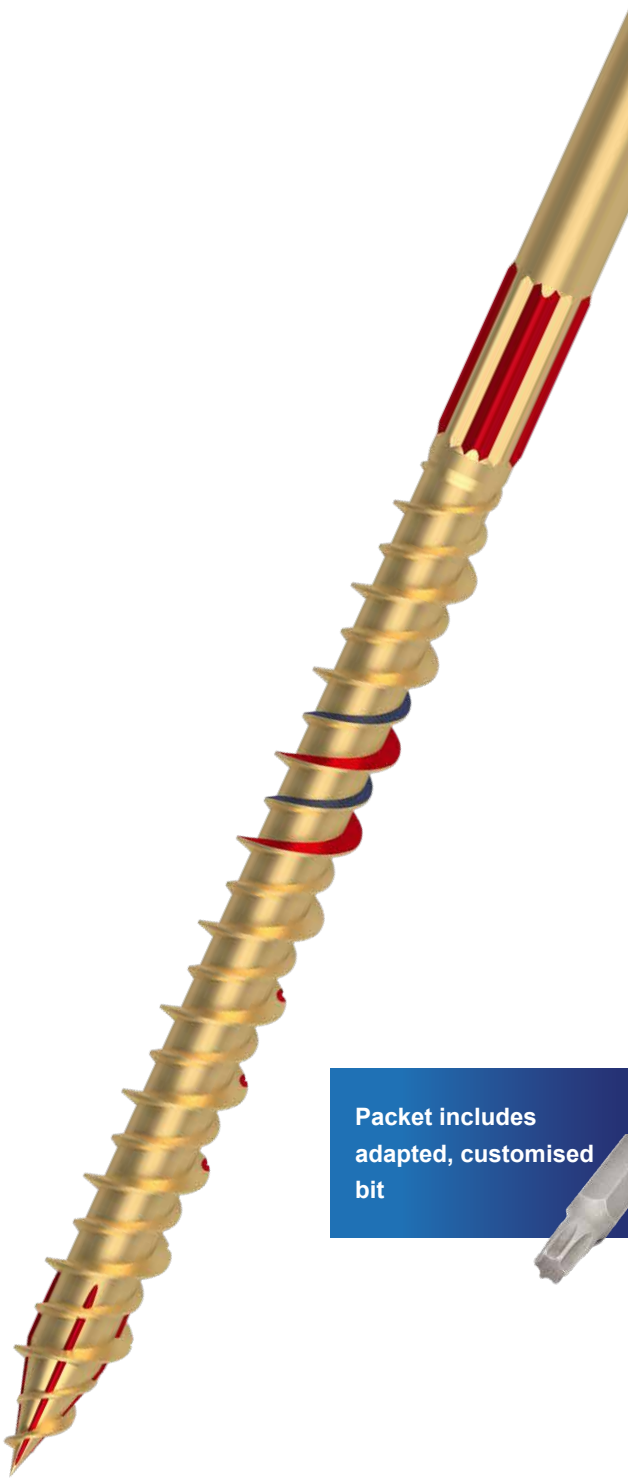
> The wavy profile on the flanks reduces splitting and screw-in resistance thanks to the cutting function

Patented tip – no pre-drilling necessary!

> Self-drilling tip with ridged core

> Saves time by biting precisely and instantly, even with oblique and cross grained wood screw connections

> Much less splitting and lower screw-in resistance compared to conventional wood construction screws



Packet includes adapted, customised bit

RAPID® partial thread

Dimensions & surfaces

		Countersunk head		Washer head	SuperSenkFix	Dual
		≤ 25 mm	≥ 30 mm			
						
Ø 3.0	Drive	T10		–	–	–
	Length	16–45 mm		–	–	–
	Thread	Single thread	HiLo	–	–	–
	Underhead	Milling pockets		–	–	–
Ø 3.5	Drive	T20		–	–	–
	Length	16–50 mm		–	–	–
	Thread	Single thread	HiLo	–	–	–
	Underhead	Milling pockets		–	–	–
Ø 4.0	Drive	T20		–	–	–
	Length	20–70 mm		–	–	–
	Thread	Single thread	HiLo	–	–	–
	Underhead	Milling pockets		–	–	–
Ø 4.5	Drive	T20		–	–	–
	Length	20–80 mm		–	–	–
	Thread	Single thread	HiLo	–	–	–
	Underhead	Milling pockets		–	–	–
Ø 5.0	Drive	T25 (T20*)		–	–	–
	Length	20–120 mm		–	–	–
	Thread	Single thread	HiLo	–	–	–
	Underhead	Milling pockets		–	–	–
Ø 6.0	Drive	–	T30	T30	T30	–
	Length	–	50–300 mm	60–300 mm	80–300 mm	–
	Thread	–	HiLo	HiLo	HiLo	–
	Underhead	–	Milling pockets	Cone	Shoulder	–
Ø 8.0	Drive	–	T40	T40	T40	T30/SW12
	Length	–	80–500 mm	80–500 mm	80–400 mm	50–400 mm
	Thread	–	HiLo	HiLo	HiLo	HiLo
	Underhead	–	Milling pockets	Cone	Shoulder	Shoulder
Ø 10.0	Drive	–	T50	T50	T50	T40/SW15
	Length	–	80–500 mm	100–500 mm	120–400 mm	60–400 mm
	Thread	–	HiLo	HiLo	HiLo	HiLo
	Underhead	–	Milling ribs	Cone	Shoulder	Shoulder
Ø 12.0	Drive	–	T50	–	–	T40/SW17
	Length		100–400 mm	–	–	80–400 mm
	Thread	–	Single thread	–	–	Single thread
	Underhead	–	Milling ribs	–	–	Shoulder
	Surface	YellWin 500+			BlueWin 700+	BlueWin

*Carpentry line

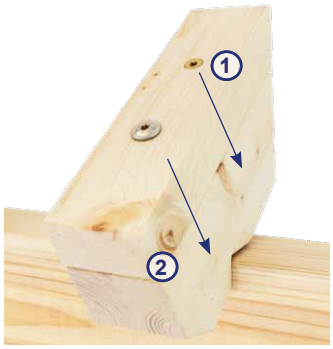
Applications

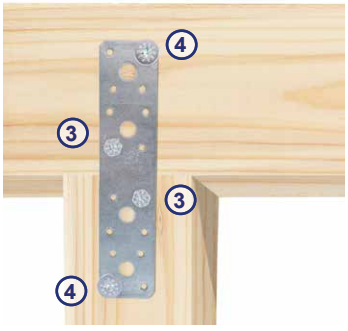
DOUBLING RAFTERS (1)

Doubling for reinforcement is usually done on the top or side of the rafter.

RAFTERS (2)

Partial thread screws transfer the wind suction load and shear forces to the substructure through the screw heads.





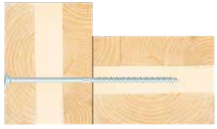
METAL SHEETS AND SHAPED SHEET METAL PARTS

RAPID® Dual (3)-, RAPID® SuperSenkFix (4)- and StarDrive GPR® post screws are optimal for metal sheets and shaped sheet metal parts.
These screws have an underhead shoulder which allows them to be optimally centred and to fit perfectly in the metal.

CLT WALLS AND CEILINGS

Cross-Laminated-Timber (CLT) - ceiling panel screwed to the walls with RAPID® SuperSenkFix. Schmid screws are approved for all applications in side and end wood (0° and 90°) as well as CLT side faces and narrow edges.

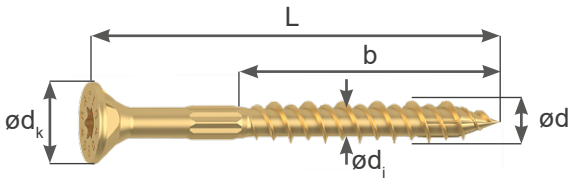
Corner and wall screw connections are pulled tightly together and securely screwed with RAPID® SuperSenkFix.



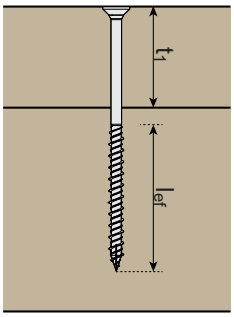
RAPID® partial thread countersunk head

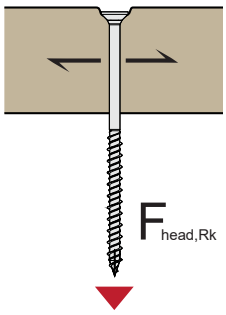
Characteristics and values for C24

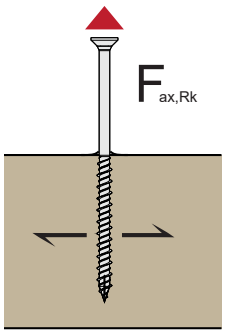
d	[mm]	ø 4	ø 4.5	ø 5	ø 6	ø 8
d_k	[mm]	8.0	9.0	10.0	12.0	15.0
d_i	[mm]	2.45	2.75	3.25	4.00	5.35
$f_{ax,90,k}$	[N/mm²]	14.3	13.3	13.6	13.0	10.9
$f_{head,k}$	[N/mm²]	17.1	17.6	14.6	14.6	12.4
$F_{tens,k}$	[kN]	5.0	7.0	8.8	13.1	23.3
$M_{y,k}$	[Nmm]	3 100	4 200	5 900	10 700	22 600

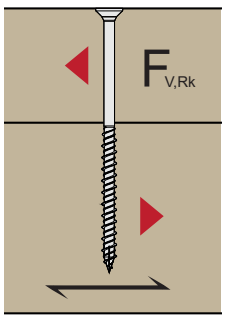


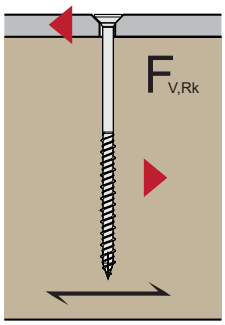
				AXIAL				SHEAR				
				HEAD PULL THROUGH		WITHDRAWAL		TIMBER-TIMBER		METAL-TIMBER		
	ø	L/b	$t_{1,min}$	$F_{head,Rk}$	$F_{head,ASD}$	$F_{ax,Rk}$	$F_{ax,ASD}$	$F_{v,Rk}$	$F_{v,ASD}$	$F_{V,Rk,thin}$	$F_{V,Rk,thick}$	$F_{v,ASD}$
	[mm]	[mm]	[mm]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]
ø 4.0	4.0	**30**/20	-	1.09	0.32	1.14	0.40	-	-	0.79	1.27	0.28
	4.0	**35**/20	-	1.09	0.32	1.14	0.40	-	-	0.94	1.40	0.33
	4.0	**40**/25	-	1.09	0.32	1.43	0.50	-	-	1.09	1.47	0.34
	4.0	**45**/25	-	1.09	0.32	1.43	0.50	-	-	1.15	1.47	0.34
	4.0	**50**/30	-	1.09	0.32	1.72	0.60	-	-	1.22	1.54	0.34
	4.0	**60**/35	25	1.09	0.32	2.00	0.70	1.06	0.27	1.29	1.61	0.34
	4.0	**70**/35	25	1.09	0.32	2.00	0.70	1.06	0.27	1.29	1.61	0.34
ø 4.5	4.5	**30**/20	-	1.43	0.41	1.20	0.45	-	-	0.84	1.39	0.30
	4.5	**35**/20	-	1.43	0.41	1.20	0.45	-	-	1.00	1.53	0.36
	4.5	**40**/25	-	1.43	0.41	1.50	0.56	-	-	1.17	1.73	0.42
	4.5	**45**/25	-	1.43	0.41	1.50	0.56	-	-	1.33	1.73	0.43
	4.5	**50**/30	-	1.43	0.41	1.80	0.68	-	-	1.40	1.80	0.43
	4.5	**60**/40	-	1.43	0.41	2.39	0.90	-	-	1.55	1.95	0.43
	4.5	**70**/40	30	1.43	0.41	2.39	0.90	1.31	0.34	1.55	1.95	0.43
	4.5	**80**/40	30	1.43	0.41	2.39	0.90	1.31	0.34	1.55	1.95	0.43
ø 5.0	5.0	**30**/20	-	1.46	0.50	1.36	0.50	-	-	0.89	1.57	0.33
	5.0	**35**/20	-	1.46	0.50	1.36	0.50	-	-	1.06	1.71	0.40
	5.0	**40**/25	-	1.46	0.50	1.70	0.63	-	-	1.24	1.94	0.46
	5.0	**50**/30	-	1.46	0.50	2.04	0.75	-	-	1.59	2.17	0.53
	5.0	**60**/40	-	1.46	0.50	2.72	1.00	-	-	1.86	2.34	0.53
	5.0	**70**/40	30	1.46	0.50	2.72	1.00	1.49	0.43	1.86	2.34	0.53
	5.0	**80**/50	30	1.46	0.50	3.40	1.25	1.49	0.43	2.03	2.51	0.53
	5.0	**90**/50	40	1.46	0.50	3.40	1.25	1.54	0.43	2.03	2.51	0.53
	5.0	**100**/60	40	1.46	0.50	4.08	1.50	1.54	0.43	2.20	2.68	0.53
	5.0	**110**/60	40	1.46	0.50	4.08	1.50	1.54	0.43	2.20	2.68	0.53
	5.0	**120**/60	40	1.46	0.50	4.08	1.50	1.54	0.43	2.20	2.68	0.53







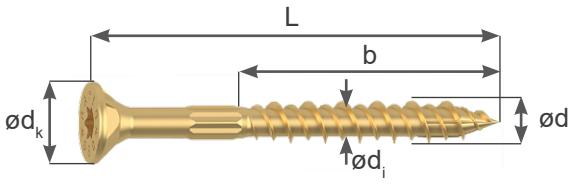




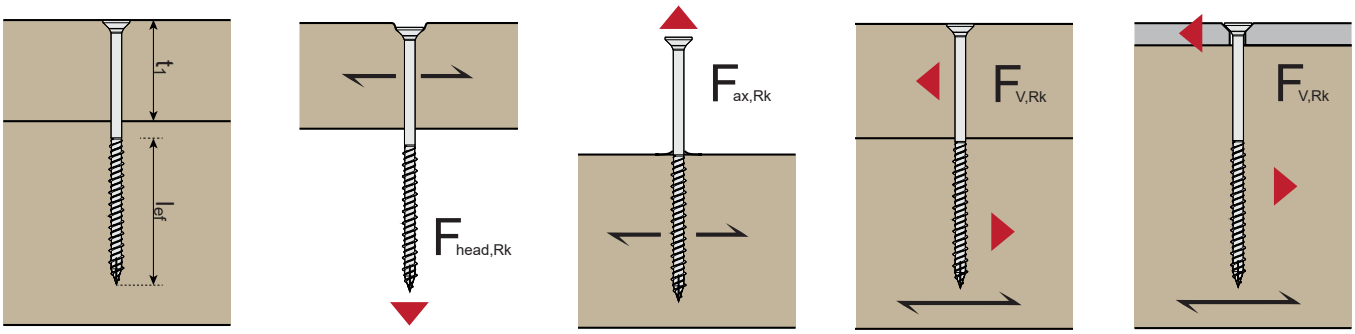
				AXIAL				SHEAR				
				HEAD PULL THROUGH		WITHDRAWAL		TIMBER-TIMBER		METAL-TIMBER		
	ø	L/b	$t_{1,min}$	$F_{head,Rk}$	$F_{head,ASD}$	$F_{ax,Rk}$	$F_{ax,ASD}$	$F_{v,Rk}$	$F_{v,ASD}$	$F_{V,Rk,thin}$	$F_{V,Rk,thick}$	$F_{v,ASD}$
	[mm]	[mm]	[mm]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]
ø 6.0	6.0	**50**/30	-	2.10	0.72	2.34	0.90	-	-	1.77	2.75	0.70
	6.0	**60**/40	-	2.10	0.72	3.12	1.20	-	-	2.17	3.17	0.77
	6.0	**70**/40	30	2.10	0.72	3.12	1.20	1.93	0.51	2.47	3.17	0.77
	6.0	**80**/50	30	2.10	0.72	3.90	1.50	1.93	0.61	2.66	3.36	0.77
	6.0	**90**/50	40	2.10	0.72	3.90	1.50	2.20	0.61	2.66	3.36	0.77
	6.0	**100**/60	40	2.10	0.72	4.68	1.80	2.20	0.61	2.86	3.56	0.77
	6.0	**110**/60	50	2.10	0.72	4.68	1.80	2.21	0.61	2.86	3.56	0.77
	6.0	**120**/70	50	2.10	0.72	5.46	2.10	2.21	0.61	3.05	3.75	0.77
	6.0	**130**/70	50	2.10	0.72	5.46	2.10	2.21	0.61	3.05	3.75	0.77
	6.0	**140**/70	50	2.10	0.72	5.46	2.10	2.21	0.61	3.05	3.75	0.77
	6.0	**150**/70	50	2.10	0.72	5.46	2.10	2.21	0.61	3.05	3.75	0.77
	6.0	**160**/70	50	2.10	0.72	5.46	2.10	2.21	0.61	3.05	3.75	0.77
	6.0	**180**/70	50	2.10	0.72	5.46	2.10	2.21	0.61	3.05	3.75	0.77
	6.0	**200**/70	50	2.10	0.72	5.46	2.10	2.21	0.61	3.05	3.75	0.77
	6.0	**220**/70	50	2.10	0.72	5.46	2.10	2.21	0.61	3.05	3.75	0.77
	6.0	**240**/70	50	2.10	0.72	5.46	2.10	2.21	0.61	3.05	3.75	0.77
	6.0	**260**/70	50	2.10	0.72	5.46	2.10	2.21	0.61	3.05	3.75	0.77
	6.0	**280**/70	50	2.10	0.72	5.46	2.10	2.21	0.61	3.05	3.75	0.77
	6.0	**300**/70	50	2.10	0.72	5.46	2.10	2.21	0.61	3.05	3.75	0.77
ø 8.0	8.0	**80**/50	30	2.79	1.13	4.36	2.00	2.69	0.75	3.54	4.93	1.36
	8.0	**90**/50	40	2.79	1.13	4.36	2.00	2.97	0.85	3.80	4.93	1.36
	8.0	**100**/60	40	2.79	1.13	5.23	2.40	2.97	1.02	4.02	5.14	1.36
	8.0	**120**/80	40	2.79	1.13	6.98	3.20	2.97	1.09	4.46	5.58	1.36
	8.0	**140**/80	60	2.79	1.13	6.98	3.20	3.41	1.09	4.46	5.58	1.36
	8.0	**160**/80	60	2.79	1.13	6.98	3.20	3.41	1.09	4.46	5.58	1.36
	8.0	**180**/100	60	2.79	1.13	8.72	4.00	3.41	1.09	4.89	6.02	1.36
	8.0	**200**/100	60	2.79	1.13	8.72	4.00	3.41	1.09	4.89	6.02	1.36

RAPID® partial thread countersunk head

Characteristics and values for C24				
d	**[mm]**	**ø 8**	**ø 10**	**ø 12**
d_k	[mm]	15.0	18.5	21.0
d_i	[mm]	5.35	6.80	7.00
$f_{ax,90,k}$	[N/mm²]	10.9	11.0	11.2
$f_{head,k}$	[N/mm²]	12.4	12.2	10,3
$F_{tens,k}$	[kN]	23.3	35.0	42.0
$M_{y,k}$	[Nmm]	22 600	33 600	46 900



				AXIAL				SHEAR				
				HEAD PULL THROUGH		WITHDRAWAL		TIMBER-TIMBER		METAL - TIMBER		
	ø	L/b	$t_{1,min}$	$F_{head,Rk}$	$F_{head,ASD}$	$F_{ax,Rk}$	$F_{ax,ASD}$	$F_{v,Rk}$	$F_{v,ASD}$	$F_{V,Rk,thin}$	$F_{V,Rk,thick}$	$F_{v,ASD}$
	[mm]	[mm]	[mm]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]
ø 8.0	8.0	**220**/100	60	2.79	1.13	8.72	4.00	3.41	1.09	4.89	6.02	1.36
	8.0	**240**/100	60	2.79	1.13	8.72	4.00	3.41	1.09	4.89	6.02	1.36
	8.0	**260**/100	60	2.79	1.13	8.72	4.00	3.41	1.09	4.89	6.02	1.36
	8.0	**280**/100	60	2.79	1.13	8.72	4.00	3.41	1.09	4.89	6.02	1.36
	8.0	**300**/100	60	2.79	1.13	8.72	4.00	3.41	1.09	4.89	6.02	1.36
	8.0	**320**/100	60	2.79	1.13	8.72	4.00	3.41	1.09	4.89	6.02	1.36
	8.0	**340**/100	60	2.79	1.13	8.72	4.00	3.41	1.09	4.89	6.02	1.36
	8.0	**360**/100	60	2.79	1.13	8.72	4.00	3.41	1.09	4.89	6.02	1.36
	8.0	**380**/100	60	2.79	1.13	8.72	4.00	3.41	1.09	4.89	6.02	1.36
	8.0	**400**/100	60	2.79	1.13	8.72	4.00	3.41	1.09	4.89	6.02	1.36
	8.0	**420**/100	60	2.79	1.13	8.72	4.00	3.41	1.09	4.89	6.02	1.36
	8.0	**440**/100	60	2.79	1.13	8.72	4.00	3.41	1.09	4.89	6.02	1.36
	8.0	**460**/100	60	2.79	1.13	8.72	4.00	3.41	1.09	4.89	6.02	1.36
	8.0	**480**/100	60	2.79	1.13	8.72	4.00	3.41	1.09	4.89	6.02	1.36
	8.0	**500**/100	60	2.79	1.13	8.72	4.00	3.41	1.09	4.89	6.02	1.36
ø 10.0	10.0	**80**/50	-	4.18	1.71	5.50	2.50	-	-	4.03	6.21	1.86
	10.0	**100**/60	40	4.18	1.71	6.60	3.00	3.86	1.20	5.18	6.71	2.13
	10.0	**120**/80	40	4.18	1.71	8.80	4.00	3.86	1.60	5.78	7.26	2.13
	10.0	**140**/80	60	4.18	1.71	8.80	4.00	4.62	1.70	5.78	7.26	2.13
	10.0	**160**/80	60	4.18	1.71	8.80	4.00	4.62	1.70	5.78	7.26	2.13
	10.0	**180**/100	60	4.18	1.71	11.00	5.00	4.62	1.70	6.33	7.81	2.13
	10.0	**200**/100	60	4.18	1.71	11.00	5.00	4.62	1.70	6.33	7.81	2.13
	10.0	**220**/100	60	4.18	1.71	11.00	5.00	4.62	1.70	6.33	7.81	2.13
	10.0	**240**/100	60	4.18	1.71	11.00	5.00	4.62	1.70	6.33	7.81	2.13
	10.0	**260**/100	60	4.18	1.71	11.00	5.00	4.62	1.70	6.33	7.81	2.13
	10.0	**280**/100	60	4.18	1.71	11.00	5.00	4.62	1.70	6.33	7.81	2.13



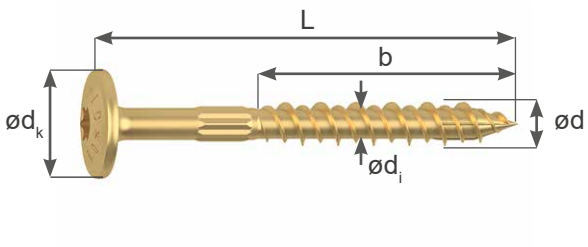
				AXIAL				SHEAR				
				HEAD PULL THROUGH		WITHDRAWAL		TIMBER-TIMBER		METAL - TIMBER		
	ø	L/b	$t_{1.min}$	$F_{head.Rk}$	$F_{head.ASD}$	$F_{ax.Rk}$	$F_{ax.ASD}$	$F_{v.Rk}$	$F_{v.ASD}$	$F_{V.Rk.thin}$	$F_{V.Rk.thick}$	$F_{v.ASD}$
	[mm]	[mm]	[mm]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]
ø 10.0	10.0	**300**/100	60	4.18	1.71	11.00	5.00	4.62	1.70	6.33	7.81	2.13
	10.0	**320**/100	60	4.18	1.71	11.00	5.00	4.62	1.70	6.33	7.81	2.13
	10.0	**340**/100	60	4.18	1.71	11.00	5.00	4.62	1.70	6.33	7.81	2.13
	10.0	**360**/100	60	4.18	1.71	11.00	5.00	4.62	1.70	6.33	7.81	2.13
	10.0	**380**/100	60	4.18	1.71	11.00	5.00	4.62	1.70	6.33	7.81	2.13
	10.0	**400**/100	60	4.18	1.71	11.00	5.00	4.62	1.70	6.33	7.81	2.13
	10.0	**420**/100	60	4.18	1.71	11.00	5.00	4.62	1.70	6.33	7.81	2.13
	10.0	**440**/100	60	4.18	1.71	11.00	5.00	4.62	1.70	6.33	7.81	2.13
	10.0	**460**/100	60	4.18	1.71	11.00	5.00	4.62	1.70	6.33	7.81	2.13
	10.0	**480**/100	60	4.18	1.71	11.00	5.00	4.62	1.70	6.33	7.81	2.13
	10.0	**500**/100	60	4.18	1.71	11.00	5.00	4.62	1.70	6.33	7.81	2.13
ø 12.0	12.0	**100**/60	-	4.54	2.21	8.06	3.60	-	-	5.75	8.38	2.81
	12.0	**120**/80	-	4.54	2.21	10.75	4.80	-	-	7.06	9.06	3.06
	12.0	**140**/80	-	4.54	2.21	10.75	4.80	-	-	7.19	9.06	3.06
	12.0	**160**/80	80	4.54	2.21	10.75	4.80	5.64	2.04	7.19	9.06	3.06
	12.0	**180**/100	80	4.54	2.21	13.44	6.00	5.64	2.45	7.86	9.73	3.06
	12.0	**200**/100	80	4.54	2.21	13.44	6.00	5.64	2.45	7.86	9.73	3.06
	12.0	**220**/100	80	4.54	2.21	13.44	6.00	5.64	2.45	7.86	9.73	3.06
	12.0	**240**/100	80	4.54	2.21	13.44	6.00	5.64	2.45	7.86	9.73	3.06
	12.0	**260**/100	80	4.54	2.21	13.44	6.00	5.64	2.45	7.86	9.73	3.06
	12.0	**280**/100	80	4.54	2.21	13.44	6.00	5.64	2.45	7.86	9.73	3.06
	12.0	**300**/120	80	4.54	2.21	16.13	7.20	5.64	2.45	8.53	10.40	3.06
	12.0	**320**/120	80	4.54	2.21	16.13	7.20	5.64	2.45	8.53	10.40	3.06
	12.0	**340**/120	80	4.54	2.21	16.13	7.20	5.64	2.45	8.53	10.40	3.06
	12.0	**360**/120	80	4.54	2.21	16.13	7.20	5.64	2.45	8.53	10.40	3.06
	12.0	**380**/120	80	4.54	2.21	16.13	7.20	5.64	2.45	8.53	10.40	3.06
	12.0	**400**/120	80	4.54	2.21	16.13	7.20	5.64	2.45	8.53	10.40	3.06

Values for C24 (ρ_k=350kg/m³), axial axis to grain: 30° - 90°, $F_{ax,Rk}$ = thread withdrawal, $F_{head,Rk}$ = head pull through, $F_{v,Rk}$ = shear (// to grain 0° – ⊥ to grain 90°), wood/steel plate: l_{ef} = thread length b, t_1 min= minimum wood thickness, t_1 max= maximum wood thickness add-on part (L-b), $F_{V,Rk,thin}$= steel sheet t ≤ d/2, $F_{V,RK,thick}$= steel sheet t ≥ d

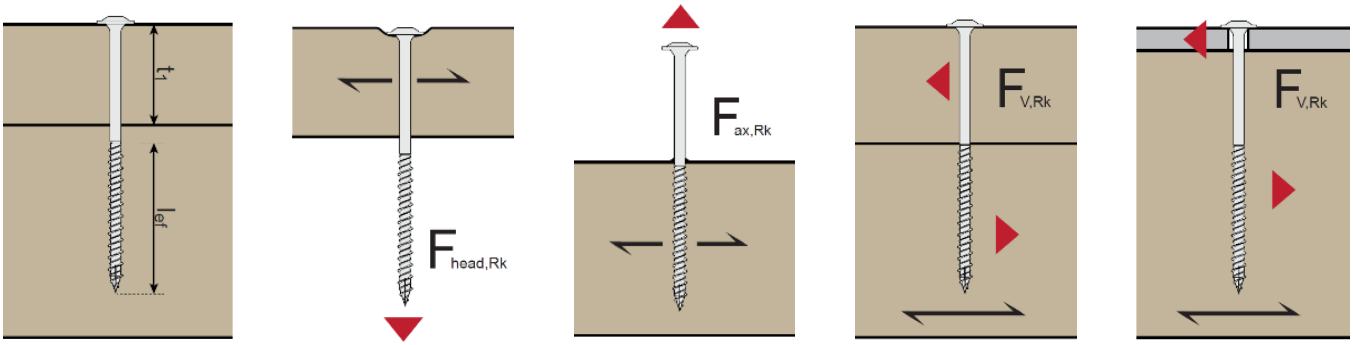
Type and printing errors reserved. The values stated are meant to serve as planning guides; projects should only be undertaken by authorised professionals.

RAPID® partial thread washer head

Characteristics and values for C24				
d	**[mm]**	**ø 6**	**ø 8**	**ø 10**
d_k	[mm]	14.0	20.0	25.0
d_i	[mm]	4.00	5.35	6.80
$f_{ax,90,k}$	[N/mm²]	13.0	10.9	11.0
$f_{head,k}$	[N/mm²]	16.7	17.6	15.2
$F_{tens,k}$	[kN]	13.1	23.3	35.0
$M_{y,k}$	[Nmm]	10 700	22 600	33 600



				AXIAL				SHEAR				
				HEAD PULL THROUGH		WITHDRAWAL		TIMBER-TIMBER		METAL - TIMBER		
	ø	L/b	$t_{1,min}$	$F_{head,Rk}$	$F_{head,ASD}$	$F_{ax,Rk}$	$F_{ax,ASD}$	$F_{v,Rk}$	$F_{v,ASD}$	$F_{V,Rk,thin}$	$F_{V,Rk,thick}$	$F_{v,ASD}$
	[mm]	[mm]	[mm]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]
ø 6.0	6.0	**60**/40	-	3.27	0.98	3.12	1.20	-	-	2.17	3.17	0.77
	6.0	**80**/50	30	3.27	0.98	3.90	1.50	2.22	0.61	2.66	3.36	0.77
	6.0	**100**/60	40	3.27	0.98	4.68	1.80	2.49	0.61	2.86	3.56	0.77
	6.0	**120**/70	50	3.27	0.98	5.46	2.10	2.51	0.61	3.05	3.75	0.77
	6.0	**140**/70	50	3.27	0.98	5.46	2.10	2.51	0.61	3.05	3.75	0.77
	6.0	**160**/70	50	3.27	0.98	5.46	2.10	2.51	0.61	3.05	3.75	0.77
	6.0	**180**/70	50	3.27	0.98	5.46	2.10	2.51	0.61	3.05	3.75	0.77
	6.0	**200**/70	50	3.27	0.98	5.46	2.10	2.51	0.61	3.05	3.75	0.77
	6.0	**220**/70	50	3.27	0.98	5.46	2.10	2.51	0.61	3.05	3.75	0.77
	6.0	**240**/70	50	3.27	0.98	5.46	2.10	2.51	0.61	3.05	3.75	0.77
	6.0	**260**/70	50	3.27	0.98	5.46	2.10	2.51	0.61	3.05	3.75	0.77
	6.0	**280**/70	50	3.27	0.98	5.46	2.10	2.51	0.61	3.05	3.75	0.77
	6.0	**300**/70	50	3.27	0.98	5.46	2.10	2.51	0.61	3.05	3.75	0.77
ø 8.0	8.0	**80**/50	30	7.04	2.00	4.36	2.00	3.08	0.75	3.54	4.93	1.36
	8.0	**100**/60	40	7.04	2.00	5.23	2.40	3.58	1.02	4.02	5.14	1.36
	8.0	**120**/80	40	7.04	2.00	6.98	3.20	4.02	1.09	4.46	5.58	1.36
	8.0	**140**/80	60	7.04	2.00	6.98	3.20	4.46	1.09	4.46	5.58	1.36
	8.0	**160**/80	60	7.04	2.00	6.98	3.20	4.46	1.09	4.46	5.58	1.36
	8.0	**180**/100	60	7.04	2.00	8.72	4.00	4.47	1.09	4.89	6.02	1.36
	8.0	**200**/100	60	7.04	2.00	8.72	4.00	4.47	1.09	4.89	6.02	1.36
	8.0	**220**/100	60	7.04	2.00	8.72	4.00	4.47	1.09	4.89	6.02	1.36
	8.0	**240**/100	60	7.04	2.00	8.72	4.00	4.47	1.09	4.89	6.02	1.36
	8.0	**260**/100	60	7.04	2.00	8.72	4.00	4.47	1.09	4.89	6.02	1.36
	8.0	**280**/100	60	7.04	2.00	8.72	4.00	4.47	1.09	4.89	6.02	1.36
	8.0	**300**/100	60	7.04	2.00	8.72	4.00	4.47	1.09	4.89	6.02	1.36

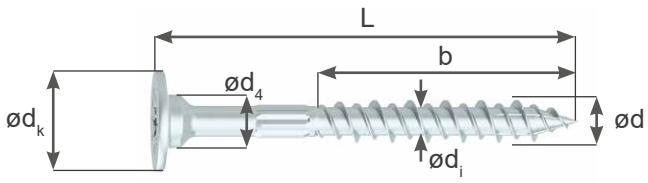


				AXIAL				SHEAR				
				HEAD PULL THROUGH		WITHDRAWAL		TIMBER-TIMBER		METAL - TIMBER		
	ø	L/b	$t_{1,min}$	$F_{head,Rk}$	$F_{head,ASD}$	$F_{ax,Rk}$	$F_{ax,ASD}$	$F_{v,Rk}$	$F_{v,ASD}$	$F_{V,Rk,thin}$	$F_{V,Rk,thick}$	$F_{v,ASD}$
	[mm]	[mm]	[mm]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]
ø 8.0	8.0	**320**/100	60	7.04	2.00	8.72	4.00	4.47	1.09	4.89	6.02	1.36
	8.0	**340**/100	60	7.04	2.00	8.72	4.00	4.47	1.09	4.89	6.02	1.36
	8.0	**360**/100	60	7.04	2.00	8.72	4.00	4.47	1.09	4.89	6.02	1.36
	8.0	**380**/100	60	7.04	2.00	8.72	4.00	4.47	1.09	4.89	6.02	1.36
	8.0	**400**/100	60	7.04	2.00	8.72	4.00	4.47	1.09	4.89	6.02	1.36
	8.0	**450**/100	60	7.04	2.00	8.72	4.00	4.47	1.09	4.89	6.02	1.36
	8.0	**500**/100	60	7.04	2.00	8.72	4.00	4.47	1.09	4.89	6.02	1.36
ø 10.0	10.0	**100**/60	40	9.50	3.13	6.60	3.00	4.47	1.20	5.18	6.71	2.13
	10.0	**120**/80	40	9.50	3.13	8.80	4.00	5.02	1.60	5.78	7.26	2.13
	10.0	**140**/80	60	9.50	3.13	8.80	4.00	5.78	1.70	5.78	7.26	2.13
	10.0	**160**/80	60	9.50	3.13	8.80	4.00	5.78	1.70	5.78	7.26	2.13
	10.0	**180**/100	60	9.50	3.13	11.00	5.00	5.95	1.70	6.33	7.81	2.13
	10.0	**200**/100	60	9.50	3.13	11.00	5.00	5.95	1.70	6.33	7.81	2.13
	10.0	**220**/100	60	9.50	3.13	11.00	5.00	5.95	1.70	6.33	7.81	2.13
	10.0	**240**/100	60	9.50	3.13	11.00	5.00	5.95	1.70	6.33	7.81	2.13
	10.0	**260**/100	60	9.50	3.13	11.00	5.00	5.95	1.70	6.33	7.81	2.13
	10.0	**280**/100	60	9.50	3.13	11.00	5.00	5.95	1.70	6.33	7.81	2.13
	10.0	**300**/100	60	9.50	3.13	11.00	5.00	5.95	1.70	6.33	7.81	2.13
	10.0	**320**/100	60	9.50	3.13	11.00	5.00	5.95	1.70	6.33	7.81	2.13
	10.0	**340**/100	60	9.50	3.13	11.00	5.00	5.95	1.70	6.33	7.81	2.13
	10.0	**360**/100	60	9.50	3.13	11.00	5.00	5.95	1.70	6.33	7.81	2.13
	10.0	**380**/100	60	9.50	3.13	11.00	5.00	5.95	1.70	6.33	7.81	2.13
	10.0	**400**/100	60	9.50	3.13	11.00	5.00	5.95	1.70	6.33	7.81	2.13
	10.0	**450**/100	60	9.50	3.13	11.00	5.00	5.95	1.70	6.33	7.81	2.13
	10.0	**500**/100	60	9.50	3.13	11.00	5.00	5.95	1.70	6.33	7.81	2.13

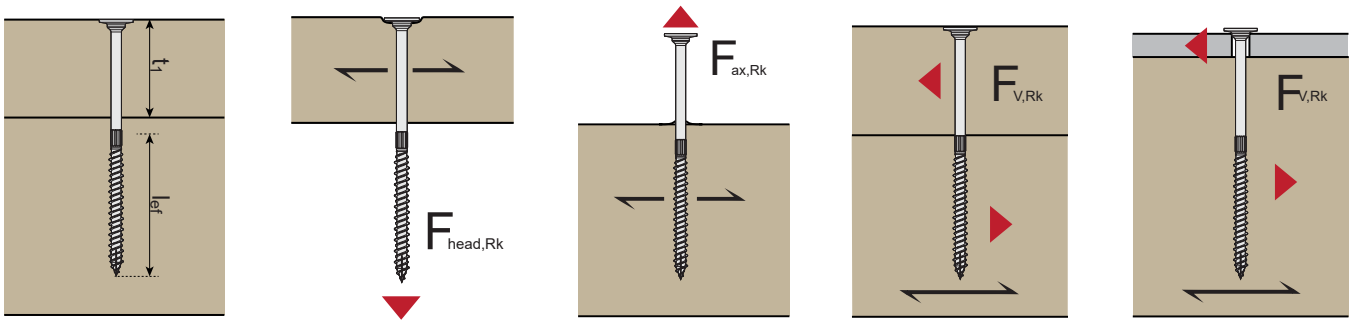
Values for C24 (ρ_k=350kg/m³), axial axis to grain: 30° - 90°, $F_{ax,Rk}$ = thread withdrawal, $F_{head,Rk}$ = head pull through, $F_{v,Rk}$ = shear (// to grain 0° – ⊥ to grain 90°), wood/steel plate: l_{ef} = thread length b, t_1 min= minimum wood thickness, t_1 max= maximum wood thickness add-on part (L-b), $F_{V,Rk,thin}$= steel sheet t ≤ d/2, $F_{V,RK,thick}$= steel sheet t ≥ d

RAPID® partial thread SuperSenkFix

Characteristics and values for C24				
d	**[mm]**	**ø 6**	**ø 8**	**ø 10**
d_k	[mm]	13.0	19.0	24.0
d_4	[mm]	8.0	10.0	13.0
d_i	[mm]	4.00	5.35	6.80
$f_{ax,90,k}$	[N/mm²]	13.0	10.9	11.0
$f_{head,k}$	[N/mm²]	19.7	22.9	12.3
$F_{tens,k}$	[kN]	13.1	23.3	35.0
$M_{y,k}$	[Nmm]	10 700	22 600	33 600



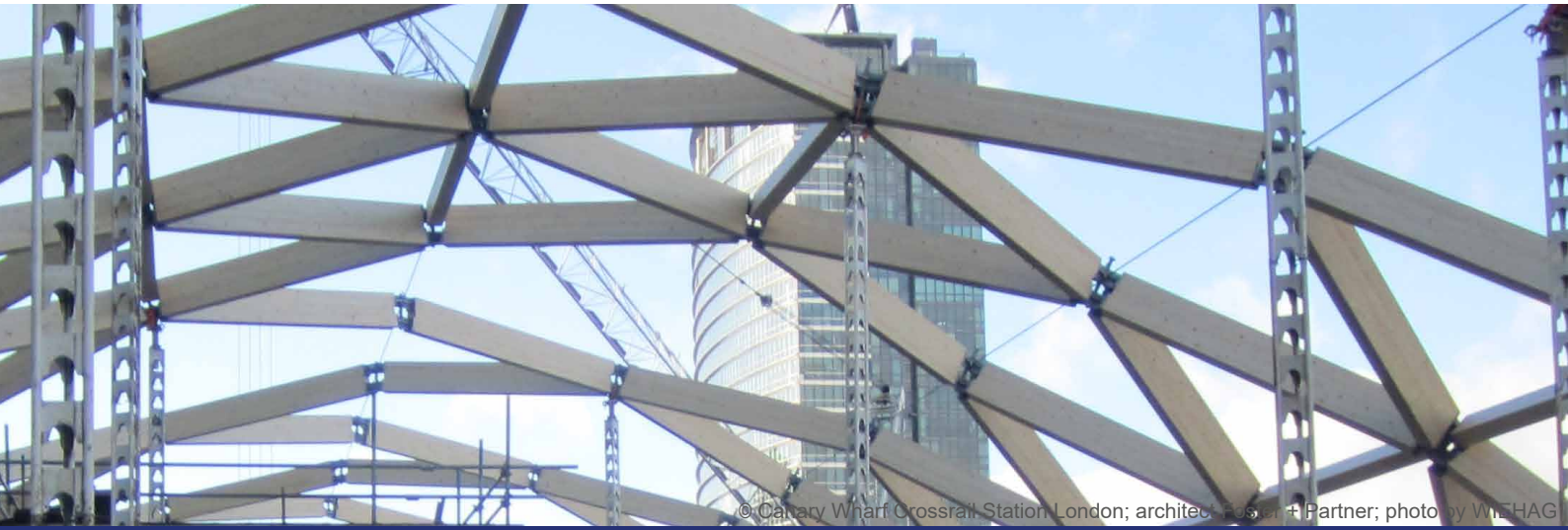
				AXIAL				SHEAR				
				HEAD PULL THROUGH		WITHDRAWAL		TIMBER-TIMBER		METAL - TIMBER		
	ø	L/b	$t_{1,min}$	$F_{head,Rk}$	$F_{head,ASD}$	$F_{ax,Rk}$	$F_{ax,ASD}$	$F_{v,Rk}$	$F_{v,ASD}$	$F_{V,Rk,thin}$	$F_{V,Rk,thick}$	$F_{v,ASD}$
	[mm]	[mm]	[mm]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]
ø 6.0	6.0	**80**/50	30	3.33	0.85	3.90	1.50	2.23	0.61	2.66	3.36	0.77
	6.0	**100**/60	40	3.33	0.85	4.68	1.80	2.51	0.61	2.86	3.56	0.77
	6.0	**120**/70	50	3.33	0.85	5.46	2.10	2.52	0.61	3.05	3.75	0.77
	6.0	**140**/70	50	3.33	0.85	5.46	2.10	2.52	0.61	3.05	3.75	0.77
	6.0	**160**/70	50	3.33	0.85	5.46	2.10	2.52	0.61	3.05	3.75	0.77
	6.0	**180**/70	50	3.33	0.85	5.46	2.10	2.52	0.61	3.05	3.75	0.77
	6.0	**200**/70	50	3.33	0.85	5.46	2.10	2.52	0.61	3.05	3.75	0.77
ø 8.0	8.0	**80**/50	30	8.27	1.81	4.36	2.00	3.08	0.75	3.54	4.93	1.36
	8.0	**100**/60	40	8.27	1.81	5.23	2.40	3.58	1.02	4.02	5.14	1.36
	8.0	**120**/80	40	8.27	1.81	6.98	3.20	4.02	1.09	4.46	5.58	1.36
	8.0	**140**/80	60	8.27	1.81	6.98	3.20	4.46	1.09	4.46	5.58	1.36
	8.0	**160**/80	60	8.27	1.81	6.98	3.20	4.46	1.09	4.46	5.58	1.36
	8.0	**180**/100	60	8.27	1.81	8.72	4.00	4.78	1.09	4.89	6.02	1.36
	8.0	**200**/100	60	8.27	1.81	8.72	4.00	4.78	1.09	4.89	6.02	1.36
	8.0	**220**/100	60	8.27	1.81	8.72	4.00	4.78	1.09	4.89	6.02	1.36
	8.0	**240**/100	60	8.27	1.81	8.72	4.00	4.78	1.09	4.89	6.02	1.36
	8.0	**260**/100	60	8.27	1.81	8.72	4.00	4.78	1.09	4.89	6.02	1.36
	8.0	**280**/100	60	8.27	1.81	8.72	4.00	4.78	1.09	4.89	6.02	1.36
	8.0	**300**/100	60	8.27	1.81	8.72	4.00	4.78	1.09	4.89	6.02	1.36
	8.0	**320**/100	60	8.27	1.81	8.72	4.00	4.78	1.09	4.89	6.02	1.36
	8.0	**340**/100	60	8.27	1.81	8.72	4.00	4.78	1.09	4.89	6.02	1.36
	8.0	**360**/100	60	8.27	1.81	8.72	4.00	4.78	1.09	4.89	6.02	1.36
	8.0	**380**/100	60	8.27	1.81	8.72	4.00	4.78	1.09	4.89	6.02	1.36
	8.0	**400**/100	60	8.27	1.81	8.72	4.00	4.78	1.09	4.89	6.02	1.36



				AXIAL				SHEAR				
				HEAD PULL THROUGH		WITHDRAWAL		TIMBER-TIMBER		METAL - TIMBER		
	ø	L/b	$t_{1,min}$	$F_{head,Rk}$	$F_{head,ASD}$	$F_{ax,Rk}$	$F_{ax,ASD}$	$F_{v,Rk}$	$F_{v,ASD}$	$F_{V,Rk,thin}$	$F_{V,Rk,thick}$	$F_{v,ASD}$
	[mm]	[mm]	[mm]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]
ø 10.0	10.0	**120**/80	40	7.08	2.88	8.80	4.00	4.59	1.60	5.78	7.26	2.13
	10.0	**140**/80	60	7.08	2.88	8.80	4.00	5.35	1.70	5.78	7.26	2.13
	10.0	**160**/80	60	7.08	2.88	8.80	4.00	5.35	1.70	5.78	7.26	2.13
	10.0	**180**/100	60	7.08	2.88	11.00	5.00	5.35	1.70	6.33	7.81	2.13
	10.0	**200**/100	60	7.08	2.88	11.00	5.00	5.35	1.70	6.33	7.81	2.13
	10.0	**220**/100	60	7.08	2.88	11.00	5.00	5.35	1.70	6.33	7.81	2.13
	10.0	**240**/100	60	7.08	2.88	11.00	5.00	5.35	1.70	6.33	7.81	2.13
	10.0	**260**/100	60	7.08	2.88	11.00	5.00	5.35	1.70	6.33	7.81	2.13
	10.0	**280**/100	60	7.08	2.88	11.00	5.00	5.35	1.70	6.33	7.81	2.13
	10.0	**300**/100	60	7.08	2.88	11.00	5.00	5.35	1.70	6.33	7.81	2.13
	10.0	**350**/100	60	7.08	2.88	11.00	5.00	5.35	1.70	6.33	7.81	2.13
	10.0	**400**/100	60	7.08	2.88	11.00	5.00	5.35	1.70	6.33	7.81	2.13

Values for C24 (ρ_k=350kg/m³), axial axis to grain: 30° - 90°, $F_{ax,Rk}$ = thread withdrawal, $F_{head,Rk}$ = head pull through, $F_{v,Rk}$ = shear (// to grain 0° – ⊥ to grain 90°), wood/steel plate: l_{ef} = thread length b, t_1 min= minimum wood thickness, t_1 max= maximum wood thickness add-on part (L-b), $F_{V,Rk,thin}$= steel sheet t ≤ d/2, $F_{V,RK,thick}$= steel sheet t ≥ d

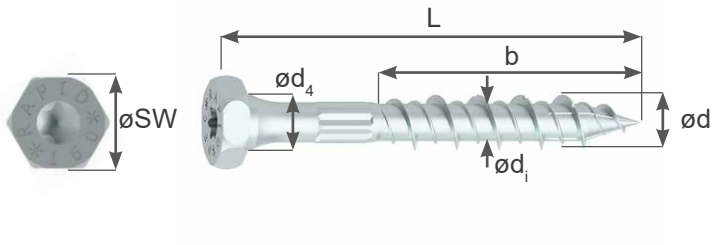
Type and printing errors reserved. The values stated are meant to serve as planning guides; projects should only be undertaken by authorised professionals.



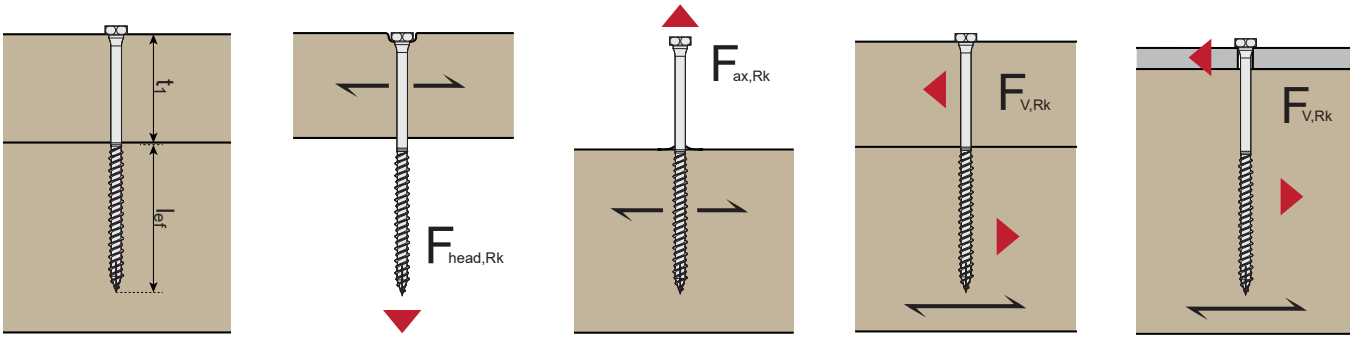
© Canary Wharf Crossrail Station London; architect: Foster + Partner; photo by WITHAG

RAPID® partial thread Dual

Characteristics and values for C24				
d	**[mm]**	**ø 8**	**ø 10**	**ø 12**
$SW = d_k$	[mm]	12.0	15.0	17.0
d_i	[mm]	5.35	6.80	7.00
d_4	[mm]	7.8	9.8	11.8
$f_{ax,90,k}$	[N/mm²]	10.9	11.0	11.2
$f_{head,k}$	[N/mm²]	16.5	16.7	17.1
$F_{tens,k}$	[kN]	23.3	35.0	42.0
$M_{y,k}$	[Nmm]	22 600	33 600	46 900



				AXIAL				SHEAR				
				HEAD PULL THROUGH		WITHDRAWAL		TIMBER-TIMBER		METAL-TIMBER		
	ø	L/b	$t_{1,min}$	$F_{head,Rk}$	$F_{head,ASD}$	$F_{ax,Rk}$	$F_{ax,ASD}$	$F_{v,Rk}$	$F_{v,ASD}$	$F_{V,Rk,thin}$	$F_{V,Rk,thick}$	$F_{v,ASD}$
	[mm]	[mm]	[mm]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]
ø 8.0	8.0	**50**/30	-	2.38	0.72	2.62	1.20	-	-	2.07	3.52	0.89
	8.0	**60**/40	-	2.38	0.72	3.49	1.60	-	-	2.56	4.12	1.11
	8.0	**70**/40	30	2.38	0.72	3.49	1.60	2.41	0.60	3.05	4.54	1.32
	8.0	**80**/50	30	2.38	0.72	4.36	2.00	2.58	0.75	3.54	4.93	1.36
	8.0	**100**/60	40	2.38	0.72	5.23	2.40	2.87	1.02	4.02	5.14	1.36
	8.0	**120**/80	40	2.38	0.72	6.98	3.20	2.87	1.09	4.46	5.58	1.36
	8.0	**140**/80	60	2.38	0.72	6.98	3.20	3.31	1.09	4.46	5.58	1.36
	8.0	**160**/80	60	2.38	0.72	6.98	3.20	3.31	1.09	4.46	5.58	1.36
	8.0	**180**/100	60	2.38	0.72	8.72	4.00	3.31	1.09	4.89	6.02	1.36
	8.0	**200**/100	60	2.38	0.72	8.72	4.00	3.31	1.09	4.89	6.02	1.36
	8.0	**220**/100	60	2.38	0.72	8.72	4.00	3.31	1.09	4.89	6.02	1.36
	8.0	**240**/100	60	2.38	0.72	8.72	4.00	3.31	1.09	4.89	6.02	1.36
	8.0	**260**/100	60	2.38	0.72	8.72	4.00	3.31	1.09	4.89	6.02	1.36
	8.0	**280**/100	60	2.38	0.72	8.72	4.00	3.31	1.09	4.89	6.02	1.36
	8.0	**300**/100	60	2.38	0.72	8.72	4.00	3.31	1.09	4.89	6.02	1.36
	8.0	**320**/100	60	2.38	0.72	8.72	4.00	3.31	1.09	4.89	6.02	1.36
	8.0	**340**/100	60	2.38	0.72	8.72	4.00	3.31	1.09	4.89	6.02	1.36
	8.0	**360**/100	60	2.38	0.72	8.72	4.00	3.31	1.09	4.89	6.02	1.36
	8.0	**380**/100	60	2.38	0.72	8.72	4.00	3.31	1.09	4.89	6.02	1.36
	8.0	**400**/100	60	2.38	0.72	8.72	4.00	3.31	1.09	4.89	6.02	1.36
ø 10.0	10.0	**60**/40	-	3.76	1.13	4.40	2.00	-	-	2.88	4.99	1.33
	10.0	**70**/40	-	3.76	1.13	4.40	2.00	-	-	3.45	5.44	1.59
	10.0	**80**/50	-	3.76	1.13	5.50	2.50	-	-	4.03	6.21	1.86
	10.0	**100**/60	40	3.76	1.13	6.60	3.00	3.76	1.20	5.18	6.71	2.13
	10.0	**120**/80	40	3.76	1.13	8.80	4.00	3.76	1.60	5.78	7.26	2.13



				AXIAL				SHEAR				
				HEAD PULL THROUGH		WITHDRAWAL		TIMBER-TIMBER		METAL-TIMBER		
	ø	L/b	$t_{1,min}$	$F_{head,Rk}$	$F_{head,ASD}$	$F_{ax,Rk}$	$F_{ax,ASD}$	$F_{v,Rk}$	$F_{v,ASD}$	$F_{V,Rk,thin}$	$F_{V,Rk,thick}$	$F_{v,ASD}$
	[mm]	[mm]	[mm]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]
ø 10.0	10.0	**140**/80	60	3.76	1.13	8.80	4.00	4.51	1.70	5.78	7.26	2.13
	10.0	**160**/80	60	3.76	1.13	8.80	4.00	4.51	1.70	5.78	7.26	2.13
	10.0	**180**/100	60	3.76	1.13	11.00	5.00	4.51	1.70	6.33	7.81	2.13
	10.0	**200**/100	60	3.76	1.13	11.00	5.00	4.51	1.70	6.33	7.81	2.13
	10.0	**220**/100	60	3.76	1.13	11.00	5.00	4.51	1.70	6.33	7.81	2.13
	10.0	**240**/100	60	3.76	1.13	11.00	5.00	4.51	1.70	6.33	7.81	2.13
	10.0	**260**/100	60	3.76	1.13	11.00	5.00	4.51	1.70	6.33	7.81	2.13
	10.0	**280**/100	60	3.76	1.13	11.00	5.00	4.51	1.70	6.33	7.81	2.13
	10.0	**300**/100	60	3.76	1.13	11.00	5.00	4.51	1.70	6.33	7.81	2.13
	10.0	**350**/100	60	3.76	1.13	11.00	5.00	4.51	1.70	6.33	7.81	2.13
	10.0	**400**/100	60	3.76	1.13	11.00	5.00	4.51	1.70	6.33	7.81	2.13
ø 12.0	12.0	**80**/50	-	4.94	1.45	6.72	3.00	-	-	4.45	7.23	2.17
	12.0	**100**/60	-	4.94	1.45	8.06	3.60	-	-	5.75	8.38	2.81
	12.0	**120**/80	-	4.94	1.45	10.75	4.80	-	-	7.06	9.06	3.06
	12.0	**140**/80	-	4.94	1.45	10.75	4.80	-	-	7.19	9.06	3.06
	12.0	**160**/80	80	4.94	1.45	10.75	4.80	5.74	2.04	7.19	9.06	3.06
	12.0	**180**/100	80	4.94	1.45	13.44	6.00	5.74	2.45	7.86	9.73	3.06
	12.0	**200**/100	80	4.94	1.45	13.44	6.00	5.74	2.45	7.86	9.73	3.06
	12.0	**220**/100	80	4.94	1.45	13.44	6.00	5.74	2.45	7.86	9.73	3.06
	12.0	**240**/100	80	4.94	1.45	13.44	6.00	5.74	2.45	7.86	9.73	3.06
	12.0	**260**/100	80	4.94	1.45	13.44	6.00	5.74	2.45	7.86	9.73	3.06
	12.0	**280**/100	80	4.94	1.45	13.44	6.00	5.74	2.45	7.86	9.73	3.06
	12.0	**300**/120	80	4.94	1.45	16.13	7.20	5.74	2.45	8.53	10.40	3.06
	12.0	**350**/120	80	4.94	1.45	16.13	7.20	5.74	2.45	8.53	10.40	3.06
	12.0	**400**/120	80	4.94	1.45	16.13	7.20	5.74	2.45	8.53	10.40	3.06

Values for C24 (ρ_k=350kg/m³), axial axis to grain: 30° - 90°, $F_{ax,Rk}$ = thread withdrawal, $F_{head,Rk}$ = head pull through, $F_{v,Rk}$ = shear (// to grain 0° – ⊥ to grain 90°), wood/steel plate: l_{ef} = thread length b, t_1 min= minimum wood thickness, t_1 max= maximum wood thickness add-on part (L-b), $F_{V,Rk,thin}$= steel sheet t ≤ d/2, $F_{V,RK,thick}$= steel sheet t ≥ d

Type and printing errors reserved. The values stated are meant to serve as planning guides; projects should only be undertaken by authorised professionals.

StarDrive GPR®

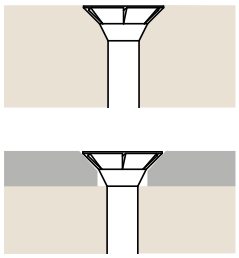
Highest quality – innovative technology

Head types

90° countersunk head with milling fins

> Underhead fins for optimal countersinking in timber

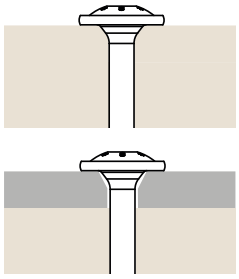
> Reduce tearing and splitting in the wood



Washer head

> Highest permissible head pull-through values for sturdy joints pulled tightly together

> No washers required, which makes processing faster



Thread geometry

Lower screw-in resistance

> The friction part reduces the screw-in resistance by reaming the wood around the shaft

Fast screwing processes

> Coarse thread including patented follower thread, rolled out to the tip

> Low screw-in torque

Patented follower thread tip – no pre-drilling necessary

> Ensures that screw bites quickly with low splitting

Dimensions & surfaces

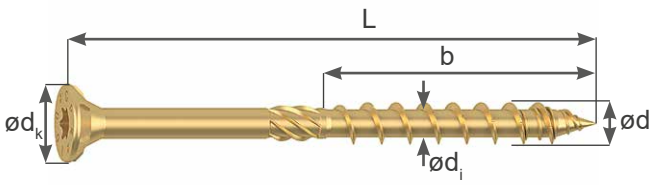
		Countersunk head	Washer head	A4 counter-sunk head	A4 washer head
					
Ø 4.0	Drive	T 20	–	–	–
	Length	30-70 mm	–	–	–
	Thread	Coarse thread	–	–	–
	Underhead	Underhead ribs	–	–	–
Ø 4.5	Drive	T 20	–	–	–
	Length	50-80 mm	–	–	–
	Thread	Coarse thread	–	–	–
	Underhead	Underhead ribs	–	–	–
Ø 5.0	Drive	T 25	–	–	–
	Length	50-120 mm	–	–	–
	Thread	Coarse thread	–	–	–
	Underhead	Underhead ribs	–	–	–
Ø 6.0	Drive	T 30	T 30	–	–
	Length	60-300 mm	60–200 mm	–	–
	Thread	Coarse thread	Coarse thread	–	–
	Underhead	Underhead ribs	Cone	–	–
Ø 8.0	Drive	T 40	T 40	T 40	T 40
	Length	80–400 mm	80–400 mm	100–140 mm	100–140 mm
	Thread	Coarse thread	Coarse thread	Coarse thread	Coarse thread
	Underhead	Underhead ribs	Cone	Underhead ribs	Cone
Ø 10.0	Drive	T 40	T 50	–	–
	Length	80–400 mm	100–400 mm	–	–
	Thread	Coarse thread	Coarse thread	–	–
	Underhead	Underhead ribs	Cone	–	–
	Surface	galvanised yellow/galvanised blue		Stainless steel A4	

ETA-12/0373

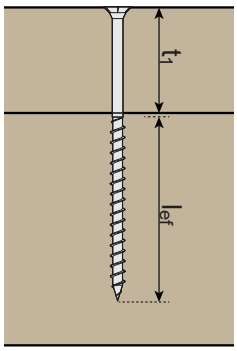
Stardrive GPR® partial thread countersunk head

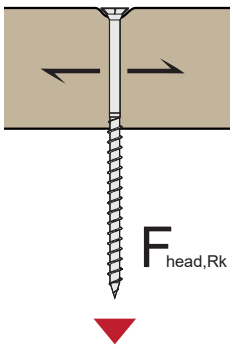
Characteristics and values for C24

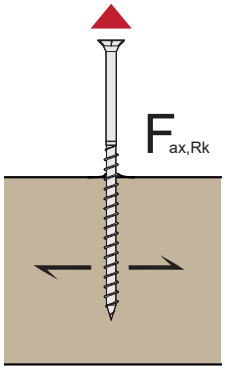
d	[mm]	ø 4	ø 4.5	ø 5	ø 6	ø 8	ø 10
d_k	[mm]	8.0	9.0	10.0	12.0	15.0	18.5
d_i	[mm]	2.50	2.70	3.25	3.95	5.30	6.20
$f_{ax,90,k}$	[N/mm²]	14.8	13.8	12.8	12.1	10.7	9.5
$f_{head,k}$	[N/mm²]	17.1	17.6	14.6	14.6	12.4	12.2
$F_{tens,k}$	[kN]	5.0	5.8	8.5	12.4	22.0	32.0
$M_{y,k}$	[Nmm]	3 200	4 900	6 500	10 100	21 000	33 000

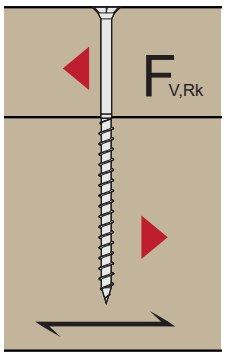


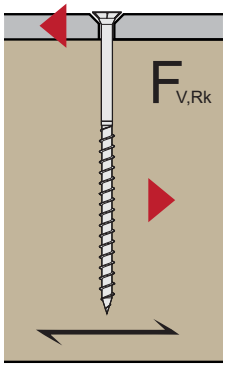
				AXIAL				SHEAR				
				HEAD PULL THROUGH		WITHDRAWAL		TIMBER-TIMBER		METAL-TIMBER		
	ø	L/b	$t_{1,min}$	$F_{head,Rk}$	$F_{head,ASD}$	$F_{ax,Rk}$	$F_{ax,ASD}$	$F_{v,Rk}$	$F_{v,ASD}$	$F_{V,Rk,thin}$	$F_{V,Rk,thick}$	$F_{v,ASD}$
	[mm]	[mm]	[mm]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]
ø 4.0	4.0	**30**/24	-	1.09	0.32	1.42	0.48	-	-	0.79	1.34	0.28
	4.0	**35**/24	-	1.09	0.32	1.42	0.48	-	-	0.94	1.47	0.33
	4.0	**40**/30	-	1.09	0.32	1.78	0.60	-	-	1.09	1.58	0.34
	4.0	**50**/30	-	1.09	0.32	1.78	0.60	-	-	1.24	1.58	0.34
	4.0	**60**/35	25	1.09	0.32	2.07	0.70	1.06	0.27	1.32	1.65	0.34
	4.0	**70**/35	25	1.09	0.32	2.07	0.70	1.06	0.27	1.32	1.65	0.34
ø 4.5	4.5	**40**/24	-	1.43	0.41	1.49	0.54	-	-	1.17	1.77	0.42
	4.5	**45**/24	-	1.43	0.41	1.49	0.54	-	-	1.33	1.83	0.43
	4.5	**50**/29	-	1.43	0.41	1.80	0.65	-	-	1.48	1.91	0.43
	4.5	**60**/29	30	1.43	0.41	1.80	0.65	1.38	0.28	1.48	1.91	0.43
	4.5	**70**/39	30	1.43	0.41	2.42	0.88	1.38	0.34	1.64	2.07	0.43
	4.5	**80**/39	30	1.43	0.41	2.42	0.88	1.38	0.34	1.64	2.07	0.43
ø 5.0	5.0	**50**/30	-	1.46	0.50	1.92	0.75	-	-	1.59	2.22	0.53
	5.0	**60**/30	30	1.46	0.50	1.92	0.75	1.47	0.32	1.71	2.22	0.53
	5.0	**70**/37	30	1.46	0.50	2.37	0.93	1.51	0.39	1.83	2.34	0.53
	5.0	**80**/37	35	1.46	0.50	2.37	0.93	1.60	0.39	1.83	2.34	0.53
	5.0	**90**/55	35	1.46	0.50	3.52	1.38	1.60	0.43	2.11	2.62	0.53
	5.0	**100**/55	35	1.46	0.50	3.52	1.38	1.60	0.43	2.11	2.62	0.53
	5.0	**110**/55	35	1.46	0.50	3.52	1.38	1.60	0.43	2.11	2.62	0.53
	5.0	**120**/55	35	1.46	0.50	3.52	1.38	1.60	0.43	2.11	2.62	0.53
ø 6.0	6.0	**60**/36	24	2.10	0.72	2.92	1.08	1.77	0.43	2.17	3.05	0.77
	6.0	**70**/36	30	2.10	0.72	2.92	1.08	1.91	0.46	2.37	3.05	0.77
	6.0	**80**/48	30	2.10	0.72	3.89	1.44	1.91	0.61	2.61	3.29	0.77
	6.0	**90**/48	40	2.10	0.72	3.89	1.44	2.16	0.61	2.61	3.29	0.77
	6.0	**100**/48	40	2.10	0.72	3.89	1.44	2.16	0.61	2.61	3.29	0.77
	6.0	**110**/64	40	2.10	0.72	5.18	1.92	2.16	0.61	2.94	3.61	0.77
	6.0	**120**/64	40	2.10	0.72	5.18	1.92	2.16	0.61	2.94	3.61	0.77
	6.0	**130**/64	40	2.10	0.72	5.18	1.92	2.16	0.61	2.94	3.61	0.77
	6.0	**140**/64	40	2.10	0.72	5.18	1.92	2.16	0.61	2.94	3.61	0.77
	6.0	**150**/64	40	2.10	0.72	5.18	1.92	2.16	0.61	2.94	3.61	0.77
	6.0	**160**/64	40	2.10	0.72	5.18	1.92	2.16	0.61	2.94	3.61	0.77
	6.0	**180**/64	40	2.10	0.72	5.18	1.92	2.16	0.61	2.94	3.61	0.77
	6.0	**200**/64	40	2.10	0.72	5.18	1.92	2.16	0.61	2.94	3.61	0.77
	6.0	**220**/64	40	2.10	0.72	5.18	1.92	2.16	0.61	2.94	3.61	0.77
	6.0	**240**/64	40	2.10	0.72	5.18	1.92	2.16	0.61	2.94	3.61	0.77
	6.0	**260**/64	40	2.10	0.72	5.18	1.92	2.16	0.61	2.94	3.61	0.77







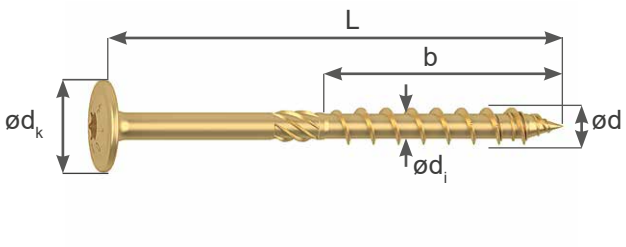




				AXIAL				SHEAR				
				HEAD PULL THROUGH		WITHDRAWAL		TIMBER-TIMBER		METAL-TIMBER		
	ø	L/b	$t_{1,min}$	$F_{head,Rk}$	$F_{head,ASD}$	$F_{ax,Rk}$	$F_{ax,ASD}$	$F_{v,Rk}$	$F_{v,ASD}$	$F_{V,Rk,thin}$	$F_{V,Rk,thick}$	$F_{v,ASD}$
	[mm]	[mm]	[mm]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]
ø 6.0	6.0	**280**/64	40	2.10	0.72	5.18	1.92	2.16	0.61	2.94	3.61	0.77
	6.0	**300**/64	40	2.10	0.72	5.18	1.92	2.16	0.61	2.94	3.61	0.77
ø 8.0	8.0	**80**/54	-	2.79	1.13	5.66	2.16	0.00	-	3.54	5.11	1.36
	8.0	**100**/54	45	2.79	1.13	5.66	2.16	3.10	0.92	4.03	5.11	1.36
	8.0	**120**/54	55	2.79	1.13	5.66	2.16	3.31	0.92	4.03	5.11	1.36
	8.0	**140**/84	55	2.79	1.13	8.80	3.36	3.31	1.09	4.82	5.90	1.36
	8.0	**160**/84	55	2.79	1.13	8.80	3.36	3.31	1.09	4.82	5.90	1.36
	8.0	**180**/100	55	2.79	1.13	10.48	4.00	3.31	1.09	5.23	6.32	1.36
	8.0	**200**/100	55	2.79	1.13	10.48	4.00	3.31	1.09	5.23	6.32	1.36
	8.0	**220**/100	55	2.79	1.13	10.48	4.00	3.31	1.09	5.23	6.32	1.36
	8.0	**240**/100	55	2.79	1.13	10.48	4.00	3.31	1.09	5.23	6.32	1.36
	8.0	**260**/100	55	2.79	1.13	10.48	4.00	3.31	1.09	5.23	6.32	1.36
	8.0	**280**/100	55	2.79	1.13	10.48	4.00	3.31	1.09	5.23	6.32	1.36
	8.0	**300**/100	55	2.79	1.13	10.48	4.00	3.31	1.09	5.23	6.32	1.36
	8.0	**320**/100	55	2.79	1.13	10.48	4.00	3.31	1.09	5.23	6.32	1.36
	8.0	**340**/100	55	2.79	1.13	10.48	4.00	3.31	1.09	5.23	6.32	1.36
	8.0	**360**/100	55	2.79	1.13	10.48	4.00	3.31	1.09	5.23	6.32	1.36
	8.0	**380**/100	55	2.79	1.13	10.48	4.00	3.31	1.09	5.23	6.32	1.36
	8.0	**400**/100	55	2.79	1.13	10.48	4.00	3.31	1.09	5.23	6.32	1.36
ø 10.0	10.0	**80**/60	-	4.18	1.71	6.75	2.70	-	-	4.03	6.51	1.86
	10.0	**100**/60	45	4.18	1.71	6.75	2.70	4.02	1.15	5.18	6.70	2.13
	10.0	**120**/60	55	4.18	1.71	6.75	2.70	4.41	1.15	5.23	6.70	2.13
	10.0	**140**/60	55	4.18	1.71	10.50	4.20	4.41	1.70	6.17	7.64	2.13
	10.0	**160**/100	60	4.18	1.71	10.50	4.20	4.59	1.70	6.17	7.64	2.13
	10.0	**180**/100	60	4.18	1.71	12.50	5.00	4.59	1.70	6.67	8.14	2.13
	10.0	**200**/100	60	4.18	1.71	12.50	5.00	4.59	1.70	6.67	8.14	2.13
	10.0	**220**/100	60	4.18	1.71	12.50	5.00	4.59	1.70	6.67	8.14	2.13
	10.0	**240**/100	60	4.18	1.71	12.50	5.00	4.59	1.70	6.67	8.14	2.13
	10.0	**260**/100	60	4.18	1.71	12.50	5.00	4.59	1.70	6.67	8.14	2.13
	10.0	**280**/100	60	4.18	1.71	12.50	5.00	4.59	1.70	6.67	8.14	2.13
	10.0	**300**/100	60	4.18	1.71	12.50	5.00	4.59	1.70	6.67	8.14	2.13
	10.0	**320**/100	60	4.18	1.71	12.50	5.00	4.59	1.70	6.67	8.14	2.13
	10.0	**340**/100	60	4.18	1.71	12.50	5.00	4.59	1.70	6.67	8.14	2.13
	10.0	**360**/100	60	4.18	1.71	12.50	5.00	4.59	1.70	6.67	8.14	2.13
	10.0	**380**/100	60	4.18	1.71	12.50	5.00	4.59	1.70	6.67	8.14	2.13
	10.0	**400**/100	60	4.18	1.71	12.50	5.00	4.59	1.70	6.67	8.14	2.13

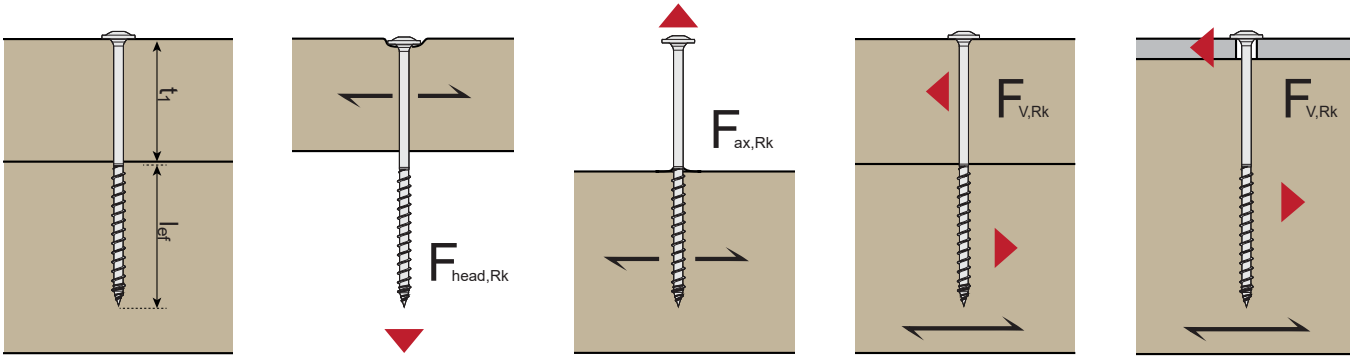
Stardrive GPR® partial thread washer head

Characteristics and values for C24				
d	**[mm]**	**ø 6**	**ø 8**	**ø 10**
d_k	[mm]	14.0	20.0	25.0
d_i	[mm]	3.95	5.30	6.20
$f_{ax,90,k}$	[N/mm²]	13.5	13.1	12.5
$f_{head,k}$	[N/mm²]	16.7	17.6	15.2
$F_{tens,k}$	[kN]	12.4	22.0	32.0
$M_{y,k}$	[Nmm]	10 100	21 000	33 000



				AXIAL				SHEAR				
				HEAD PULL THROUGH		WITHDRAWAL		TIMBER-TIMBER		METAL-TIMBER		
	ø	L/b	$t_{1,min}$	$F_{head,Rk}$	$F_{head,ASD}$	$F_{ax,Rk}$	$F_{ax,ASD}$	$F_{v,Rk}$	$F_{v,ASD}$	$F_{V,Rk,thin}$	$F_{V,Rk,thick}$	$F_{v,ASD}$
	[mm]	[mm]	[mm]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]
ø 6.0	6.0	**60**/36	24	3.27	0.98	2.92	1.08	1.97	0.43	2.17	3.05	0.77
	6.0	**80**/48	30	3.27	0.98	3.89	1.44	2.20	0.61	2.61	3.29	0.77
	6.0	**100**/48	40	3.27	0.98	3.89	1.44	2.46	0.61	2.61	3.29	0.77
	6.0	**120**/64	40	3.27	0.98	5.18	1.92	2.46	0.61	2.94	3.61	0.77
	6.0	**140**/64	40	3.27	0.98	5.18	1.92	2.46	0.61	2.94	3.61	0.77
	6.0	**160**/64	40	3.27	0.98	5.18	1.92	2.46	0.61	2.94	3.61	0.77
	6.0	**180**/64	40	3.27	0.98	5.18	1.92	2.46	0.61	2.94	3.61	0.77
	6.0	**200**/64	40	3.27	0.98	5.18	1.92	2.46	0.61	2.94	3.61	0.77
	6.0	**220***/64	40	3.27	0.98	5.18	1.92	2.46	0.61	2.94	3.61	0.77
	6.0	**240***/64	40	3.27	0.98	5.18	1.92	2.46	0.61	2.94	3.61	0.77
	6.0	**260***/64	40	3.27	0.98	5.18	1.92	2.46	0.61	2.94	3.61	0.77
	6.0	**280***/64	40	3.27	0.98	5.18	1.92	2.46	0.61	2.94	3.61	0.77
	6.0	**300***/64	40	3.27	0.98	5.18	1.92	2.46	0.61	2.94	3.61	0.77
ø 8.0	8.0	**80**/54	-	7.04	2.00	5.66	2.16	-	-	3.54	5.11	1.36
	8.0	**100**/54	45	7.04	2.00	5.66	2.16	3.82	0.92	4.03	5.11	1.36
	8.0	**120**/54	55	7.04	2.00	5.66	2.16	4.03	0.92	4.03	5.11	1.36
	8.0	**140**/84	55	7.04	2.00	8.80	3.36	4.37	1.09	4.82	5.90	1.36
	8.0	**160**/84	55	7.04	2.00	8.80	3.36	4.37	1.09	4.82	5.90	1.36
	8.0	**180**/100	55	7.04	2.00	10.48	4.00	4.37	1.09	5.23	6.32	1.36
	8.0	**200**/100	55	7.04	2.00	10.48	4.00	4.37	1.09	5.23	6.32	1.36
	8.0	**220**/100	55	7.04	2.00	10.48	4.00	4.37	1.09	5.23	6.32	1.36
	8.0	**240**/100	55	7.04	2.00	10.48	4.00	4.37	1.09	5.23	6.32	1.36
	8.0	**260**/100	55	7.04	2.00	10.48	4.00	4.37	1.09	5.23	6.32	1.36
	8.0	**280**/100	55	7.04	2.00	10.48	4.00	4.37	1.09	5.23	6.32	1.36
	8.0	**300**/100	55	7.04	2.00	10.48	4.00	4.37	1.09	5.23	6.32	1.36

*available by request



				AXIAL				SHEAR				
				HEAD PULL THROUGH		WITHDRAWAL		TIMBER-TIMBER		METAL-TIMBER		
	ø	L/b	$t_{1,min}$	$F_{head,Rk}$	$F_{head,ASD}$	$F_{ax,Rk}$	$F_{ax,ASD}$	$F_{v,Rk}$	$F_{v,ASD}$	$F_{V,Rk,thin}$	$F_{V,Rk,thick}$	$F_{v,ASD}$
	[mm]	[mm]	[mm]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]
ø 8.0	8.0	**320**/100	55	7.04	2.00	10.48	4.00	4.37	1.09	5.23	6.32	1.36
	8.0	**340**/100	55	7.04	2.00	10.48	4.00	4.37	1.09	5.23	6.32	1.36
	8.0	**360**/100	55	7.04	2.00	10.48	4.00	4.37	1.09	5.23	6.32	1.36
	8.0	**380**/100	55	7.04	2.00	10.48	4.00	4.37	1.09	5.23	6.32	1.36
	8.0	**400**/100	55	7.04	2.00	10.48	4.00	4.37	1.09	5.23	6.32	1.36
ø 10.0	10.0	**100**/60	40	9.50	3.13	7.50	3.00	4.68	1.20	5.18	6.89	2.13
	10.0	**120**/60	60	9.50	3.13	7.50	3.00	5.42	1.28	5.42	6.89	2.13
	10.0	**140**/60	60	9.50	3.13	7.50	3.00	5.42	1.28	5.42	6.89	2.13
	10.0	**160**/100	60	9.50	3.13	12.50	5.00	5.92	1.70	6.67	8.14	2.13
	10.0	**180**/100	60	9.50	3.13	12.50	5.00	5.92	1.70	6.67	8.14	2.13
	10.0	**200**/100	60	9.50	3.13	12.50	5.00	5.92	1.70	6.67	8.14	2.13
	10.0	**220**/100	60	9.50	3.13	12.50	5.00	5.92	1.70	6.67	8.14	2.13
	10.0	**240**/100	60	9.50	3.13	12.50	5.00	5.92	1.70	6.67	8.14	2.13
	10.0	**260**/100	60	9.50	3.13	12.50	5.00	5.92	1.70	6.67	8.14	2.13
	10.0	**280**/100	60	9.50	3.13	12.50	5.00	5.92	1.70	6.67	8.14	2.13
	10.0	**300**/100	60	9.50	3.13	12.50	5.00	5.92	1.70	6.67	8.14	2.13
	10.0	**320**/100	60	9.50	3.13	12.50	5.00	5.92	1.70	6.67	8.14	2.13
	10.0	**340**/100	60	9.50	3.13	12.50	5.00	5.92	1.70	6.67	8.14	2.13
	10.0	**360**/100	60	9.50	3.13	12.50	5.00	5.92	1.70	6.67	8.14	2.13
	10.0	**380**/100	60	9.50	3.13	12.50	5.00	5.92	1.70	6.67	8.14	2.13
	10.0	**400**/100	60	9.50	3.13	12.50	5.00	5.92	1.70	6.67	8.14	2.13

Values for C24 (ρ_k=350kg/m³), axial axis to grain: 30° - 90°, $F_{ax,Rk}$ = thread withdrawal, $F_{head,Rk}$ = head pull through, $F_{v,Rk}$ = shear (// to grain 0° – ⊥ to grain 90°), wood/steel plate: l_{ef} = thread length b, t_1 min= minimum wood thickness, t_1 max= maximum wood thickness add-on part (L-b), $F_{V,Rk,thin}$= steel sheet t ≤ d/2, $F_{V,RK,thick}$= steel sheet t ≥ d

Type and printing errors reserved. The values stated are meant to serve as planning guides; projects should only be undertaken by authorised professionals.

StarDrive GPR® Post screw

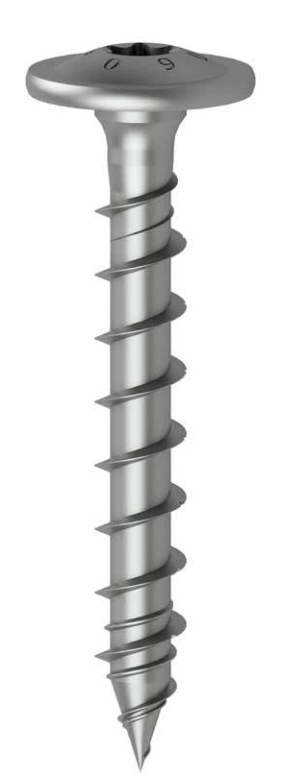
Highest quality - innovative technology

The StarDrive GPR® post screw is a full thread screw that expands our proven StarDrive GPR® assortment. The StarDrive GPR® post screw is specially designed for metal/wood connections. The special underhead guarantees a perfect fit in the metal. The zinc nickel 1000+ surface is the ideal complement to hot-dip galvanised metal parts and is also suitable for use in demanding conditions.

Washer head for higher pull-through values

> The washer head eliminates the need to use a separate washer

> Reduced assembly times - higher pull-through values



Centres automatically when turning

> Ensures a perfect fit in metal parts

Fast screwing processes

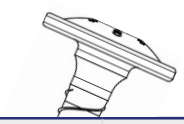
> Coarse thread including patented follower thread, rolled out to the tip

> Minimised splitting

> Lower screwing torque

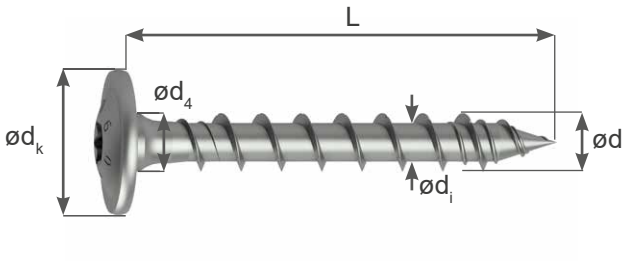
Patented follower thread tip – no pre-drilling necessary

> Ensures that screw bites quickly with low splitting

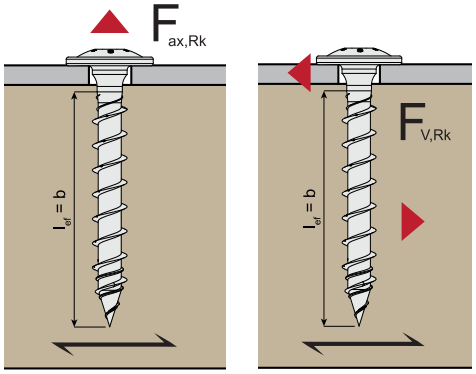
Post screw		
		
Ø 8.0	Drive	T 40
	Length	40–60 mm
	Thread	Coarse thread
	Underhead	Underhead shoulder
	Surface	zinc nickel 1000+

*Special lengths available upon request

Characteristics and values for C24		
d	**[mm]**	**ø 8**
d_k	[mm]	20.0
d_i	[mm]	5.30
d_4	[mm]	7.8
$f_{ax,90,k}$	[N/mm²]	13.1
$f_{head,k}$	[N/mm²]	17.6
$F_{tens,k}$	[kN]	22.0
$M_{y,k}$	[Nmm]	21 000



Values for C24 (ρ_k=350kg/m³), axial axis to grain: 30° - 90°,
F_{ax} = thread withdrawal force,
F_v = shear force (// to grain 0° – ⊥ to grain 90°),
$F_{V,Rk,thin}$ = steel plate t ≤ d/2,
$F_{V,RK,thick}$ = steel plate t ≥ d



			AXIAL WITHDRAWAL		SHEAR		
			METAL - TIMBER				
	ø	**L/b**	$F_{ax,Rk}$	$F_{ax,ASD}$	$F_{V,Rk,thin}$	$F_{V,Rk,thick}$	$F_{v,ASD}$
	[mm]	[mm]	[kN]	[kN]	[kN]	[kN]	[kN]
ø 8.0	8.0	**40**/32	3,35	1.28	1,57	3,33	0,68
	8.0	**50**/42	4,40	1.68	2,07	3,92	0,89
	8.0	**60**/52	5,45	2.08	2,56	4,57	1,11

Type and printing errors reserved. The values stated are meant to serve as planning guides; projects should only be undertaken by authorised professionals.

RAPID® full thread

The best technical values - extremely reliable

Head types

Cylinder head

> Reduced splitting so that wood surface does not splinter

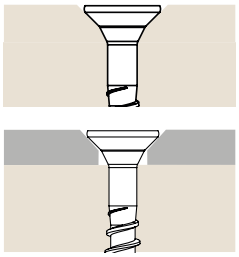
> Head is able to countersink deep into wood with a long bit

> Improved force transfer thanks to deeper drive

90° countersunk head

> Ideal for metal/wood connections

> Fits perfectly into metal parts



Thread geometry

> Constantly low torque due to anti-friction coating

> Excellent thread pull-out values

> Excellent pressure values

> Maximum load-bearing capacity

By request, also available in:

> Stainless steel A2 and A4 (approved for Φ 8.0 to 300 mm length and Φ 10.0 to 510 mm length),

> alternative surfaces such as: zinc nickel

YellWin 500+ Stainless steel Zinc nickel 1000+

Patented tip - no pre-drilling necessary

> Self-drilling tip with ridged core

> Minimised splitting

> 50 percent lower screw-in torque

Half tip (HSP)

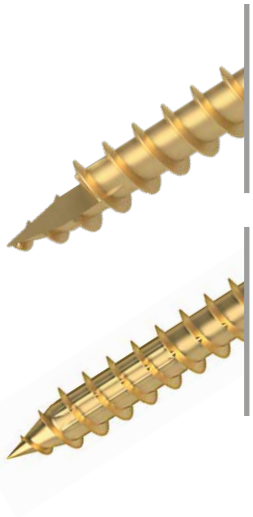
> Bites rapidly even with oblique and cross grained wood screw connections

> Especially with long screws

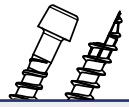
> Can be placed closer to the edge

Full tip with ridged core

> Minimised splitting and bites into wood quickly

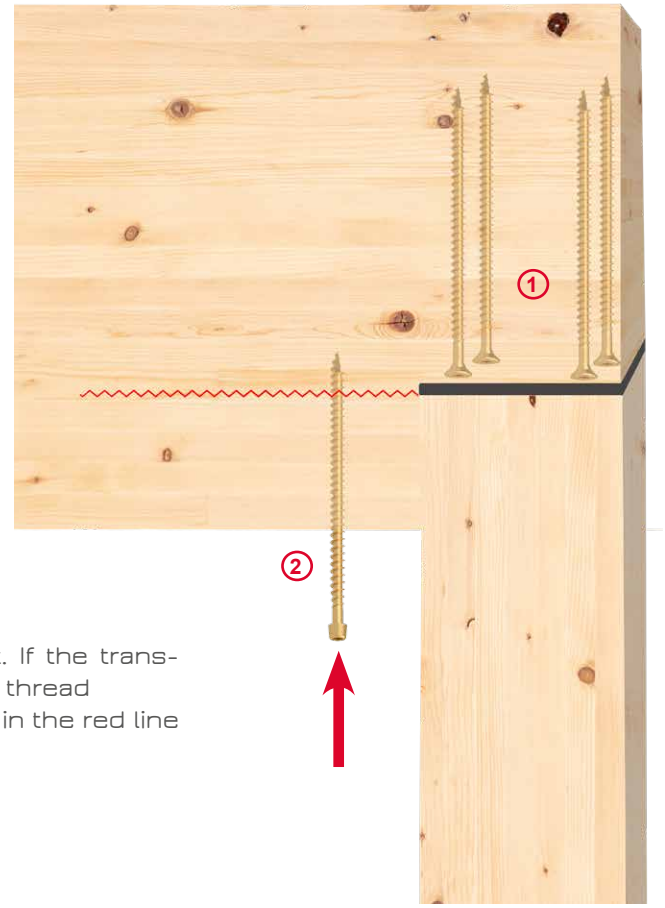


Dimensions

		Countersunk head	Cylinder head	HSP cylinder head
				
Ø 8.0	Drive	T 40	T 40	T 40
	Length	120–600 mm	120–400 mm	450–600 mm
	Thread	Single thread	Single thread	Single thread
	Tip	Half tip	Full tip	Half tip
Ø 10.0	Drive	T 50	–	T 50
	Length	120–1000 mm	–	200–1000 mm
	Thread	Single thread	–	Single thread
	Tip	Half tip	–	Half tip
Ø 12.0	Drive	T 50	–	–
	Length	200–1000 mm	–	–
	Thread	Single thread	–	–
	Tip	Half tip	–	–
	Surface	YellWin 500+		

Note: Guide bores of 5 d recommended for L > 800 mm

Applications



SUPPORT REINFORCEMENT WITH STEEL PLATE AND FULL THREAD SCREWS (1)

RAPID® full thread screws transfer the support load from the timber section directly to the steel plate through the screw heads. They distribute the force evenly into the end grain of the support.

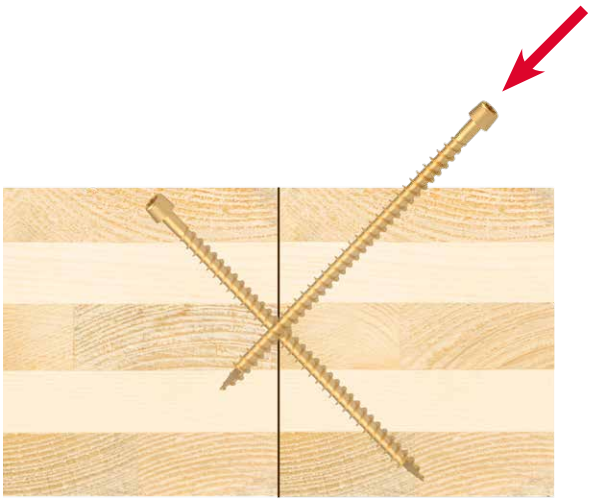
TRANSVERSE TENSILE REINFORCEMENT FOR NOTCHING (2)

The structural engineer must review the requirement. If the transverse tensile load is too high for the timber section, full thread screws will be used to reinforce and secure the beam in the red line area.

CONNECTIONS AT THE BASE POINT OF THE SUPPORT

RAPID® full thread screws with a countersunk head are best suited for this application. Shear forces and wind suction are effectively transferred. The RAPID® offers a high degree of security with 500 hours of corrosion resistance.

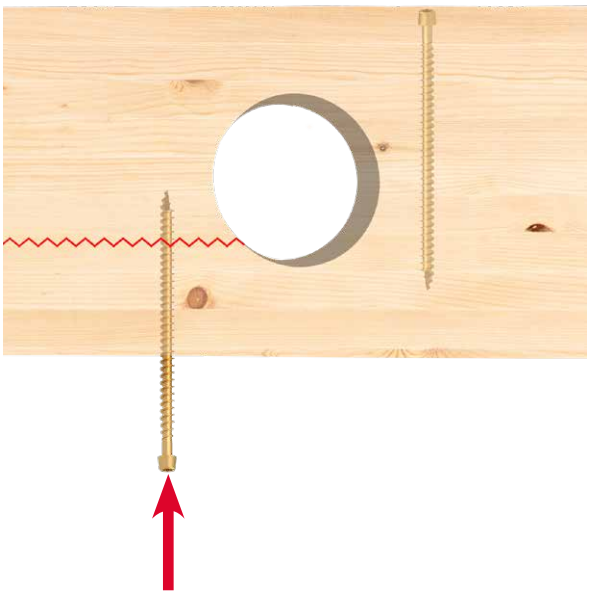
Info: In areas exposed to weather (use class 3), stainless steel screws should be used in accordance with the timber structure design code. The executive person should perform a final assessment of the necessary corrosion protection.



CROSS LAMINATED TIMBER (CEILING RIB)

Shear-resistant crosswise screwing for cross laminated timber ceilings.

TIP: the connection should first be pulled tightly together using e.g., partial thread screws.
The pitch of the screws should be oriented in the direction of the main load.



REINFORCEMENT OF OPENINGS WITH LONG FULL THREAD SCREWS

The area marked in red indicates the risk of cracking. The same thread length is required above and below this marking.
Long full thread screws with cylinder heads are recommended. They can be positioned exactly using long bits.

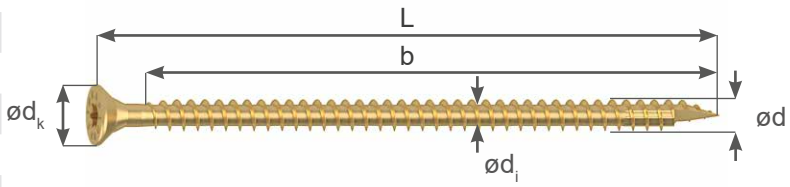
RAPID® full thread countersunk head

Values apply to the RAPID® full thread countersunk head with and without half tip

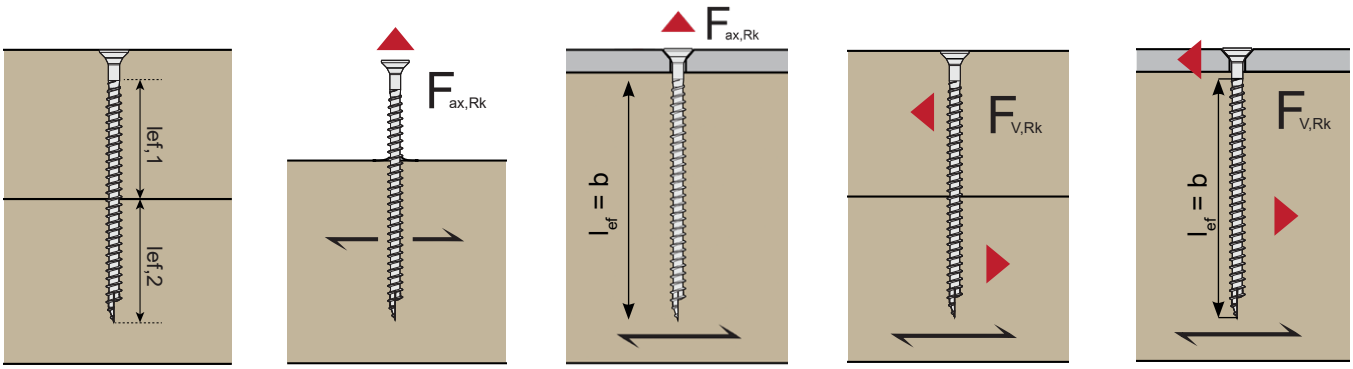
Characteristics and values for C24

d	[mm]	ø 8	ø 10	ø 12
d_k	[mm]	15.0	18.5	21.0
d_i	[mm]	5.10	6.30	7.00
$f_{ax,90,k}$	[N/mm²]	13.1	12.5	11.2
$f_{head,k}$	[N/mm²]	12.4	12.2	10.3
$F_{tens,k}$	[kN]	24.1	40.0	46.7
$M_{y,k}$	[Nmm]	20 300	36 700	48 500
$N_{pl,k \cdot kc}$(*)	[kN]	12.2	18.9	23.6

(*) total screw length in timber



			AXIAL 90°				SHEAR 90°				
			TIMBER - TIMBER		METAL - TIMBER		TIMBER - TIMBER		METAL - TIMBER		
			l_{ef} = b/2		l_{ef} = b		l_{ef} = b/2		l_{ef} = b		
	ø	L/b	$F_{ax,Rk}$	$F_{ax,ASD}$	$F_{ax,Rk}$	$F_{ax,ASD}$	$F_{V,Rk}$	$F_{v,ASD}$	$F_{V,Rk,thin}$	$F_{V,Rk,thick}$	$F_{v,ASD}$
	[mm]	[mm]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]
ø 8.0	8.0	**120**/110	5.76	2.20	11.53	4.40	4.01	0.94	5.14	6.52	1.36
	8.0	**140**/130	6.81	2.60	13.62	5.20	4.27	1.09	5.14	7.04	1.36
	8.0	**160**/150	7.86	3.00	15.72	6.00	4.54	1.09	5.14	7.27	1.36
	8.0	**180**/170	8.91	3.40	17.82	6.80	4.80	1.09	5.14	7.27	1.36
	8.0	**200**/190	9.96	3.80	19.91	7.60	5.06	1.09	5.14	7.27	1.36
	8.0	**220**/210	11.00	4.20	22.01	8.40	5.14	1.09	5.14	7.27	1.36
	8.0	**240**/230	12.05	4.60	24.10	9.20	5.14	1.09	5.14	7.27	1.36
	8.0	**260**/250	13.10	5.00	24.10	10.00	5.14	1.09	5.14	7.27	1.36
	8.0	**280**/270	14.15	5.40	24.10	10.00	5.14	1.09	5.14	7.27	1.36
	8.0	**300**/290	15.20	5.80	24.10	10.00	5.14	1.09	5.14	7.27	1.36
	8.0	**325**/315	16.51	6.30	24.10	10.00	5.14	1.09	5.14	7.27	1.36
	8.0	**350**/340	17.82	6.80	24.10	10.00	5.14	1.09	5.14	7.27	1.36
	8.0	**375**/365	19.13	7.30	24.10	10.00	5.14	1.09	5.14	7.27	1.36
	8.0	**400**/390	20.44	7.80	24.10	10.00	5.14	1.09	5.14	7.27	1.36
	8.0	**450**/428	22.37	8.54	24.10	10.00	5.14	1.09	5.14	7.27	1.36
	8.0	**500**/478	24.10	9.54	24.10	10.00	5.14	1.09	5.14	7.27	1.36
	8.0	**600**/578	24.10	10.00	24.10	10.00	5.14	1.09	5.14	7.27	1.36
ø 10.0	10.0	**120**/108	6.75	2.70	13.50	5.40	5.08	1.15	6.33	8.66	2.13
	10.0	**160**/148	9.25	3.70	18.50	7.40	6.05	1.57	7.47	9.91	2.13
	10.0	**180**/168	10.50	4.20	21.00	8.40	6.36	1.70	7.47	10.53	2.13
	10.0	**200**/188	11.75	4.70	23.50	9.40	6.67	1.70	7.47	10.57	2.13
	10.0	**220**/208	13.00	5.20	26.00	10.40	6.99	1.70	7.47	10.57	2.13
	10.0	**240**/228	14.25	5.70	28.50	11.40	7.30	1.70	7.47	10.57	2.13
	10.0	**260**/248	15.50	6.20	31.00	12.40	7.47	1.70	7.47	10.57	2.13
	10.0	**280**/268	16.75	6.70	33.50	13.40	7.47	1.70	7.47	10.57	2.13



			AXIAL 90°				SHEAR 90°				
			TIMBER - TIMBER		METAL - TIMBER		TIMBER - TIMBER		METAL - TIMBER		
			l_{ef} = b/2		l_{ef} = b		l_{ef} = b/2		l_{ef} = b		
	ø	L/b	$F_{ax,Rk}$	$F_{ax,ASD}$	$F_{ax,Rk}$	$F_{ax,ASD}$	$F_{V,Rk}$	$F_{v,ASD}$	$F_{V,Rk,thin}$	$F_{V,Rk,thick}$	$F_{v,ASD}$
	[mm]	[mm]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]
ø 10.0	10.0	**300**/288	18.00	7.20	36.00	14.00	7.47	1.70	7.47	10.57	2.13
	10.0	**325**/301	18.81	7.53	37.63	14.00	7.47	1.70	7.47	10.57	2.13
	10.0	**350**/326	20.38	8.15	40.00	14.00	7.47	1.70	7.47	10.57	2.13
	10.0	**375**/351	21.94	8.78	40.00	14.00	7.47	1.70	7.47	10.57	2.13
	10.0	**400**/376	23.50	9.40	40.00	14.00	7.47	1.70	7.47	10.57	2.13
	10.0	**450**/426	26.63	10.65	40.00	14.00	7.47	1.70	7.47	10.57	2.13
	10.0	**500**/476	29.75	11.90	40.00	14.00	7.47	1.70	7.47	10.57	2.13
	10.0	**600**/576	36.00	14.00	40.00	14.00	7.47	1.70	7.47	10.57	2.13
	10.0	**700**/676	40.00	14.00	40.00	14.00	7.47	1.70	7.47	10.57	2.13
	10.0	**800**/776	40.00	14.00	40.00	14.00	7.47	1.70	7.47	10.57	2.13
	10.0	**1000**/976	40.00	14.00	40.00	14.00	7.47	1.70	7.47	10.57	2.13
ø 12.0	12.0	**200**/180	12.10	5.40	24.19	10.80	7.60	2.30	9.16	12.52	3.06
	12.0	**220**/200	13.44	6.00	26.88	12.00	7.94	2.45	9.16	12.95	3.06
	12.0	**240**/220	14.78	6.60	29.57	13.20	8.27	2.45	9.16	12.95	3.06
	12.0	**260**/240	16.13	7.20	32.26	14.40	8.61	2.45	9.16	12.95	3.06
	12.0	**280**/260	17.47	7.80	34.94	15.60	8.95	2.45	9.16	12.95	3.06
	12.0	**300**/280	18.82	8.40	37.63	16.80	9.16	2.45	9.16	12.95	3.06
	12.0	**350**/330	22.18	9.90	44.35	18.00	9.16	2.45	9.16	12.95	3.06
	12.0	**400**/380	25.54	11.40	46.70	18.00	9.16	2.45	9.16	12.95	3.06
	12.0	**500**/480	32.26	14.40	46.70	18.00	9.16	2.45	9.16	12.95	3.06
	12.0	**600**/580	38.98	17.40	46.70	18.00	9.16	2.45	9.16	12.95	3.06
	12.0	**700**/680	45.70	18.00	46.70	18.00	9.16	2.45	9.16	12.95	3.06
	12.0	**800**/780	46.70	18.00	46.70	18.00	9.16	2.45	9.16	12.95	3.06
	12.0	**1000**/980	46.70	18.00	46.70	18.00	9.16	2.45	9.16	12.95	3.06

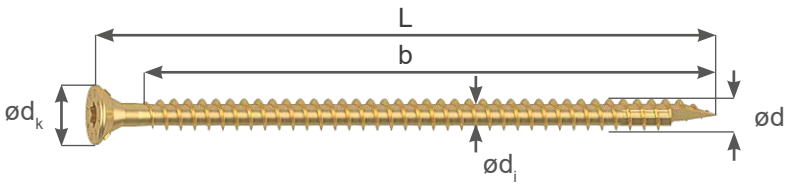
RAPID® full thread countersunk head

Values apply to the RAPID® full thread countersunk head with and without half tip

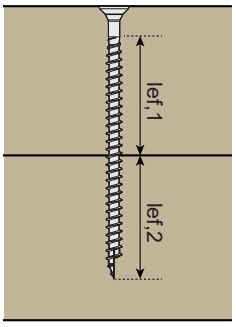
Characteristics and values for C24

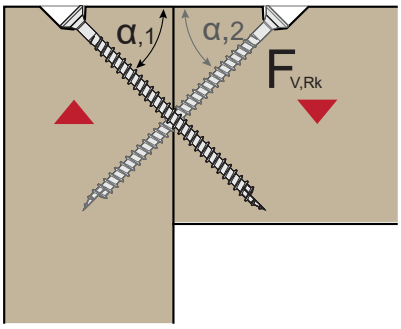
d	[mm]	ø 8	ø 10	ø 12
d_k	[mm]	15.0	18.5	21.0
d_i	[mm]	5.10	6.30	7.00
$f_{ax,90,k}$	[N/mm²]	13.1	12.5	11.2
$f_{head,k}$	[N/mm²]	12.4	12.2	10.3
$F_{tens,k}$	[kN]	24.1	40.0	46.7
$M_{y,k}$	[Nmm]	20 300	36 700	48 500
$N_{pl,k \cdot kc}$(*)	[kN]	12.2	18.9	23.6

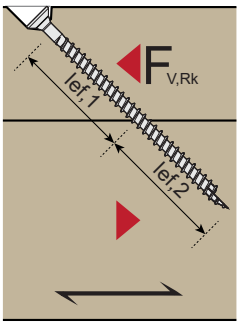
(*) total screw length in timber

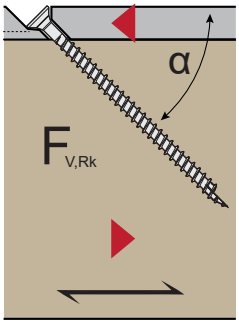


			AXIAL 45°			SHEAR 45°			
			CROSS-TYPE SCREW FITTING			TIMBER - TIMBER		METAL - TIMBER	
			l_{ef} = b/2			l_{ef} = b/2		l_{ef} = b	
	ø	L/b	$F_{v,X1,Rk}$	$F_{v,X2,Rk}$	$F_{v,X3,Rk}$	$F_{v,Rk}$	$F_{v,ASD}$	$F_{V,Rk}$	$F_{v,ASD}$
	[mm]	[mm]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]
ø 8.0	8.0	**120**/110	8.15	14.67	22.01	5.09	1.94	10.19	3.89
	8.0	**140**/130	9.63	17.34	26.01	6.02	2.30	12.04	4.60
	8.0	**160**/150	11.12	20.01	30.01	6.95	2.65	13.89	5.30
	8.0	**180**/170	12.60	22.68	34.01	7.87	3.01	15.75	6.01
	8.0	**200**/190	14.08	25.34	38.02	8.80	3.36	17.60	6.72
	8.0	**220**/210	15.56	28.01	42.02	9.73	3.71	19.45	7.42
	8.0	**240**/230	16.58	29.84	44.76	10.65	4.07	21.30	8.13
	8.0	**260**/250	17.32	31.17	46.76	11.58	4.42	21.30	8.84
	8.0	**280**/270	18.06	32.51	48.76	12.51	4.77	21.30	8.84
	8.0	**300**/290	18.80	33.84	50.76	13.43	5.13	21.30	8.84
	8.0	**325**/315	19.73	35.51	53.26	14.59	5.57	21.30	8.84
	8.0	**350**/340	20.65	37.18	55.76	15.75	6.01	21.30	8.84
	8.0	**375**/365	21.58	38.84	58.26	16.91	6.45	21.30	8.84
	8.0	**400**/390	22.51	40.51	60.77	18.06	6.89	21.30	8.84
	8.0	**450**/428	23.88	42.98	64.47	19.78	7.55	21.30	8.84
	8.0	**500**/478	25.10	45.17	67.76	21.30	8.43	21.30	8.84
	8.0	**600**/578	25.10	45.17	67.76	21.30	8.84	21.30	8.84
ø 10.0	10.0	**120**/108	9.55	17.18	25.77	5.97	2.39	11.93	4.77
	10.0	**160**/148	13.08	23.55	35.32	8.18	3.27	16.35	6.54
	10.0	**180**/168	14.85	26.73	40.09	9.28	3.71	18.56	7.42
	10.0	**200**/188	16.62	29.91	44.87	10.39	4.15	20.77	8.31
	10.0	**220**/208	18.38	33.09	49.64	11.49	4.60	22.98	9.19
	10.0	**240**/228	20.15	36.27	54.41	12.60	5.04	25.19	10.08
	10.0	**260**/248	21.92	39.46	59.18	13.70	5.48	27.40	10.96
	10.0	**280**/268	23.69	42.64	63.96	14.81	5.92	29.61	11.84









			AXIAL45°			SHEAR 45°			
			CROSS-TYPE SCREW FITTING			TIMBER - TIMBER		METAL - TIMBER	
			l_{ef} = b/2			l_{ef} = b/2		l_{ef} = b	
	ø	L/b	$F_{v,X1,Rk}$	$F_{v,X2,Rk}$	$F_{v,X3,Rk}$	$F_{v,Rk}$	$F_{v,ASD}$	$F_{V,Rk}$	$F_{v,ASD}$
	[mm]	[mm]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]
ø 10.0	10.0	**300**/288	25.26	45.46	68.19	15.91	6.36	31.82	12.37
	10.0	**325**/301	25.83	46.49	69.74	16.63	6.65	33.26	12.37
	10.0	**350**/326	26.93	48.48	72.72	18.01	7.20	35.36	12.37
	10.0	**375**/351	28.04	50.47	75.71	19.39	7.76	35.36	12.37
	10.0	**400**/376	29.14	52.46	78.69	20.77	8.31	35.36	12.37
	10.0	**450**/426	31.35	56.44	84.66	23.53	9.41	35.36	12.37
	10.0	**500**/476	33.56	60.41	90.62	26.30	10.52	35.36	12.37
	10.0	**600**/576	37.98	68.37	102.55	31.82	12.37	35.36	12.37
	10.0	**700**/676	40.81	73.46	110.19	35.36	12.37	35.36	12.37
	10.0	**800**/776	40.81	73.46	110.19	35.36	12.37	35.36	12.37
	10.0	**1000**/976	40.81	73.46	110.19	35.36	12.37	35.36	12.37
ø 12.0	12.0	**200**/180	17.11	30.79	46.19	10.69	4.77	21.38	9.55
	12.0	**220**/200	19.01	34.21	51.32	11.88	5.30	23.76	10.61
	12.0	**240**/220	20.91	37.63	56.45	13.07	5.83	26.13	11.67
	12.0	**260**/240	22.81	41.06	61.58	14.26	6.36	28.51	12.73
	12.0	**280**/260	24.71	44.48	66.71	15.44	6.89	30.89	13.79
	12.0	**300**/280	26.61	47.90	71.85	16.63	7.42	33.26	14.85
	12.0	**350**/330	31.36	56.45	84.68	19.60	8.75	39.20	15.91
	12.0	**400**/380	33.79	60.82	91.23	22.57	10.08	41.28	15.91
	12.0	**500**/480	38.54	69.37	104.06	28.51	12.73	41.28	15.91
	12.0	**600**/580	43.29	77.92	116.89	34.45	15.38	41.28	15.91
	12.0	**700**/680	48.04	86.48	129.72	40.39	15.91	41.28	15.91
	12.0	**800**/780	48.75	87.76	131.63	41.28	15.91	41.28	15.91
	12.0	**1000**/980	48.75	87.76	131.63	41.28	15.91	41.28	15.91

Values for C24 (ρ_k=350kg/m³), axial axis to grain: 30° - 90°, $F_{ax,Rk}$ = thread withdrawal, $F_{head,Rk}$ = head pull through, $F_{v,Rk}$ = shear (// to grain 0° – ⊥ to grain 90°), wood/steel plate: l_{ef} = thread length b, t_1 min= minimum wood thickness, t_1 max= maximum wood thickness add-on part (L-b), $F_{V,Rk,thin}$= steel sheet t ≤ d/2, $F_{V,RK,thick}$= steel sheet t ≥ d

Type and printing errors reserved. The values stated are meant to serve as planning guides; projects should only be undertaken by authorised professionals.

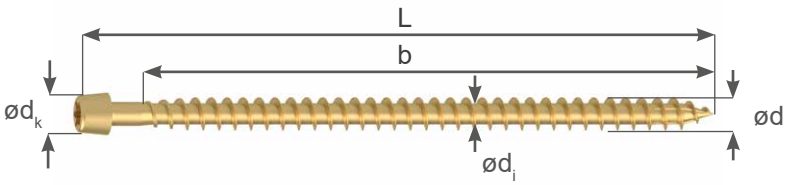
RAPID® full thread cylinder head

Values apply to the RAPID® FT CL with core fins tip and to the RAPID® FT CL with half tip. The RAPID® FT cylinder head is not suitable for timber/steel plate screw fittings; our range has the RAPID® FT countersunk head for this.

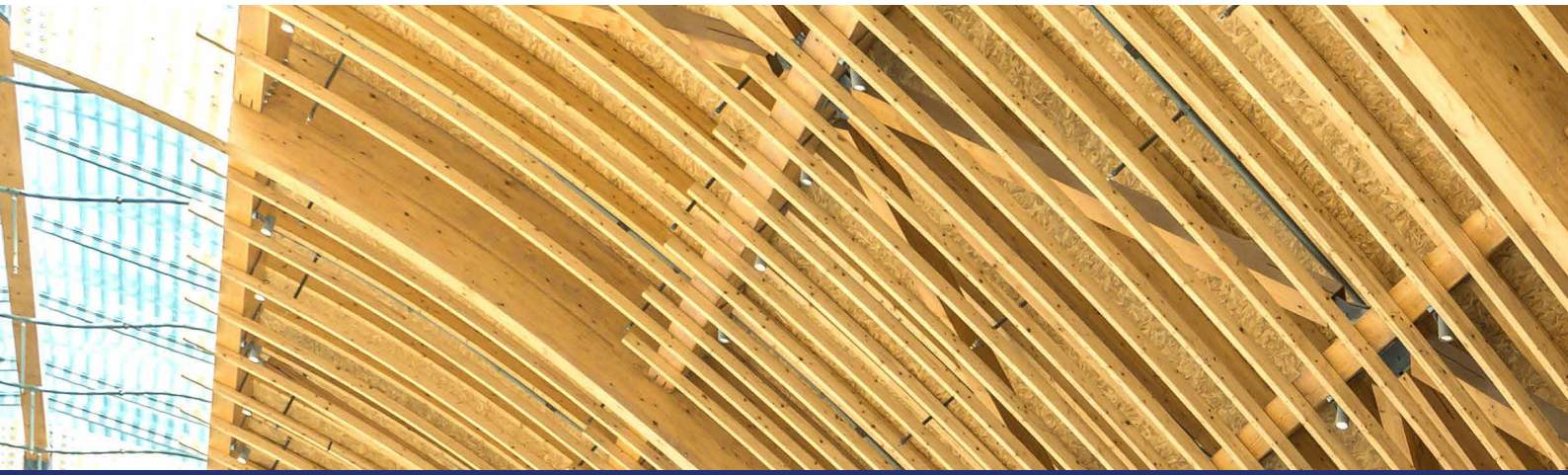
Characteristics and values for C24

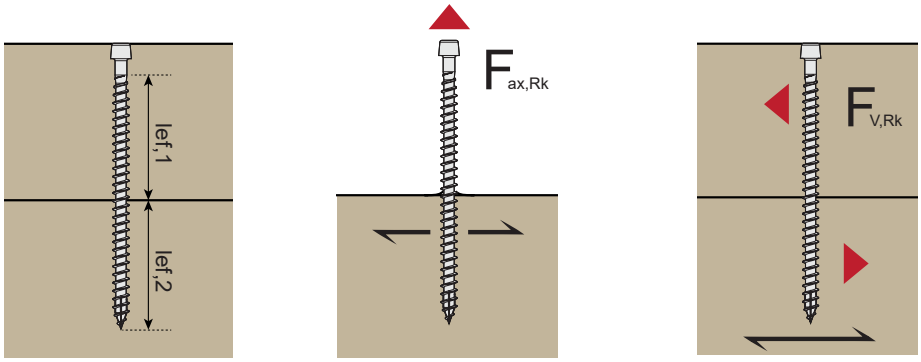
d	[mm]	ø 8	ø 10
d_k	[mm]	10.2	13.4
d_i	[mm]	5.10	6.30
$f_{ax,90,k}$	[N/mm²]	13.1	12.5
$f_{head,k}$	[N/mm²]	0	0
$F_{tens,k}$	[kN]	24.1	40.0
$M_{y,k}$	[Nmm]	20 300	36 700
$N_{pl,k \cdot kc}$(*)	[kN]	12.2	18.9

(*) total screw length in timber



			AXIAL 90°		SHEAR 90°	
			HEAD PULL THROUGH		TIMBER - TIMBER	
			l_{ef} = b/2		l_{ef} = b/2	
	ø	L/b	$F_{ax,Rk}$	$F_{ax,ASD}$	$F_{V,Rk}$	$F_{v,ASD}$
	[mm]	[mm]	[kN]	[kN]	[kN]	[kN]
ø 8.0	8.0	**120**/110	5.76	2.20	4.01	0.94
	8.0	**140**/130	6.81	2.60	4.27	1.09
	8.0	**160**/150	7.86	3.00	4.54	1.09
	8.0	**180**/170	8.91	3.40	4.80	1.09
	8.0	**200**/190	9.96	3.80	5.06	1.09
	8.0	**220**/210	11.00	4.20	5.14	1.09
	8.0	**240**/230	12.05	4.60	5.14	1.09
	8.0	**260**/250	13.10	5.00	5.14	1.09
	8.0	**280**/270	14.15	5.40	5.14	1.09
	8.0	**300**/290	15.20	5.80	5.14	1.09
	8.0	**325**/315	16.51	6.30	5.14	1.09
	8.0	**350**/340	17.82	6.80	5.14	1.09
	8.0	**375**/365	19.13	7.30	5.14	1.09
	8.0	**400**/390	20.44	7.80	5.14	1.09
	8.0	**450**/428	22.37	8.54	5.14	1.09
	8.0	**500**/478	24.10	9.54	5.14	1.09
	8.0	**600**/578	24.10	10.00	5.14	1.09





			AXIAL 90°		SHEAR 90°	
			HEAD PULL THROUGH		TIMBER - TIMBER	
			l_{ef} = b/2		l_{ef} = b/2	
	ø	L/b	$F_{ax,Rk}$	$F_{ax,ASD}$	$F_{V,Rk}$	$F_{v,ASD}$
	[mm]	[mm]	[kN]	[kN]	[kN]	[kN]
ø 10.0	10.0	**200**/188	11.75	4.70	6.67	1.70
	10.0	**240**/228	14.25	5.70	7.30	1.70
	10.0	**260**/248	15.50	6.20	7.47	1.70
	10.0	**280**/268	16.75	6.70	7.47	1.70
	10.0	**300**/288	18.00	7.20	7.47	1.70
	10.0	**325**/301	18.81	7.53	7.47	1.70
	10.0	**350**/326	20.38	8.15	7.47	1.70
	10.0	**375**/351	21.94	8.78	7.47	1.70
	10.0	**400**/376	23.50	9.40	7.47	1.70
	10.0	**450**/426	26.63	10.65	7.47	1.70
	10.0	**500**/476	29.75	11.90	7.47	1.70
	10.0	**600**/576	36.00	14.00	7.47	1.70
	10.0	**700**/676	40.00	14.00	7.47	1.70
	10.0	**800**/776	40.00	14.00	7.47	1.70
	10.0	**1000**/976	40.00	14.00	7.47	1.70

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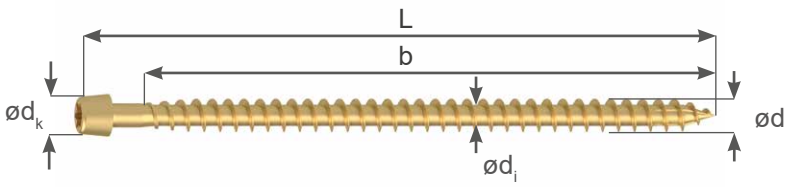
RAPID® full thread cylinder head

Values apply to the RAPID® FT CL with core fins tip and to the RAPID® FT CL with half tip. The RAPID® FT cylinder head is not suitable for timber/steel plate screw fittings; our range has the RAPID® FT countersunk head for this.

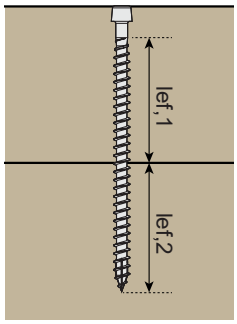
Characteristics and values for C24			
d	**[mm]**	**ø 8**	**ø 10**
d_k	[mm]	10.2	13.4
d_i	[mm]	5.10	6.30
$f_{ax,90,k}$	[N/mm²]	13.1	12.5
$f_{head,k}$	[N/mm²]	0	0
$F_{tens,k}$	[kN]	24.1	40.0
$M_{y,k}$	[Nmm]	20 300	36 700
$N_{pl,k \cdot kc}$(*)	[kN]	12.2	18.9

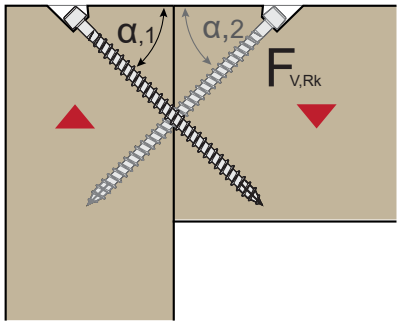
(*) total screw length in timber

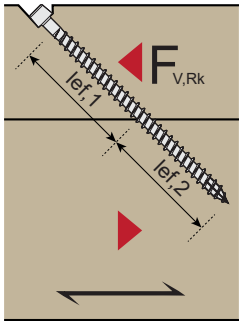


			AXIAL 45°			SHEAR 45°	
			CROSS-TYPE SCREW FITTING			TIMBER - TIMBER	
			l_{ef} = b/2			l_{ef} = b/2	
	ø	L/b	$F_{v,X1,Rk}$	$F_{v,X2,Rk}$	$F_{v,X3,Rk}$	$F_{v,Rk}$	$F_{v,ASD}$
	[mm]	[mm]	[kN]	[kN]	[kN]	[kN]	[kN]
ø 8.0	8.0	**120**/110	8.15	14.67	22.01	5.09	1.94
	8.0	**140**/130	9.63	17.34	26.01	6.02	2.30
	8.0	**160**/150	11.12	20.01	30.01	6.95	2.65
	8.0	**180**/170	12.60	22.68	34.01	7.87	3.01
	8.0	**200**/190	14.08	25.34	38.02	8.80	3.36
	8.0	**220**/210	15.56	28.01	42.02	9.73	3.71
	8.0	**240**/230	16.58	29.84	44.76	10.65	4.07
	8.0	**260**/250	17.32	31.17	46.76	11.58	4.42
	8.0	**280**/270	18.06	32.51	48.76	12.51	4.77
	8.0	**300**/290	18.80	33.84	50.76	13.43	5.13
	8.0	**325**/315	19.73	35.51	53.26	14.59	5.57
	8.0	**350**/340	20.65	37.18	55.76	15.75	6.01
	8.0	**375**/365	21.58	38.84	58.26	16.91	6.45
	8.0	**400**/390	22.51	40.51	60.77	18.06	6.89
	8.0	**450**/428	23.88	42.98	64.47	19.78	7.55
	8.0	**500**/478	25.10	45.17	67.76	21.30	8.43
	8.0	**600**/578	25.10	45.17	67.76	21.30	8.84

Values for C24 (ρ_k=350kg/m³),
Axial axis to grain: 30° - 90°,
$F_{ax,Rk}$ = thread withdrawal,
$F_{v,Rk}$ = shear (// to grain 0° – ⊥ to grain 90°),







			AXIAL 45°			SHEAR 45°	
			CROSS-TYPE SCREW FITTING			TIMBER - TIMBER	
			l_{ef} = b/2			l_{ef} = b/2	
	ø	L/b	$F_{v,X1,Rk}$	$F_{v,X2,Rk}$	$F_{v,X3,Rk}$	$F_{v,Rk}$	$F_{v,ASD}$
	[mm]	[mm]	[kN]	[kN]	[kN]	[kN]	[kN]
ø 10.0	10.0	**200**/188	16,62	29,91	44,87	10.39	4.15
	10.0	**240**/228	20,15	36,27	54,41	12.60	5.04
	10.0	**260**/248	21,92	39,46	59,18	13.70	5.48
	10.0	**280**/268	23,69	42,64	63,96	14.81	5.92
	10.0	**300**/288	25,26	45,46	68,19	15.91	6.36
	10.0	**325**/301	25,83	46,49	69,74	16.63	6.65
	10.0	**350**/326	26,93	48,48	72,72	18.01	7.20
	10.0	**375**/351	28,04	50,47	75,71	19.39	7.76
	10.0	**400**/376	29,14	52,46	78,69	20.77	8.31
	10.0	**450**/426	31,35	56,44	84,66	23.53	9.41
	10.0	**500**/476	33,56	60,41	90,62	26.30	10.52
	10.0	**600**/576	37,98	68,37	102,55	31.82	12.37
	10.0	**700**/676	40,81	73,46	110,19	35.36	12.37
	10.0	**800**/776	40,81	73,46	110,19	35.36	12.37
	10.0	**1000**/976	40,81	73,46	110,19	35.36	12.37

Type and printing errors reserved. The values stated are meant to serve as planning guides; projects should only be undertaken by authorised professionals.

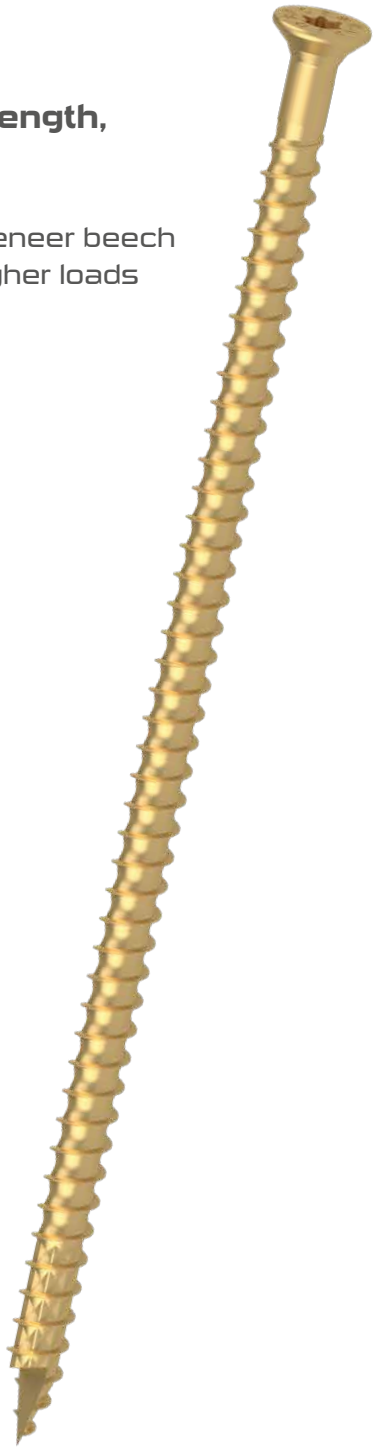
RAPID® full thread Plus*

Exceptional ultimate limit state!

30 %

Higher tensile and compressive strength, comparable to ϕ 13 mm screws

Perfect for support reinforcement
With small cross sections (e.g. laminated veneer beech lumber), lower screw distances allow for higher loads



90° countersunk head

> Ideal for metal/wood connections

> Fits perfectly into metal parts

Patented tip, no pre-drilling necessary

> Patented self-drilling tip with ridged core

> Minimised splitting

> 50 percent lower screw-in torque

> Bites rapidly even with oblique and cross grained wood screw connections

Low error rate due to half tip

> Especially with long screws

> Can be placed closer to the edge

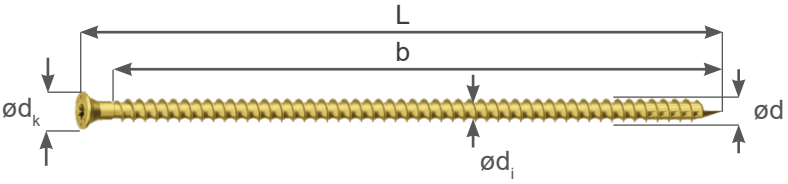
Full thread Plus*		
		
Ø 12.0	Drive	T 50
	Length	200–1000 mm
	Thread	Single thread
	Tip	Half tip
	Surface	YellWin 500+

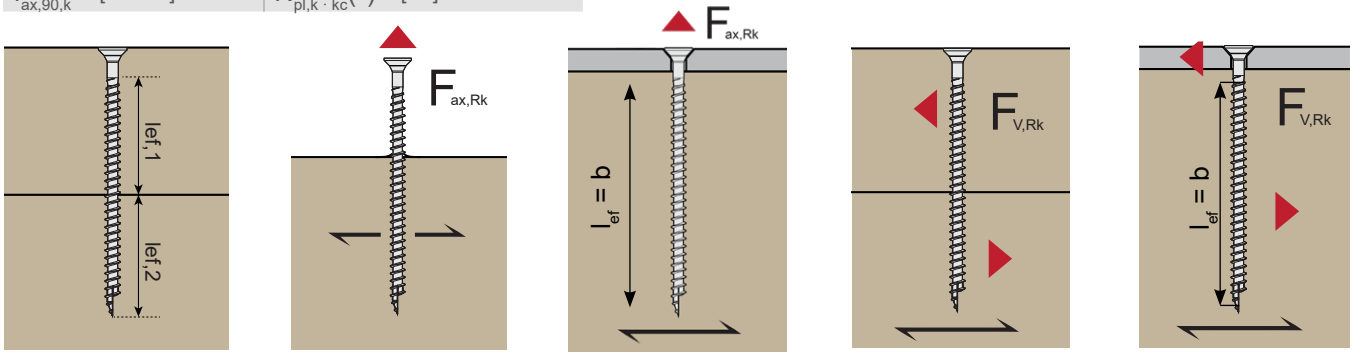
*RAPID® VG PLUS available on request

AUSTRIA ETA-12/0373 UKCA

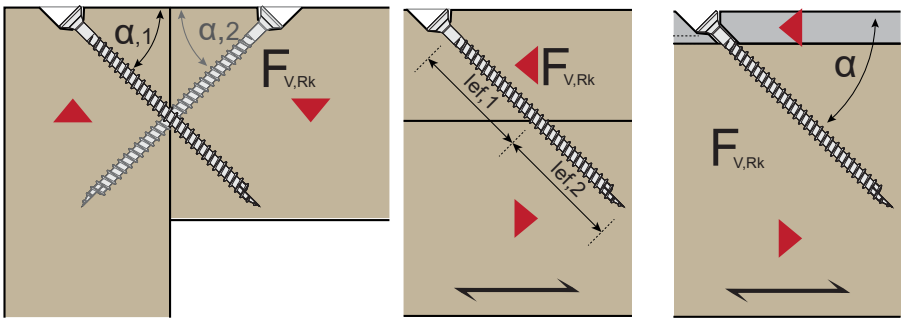
Characteristics and values for C24

d	**[mm]**	**ø 12**	$f_{head,k}$	[N/mm²]	10.3
d_k	[mm]	21.0	$F_{tens,k}$	[kN]	61.2
d_i	[mm]	8.20	$M_{y,k}$	[Nmm]	77 300
$f_{ax,90,k}$	[N/mm²]	11.8	$N_{pl,k \cdot kc}$(*)	[kN]	32.45





				AXIAL 90°				SHEAR 90°				
				TIMBER - TIMBER		METAL - TIMBER		TIMBER - TIMBER		METAL - TIMBER		
				l_{ef} = b/2		l_{ef} = b		l_{ef} = b/2		l_{ef} = b		
	ø	L/b	l_{ef}	$F_{ax,sg,Rk}$	$F_{ax,sg,zul}$	$F_{ax,Rk}$	$F_{ax,ASD}$	$F_{V,Rk}$	$F_{v,ASD}$	$F_{V,Rk,thin}$	$F_{V,Rk,thick}$	$F_{v,ASD}$
	[mm]	[mm]	[mm]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]
ø 12.0	12.0	**200**/180	90	12.74	5.40	25.49	10.80	8.97	2.30	11.56	14.55	3.06
	12.0	**400**/380	190	26.90	11.40	53.81	18.00	11.56	2.45	11.56	16.35	3.06
	12.0	**600**/580	290	41.06	17.40	61.20	18.00	11.56	2.45	11.56	16.35	3.06
	12.0	**700**/680	340	48.14	18.00	61.20	18.00	11.56	2.45	11.56	16.35	3.06
	12.0	**800**/780	390	55.22	18.00	61.20	18.00	11.56	2.45	11.56	16.35	3.06
	12.0	**1000**/980	490	61.20	18.00	61.20	18.00	11.56	2.45	11.56	16.35	3.06



Values for C24 (ρ_k=350kg/m³), axial axis to grain: 30° - 90°,
$F_{ax,Rk}$ = thread withdrawal,
$F_{head,Rk}$ = head pull through,
$F_{v,Rk}$ = shear (// to grain 0° – ⊥ to grain 90°),
Timber/steel plate: l_{ef} = thread length b, t_1 min = minimum wood thickness, t_1 max = maximum wood thickness of add-on part (L-b),
$F_{V,Rk,thin}$ = steel plate t ≤ d/2,
$F_{V,RK,thick}$ = steel plate t ≥ d
(*) total screw length in timber

				AXIAL 45°			SHEAR 45°			
				CROSS-TYPE SCREW FITTING			TIMBER - TIMBER		METAL - TIMBER	
				l_{ef} = b/2			l_{ef} = b/2		l_{ef} = b	
	ø	L/b	l_{ef}	$F_{v,X1,Rk}$	$F_{v,X2,Rk}$	$F_{v,X3,Rk}$	$F_{v,Rk}$	$F_{v,ASD}$	FV,Rk	$F_{v,ASD}$
	[mm]	[mm]	[mm]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]
ø 12.0	12.0	**200**/180	90	18.02	32.44	48.66	11.26	4.77	22.53	9.55
	12.0	**400**/380	190	38.05	68.49	102.73	23.78	10.08	47.56	15.91
	12.0	**600**/580	290	50.62	91.12	136.68	36.30	15.38	54.09	15.91
	12.0	**700**/680	340	55.63	100.13	150.20	42.55	15.91	54.09	15.91
	12.0	**800**/780	390	60.64	109.15	163.72	48.81	15.91	54.09	15.91
	12.0	**1000**/980	490	64.86	116.75	175.13	54.09	15.91	54.09	15.91

Type and printing errors reserved. The values stated are meant to serve as planning guides; projects should only be undertaken by authorised professionals.

RAPID® Hardwood

Approved for hardwood and BauBuche without pre-drilling

Characteristics

90° countersunk head

> Countersinks fully into the wood and fits well in steel bores

> Milling pockets reduce tearing and splitting in the wood

Washer head

> Highest permissible head pull-through values for sturdy joints pulled tightly together

> No washers required, which makes processing faster

Minimised effort

> The patented friction part greatly reduces screw-in resistance

> Less effort required to screw in

> Faster screwing processes

> Suitable for cordless screwdrivers

Low splitting, high pull-out values

> Also suitable for coniferous timber

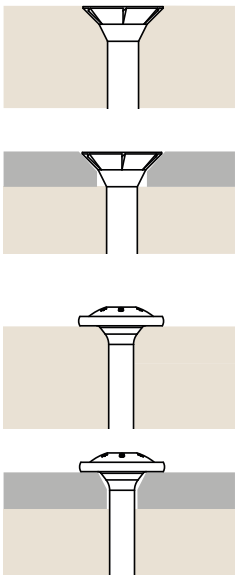
> 3-4 times higher values for hardwood, compared to coniferous timber

Patented tip – no pre-drilling necessary

> Bites rapidly even with oblique and cross grained wood screw connections

> Minimised splitting

> No pre-drilling in hardwoods and LVL beech (for lengths up to and including 400 mm; pre-drilling permitted for longer lengths)



Features

The Rapid® Hardwood is the first screw ETA-approved for all hard woods without pre-drilling, both for screwing in side and end timber (90° bis 0°) and for screw fittings in the narrow edge of laminated veneer beech lumber.
The unique RAPID® Hardwood makes full loads possible regardless of whether the timber was pre-drilled. However, if you pre-drill with ø max. 6.5 mm screws, the RAPID® Hardwood's screw-in torque will be reduced by 2/3 and the screw distances will be much smaller.

> Saves time by eliminating pre-drilling

> ETA approval

> Tensile capacity comparable to a conventional 10 mm wood construction screw

Dimensions & surfaces

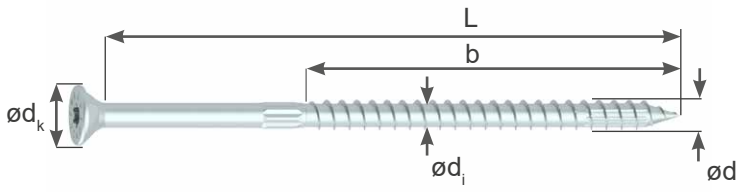
		Countersunk head*	Washer head*
			
Ø 8,0	Drive	T 40	T 40
	Length	80–440 mm	160 mm
	Thread	Single thread	Single thread
	Underhead	Milling pockets	Cone
	Surface	BlueWin 700+	

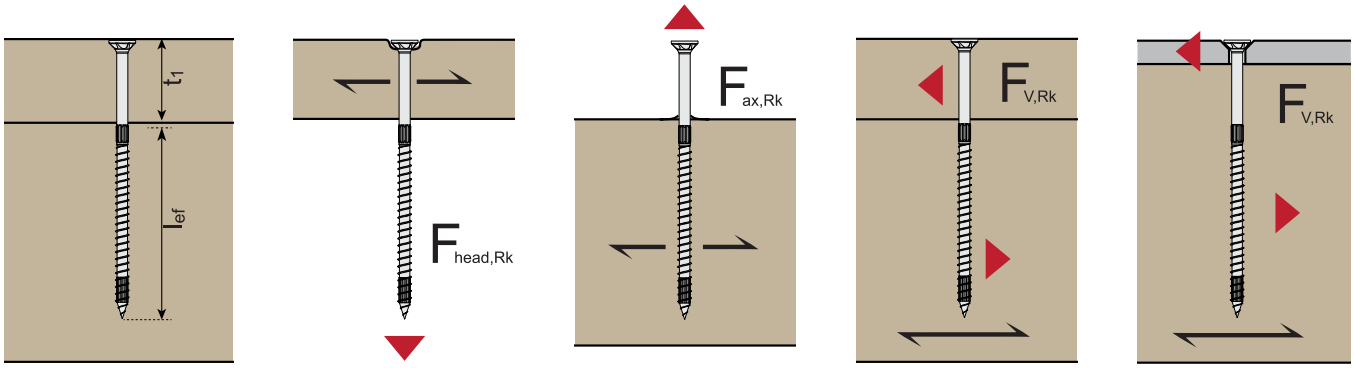
*Special lengths and other surfaces available by request

RAPID® Hardwood
partial thread countersunk head

Characteristics and values

		LVL beech	C 24
d	**[mm]**	**ø 8**	**ø 8**
d_k	[mm]	15.0	15.0
d_i	[mm]	6.10	6.10
$f_{ax,90,k}$	[N/mm²]	49.2	13.1
$f_{head,k}$	[N/mm²]	46	12.4
$F_{tens,k}$	[kN]	32.8	32.8
$M_{y,k}$	[Nmm]	42 800	42 800





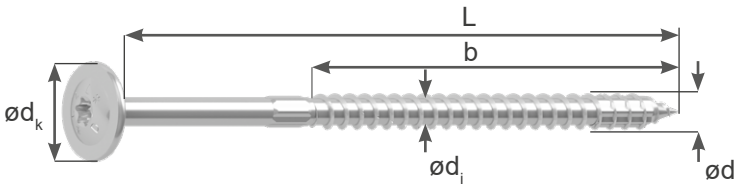
				AXIAL				SHEAR				
				HEAD PULL THROUGH		WITHDRAWAL		TIMBER-TIMBER		METAL-TIMBER		
	ø	L/b	$t_{1,min}$	$F_{head,Rk}$	$F_{head,ASD}$	$F_{ax,Rk}$	$F_{ax,ASD}$	$F_{v,Rk}$	$F_{v,ASD}$	$F_{V,Rk,thin}$	$F_{V,Rk,thick}$	$F_{v,ASD}$
	[mm]	[mm]	[mm]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]
	LVL BEECH ρ_k=730kg/m³											
ø 8.0	8.0	**80***/60	-	10.35	-	23.52	-	-	-	7.39	13.50	-
	8.0	**100***/80	-	10.35	-	31.36	-	-	-	9.44	15.25	-
	8.0	**120**/100	-	10.35	-	32.80	-	-	-	10.78	15.25	-
	8.0	**140***/100	40	10.35	-	32.80	-	7.23	-	10.78	15.25	-
	8.0	**160**/100	55	10.35	-	32.80	-	7.98	-	10.78	15.25	-
	8.0	**200**/100	55	10.35	-	32.80	-	7.98	-	10.78	15.25	-
	8.0	**240**/100	55	10.35	-	32.80	-	7.98	-	10.78	15.25	-
	8.0	**280**/100	55	10.35	-	32.80	-	7.98	-	10.78	15.25	-
	8.0	**320**/100	55	10.35	-	32.80	-	7.98	-	10.78	15.25	-
	8.0	**440***/100	55	10.35	-	32.80	-	7.98	-	10.78	15.25	-
	C24 ρ_k=350kg/m³											
ø 8.0	8.0	**80***/60	-	2.79	1.13	6.29	2.40	-	-	3.54	6.06	1.36
	8.0	**100***/80	-	2.79	1.13	8.38	3.20	-	-	4.53	7.37	1.36
	8.0	**120**/100	-	2.79	1.13	10.48	4.00	-	-	5.51	7.90	1.36
	8.0	**140***/100	40	2.79	1.13	10.48	4.00	3.40	1.09	6.35	7.90	1.36
	8.0	**160**/100	60	2.79	1.13	10.48	4.00	3.98	1.09	6.35	7.90	1.36
	8.0	**200**/100	75	2.79	1.13	10.48	4.00	4.43	1.09	6.35	7.90	1.36
	8.0	**240**/100	75	2.79	1.13	10.48	4.00	4.43	1.09	6.35	7.90	1.36
	8.0	**280**/100	75	2.79	1.13	10.48	4.00	4.43	1.09	6.35	7.90	1.36
	8.0	**320**/100	75	2.79	1.13	10.48	4.00	4.43	1.09	6.35	7.90	1.36
	8.0	**440***/100	75	2.79	1.13	10.48	4.00	4.43	1.09	6.35	7.90	1.36

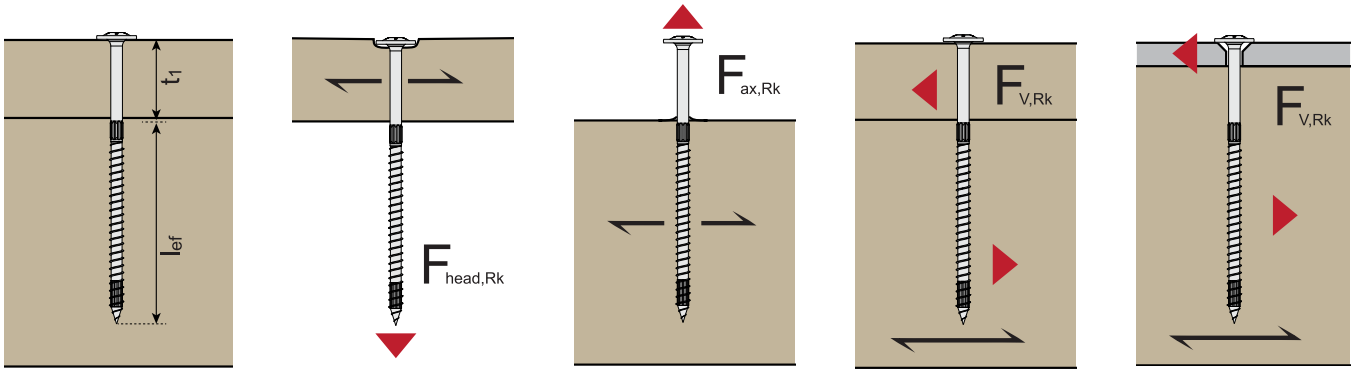
*available by request

RAPID® Hardwood partial thread washer head

Characteristics and values

		LVL beech	C 24
d	**[mm]**	**ø 8**	**ø 8**
d_k	[mm]	22.0	22.0
d_i	[mm]	6.10	6.10
$f_{ax,90,k}$	[N/mm²]	49.2	13.1
$f_{head,k}$	[N/mm²]	60.8	20.4
$F_{tens,k}$	[kN]	32.8	32.8
$M_{y,k}$	[Nmm]	42 800	42 800





			AXIAL				SHEAR				
			HEAD PULL THROUGH		WITHDRAWAL		TIMBER-TIMBER		METAL-TIMBER		
ø	L/b	$t_{1,min}$	$F_{head,Rk}$	$F_{head,ASD}$	$F_{ax,Rk}$	$F_{ax,ASD}$	$F_{v,Rk}$	$F_{v,ASD}$	$F_{V,Rk,thin}$	$F_{V,Rk,thick}$	$F_{v,ASD}$
[mm]	[mm]	[mm]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]
LVL BEECH ρ_k=730kg/m³											
8.0	**160/100**	60	29.43	-	32.80	-	10.78	-	10.78	15.25	-
C24 ρ_k=350kg/m³											
8.0	**160/100**	60	9.87	2.42	10.48	4.00	5.75	1.09	6.35	7.90	1.36

Axial axis to grain: 30° - 90°, $F_{ax,Rk}$ = thread withdrawal, $F_{head,Rk}$ = head pull through, $F_{v,Rk}$ = shear (// to grain 0° – ⊥ to grain 90°), wood/steel plate: l_{ef} = thread length b, t_1 min= minimum wood thickness, t_1 max= maximum wood thickness add-on part (L-b), $F_{V,Rk,thin}$= steel sheet t ≤ d/2, $F_{V,RK,thick}$= steel sheet t ≥ d

Type and printing errors reserved. The values stated are meant to serve as planning guides; projects should only be undertaken by authorised professionals.

© Pollmeier BauBuche-Fachwerk elobau photographer Michael Christian Peters

RAPID® Top-2-Roof

For on-roof insulation systems

Characteristics

Cylinder head

> Reduced splitting so that wood surface does not splinter

> Improved force transfer thanks to deeper drive

Fast screwing processes

> Coarse thread rolled out to the tip

> Low screw-in torque

Lower screw-in resistance

> The friction part reduces the screw-in resistance by reaming the wood around the shaft

Patented follower thread tip – no pre-drilling necessary

> Ensures that screw bites quickly with low splitting

Top-2-Roof		
		
Ø 8.0	Drive	T 40
	Length	240–520 mm
	Thread	Coarse thread
	Underhead	-
	Surface	BlueWin

Application

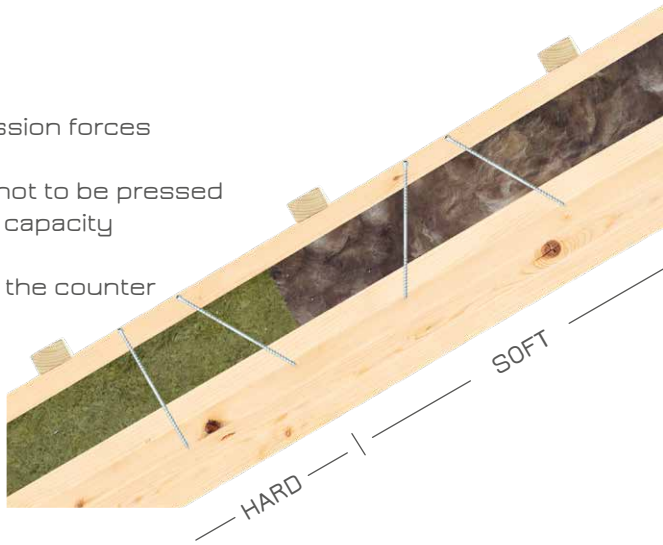
> Approved for hard and soft insulation

> Optimal for non-pressure-resistant (soft) insulation

> Especially for on-roof insulation: Absorbs thrust and compression forces

> The absorption of compression forces causes the insulation not to be pressed into the substrate nearly as much, which improves insulating capacity

> The second threaded part underneath the screw head keeps the counter batten optimally fixed in place



ON-ROOF AND EXTERIOR WALL INSULATION

> Counter batten verification incl. screwing

> Gabled and monopitch roofs

> Wall insulation 90°

Dimensioning software

> Easy and intuitive to operate - the EXCEL table calculation program does not require any special software knowledge

> Takes much less time to calculate

> Screw types and pre-defined insulations can be selected or you can customise by adding your own insulation

> The software takes national regulations into account and is available in German, English, French and Italian

RAPID® T-Con

For timber/concrete composite systems

Characteristics

Flexible tool selection

> Higher force transfer with hexagonal recess possible - important for particularly hard woods in the refurbishment of old buildings

> Additional customary T-slot (T40)

Screw-in marking

> The friction part serves as a practical marking for the remaining length, which must protrude out from the wood.

Fast screwing processes

> Coarse thread including patented follower thread, rolled out to the tip

> Low screw-in torque

Patented follower thread tip – no pre-drilling necessary

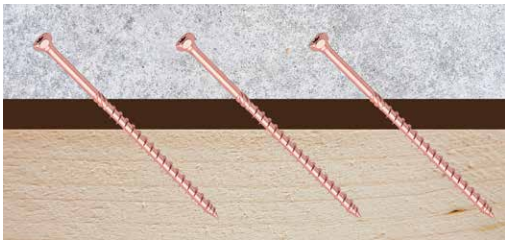
> 35° tip to bite quickly - especially for 45° pitch

T-Con		
		
Ø 8.0	Drive	T 40/SW12
	Length	155–205 mm
	Thread	Coarse thread
	Underhead	Shoulder
	Surface	RedWin

Advantages of the timber-concrete composite system

> Higher ultimate limit state for low structure height

> Especially when it comes to refurbishing old buildings, the existing ceiling can still be used - which is more economical, sustainable and affordable



Compared to purely wooden ceilings:

> Higher ultimate limit state and stiffness

> Fire prevention: The risk of transferring fire is greatly reduced

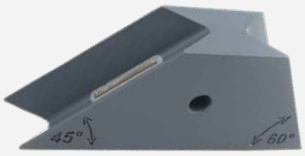
> Concrete ceiling panels reduce vibrations and improve noise insulation

Compared to purely concrete ceilings:

> Better environmental balance: 2/3 of timber is built in

> Lower dead load

Accessories



SCREW-IN TOOL

Dimensioning software

> The dimensioning software for timber/concrete composite systems is available in the following languages: German, English, French, Italian and Czech

> Concrete thickness starts at 50 mm (DE: 70 mm)

> Calculation for supported/non-supported ceilings

> Concrete cracked/not cracked

> Screw fitting 45°/90° or crosswise 45°/135° and supports 90°/135°

> With/without support

> The gusset concrete weight is factored into the dowel beam cross section

AUSTRIA ETA-18/0829 Z-9.1-845

RAPID® T-Lift

1.3 t & 2.5 t lifting system

Characteristics

Flexible tool selection

> Dual head (hexagonal and T-slot) offers flexible screwing

> Reinforced area under the head with optimal fitting for reliable force transfer

High pull-out forces and low splitting

> Sharply rolled out thread flanks for a minimised splitting, fast screwing in and very high pull-out forces

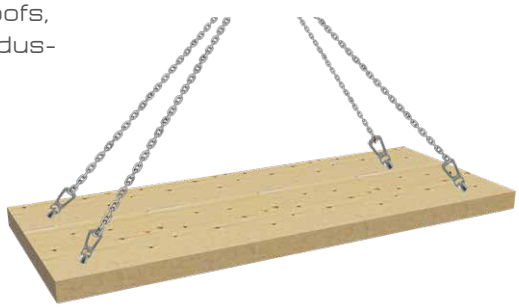
Patented follower thread tip – no pre-drilling necessary

> Patented compressor tip for a quick bite with reduced screwing torque

> Suitable for cordless screwdrivers

T-Lift		
		
Ø 12.0	Drive	T 40/SW 17
	Length	60–380 mm
	Thread	Single thread
	Underhead	Shoulder
Ø 16.0	Drive	T 50
	Length	180–600 mm
	Thread	Single thread
	Underhead	Shoulder
	Surface	BlueWin

Areas of application



> Used in constructive timber work as a lifting system for prefabricated roofs, walls and ceilings, in timber frame construction for the prefab house industry, solid wood boards, cross laminated timber and the like

> RAPID® T-Lift is suitable for cross-laminated timber, solid wood, coniferous wood-based materials (OSB, LVL etc.). For deciduous woods, we recommend using screws, pre-drilled

> Can be used for axial loads (screw subjected to tension) and transverse loads (screw subjected to shear-off stress)

Application information

> The RAPID® T-Lift sperical head anchor for the load group up to 1.3 t or up to 2.5 t may only be used with the self-drilling RAPID® T-Lift screw certified under ETA-12/0373, Φ 12 mm or Φ 16 mm

> The weight of the components to be lifted must be known and must not exceed the calculated screw load bearing capacity

> Screws may not be screwed into drying cracks or the like

> Screw-in angle in the timber: 0 - 90°

> Complete operating instructions for the RAPID® T-Lift can be found at www.schmid-screw.com/en/download-center

Safety information

> For safety reasons, the screws should only be used once

> The entire component must be lifted with at least two screws

> RAPID® T-Lift must be checked for damage before each use

> The lifting system must be checked by an expert/safety officer from the user company at least once a year. The degree of wear and tear in particular should be determined, in addition to damage of all kinds

> Modifications and repairs, especially welding, on the lifting system are not permitted

Safety

For secure screw fittings in timber construction

RAPID® Secure

Screw-in tool

The RAPID® Secure screw-in tool represents a completely novel technology for secure screw fittings in timber construction.
This solution enables long wood construction screws and hardwood screws to be screwed securely and quickly with all screwdrivers (13 mm drill chuck) without a problem.
The screw head is held securely in place and is firmly connected with the RAPID® Secure. There is no way for the bit to slip off
and no need to press down.
With the RAPID® Secure screw-in tool, screwing with wood construction screws is extra secure and simple. The tool can be used with conventional screwdrivers and gives your workers security even in inconvenient screwing positions.

Benefits from using the RAPID® Secure:

> Increased work safety for employees

> After being locked into place, the screw cannot be loosened and fits tightly on the bit - no pressing down while screwing in and less wear - bit holds for much longer

> Easier to screw in difficult and dangerous work positions and situations

USE THE RAPID® SECURE WITH RAPID® AND STARDRIVE GPR® SCREWS FROM SCHMID SCHRAUBEN:

> RAPID® SECURE L, T 40: ø 8 mm Rapid®/GPR® countersunk head, ø 8 mm Rapid® cylinder head, ø 10 mm Rapid® Dual, ø 8 mm Rapid® T-Con

> RAPID® SECURE L, special bit T50: ø10 mm Rapid cylinder head

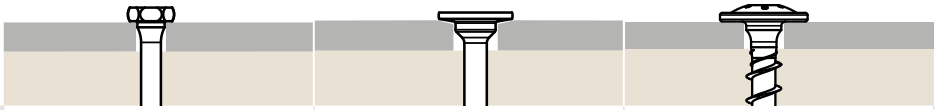
> RAPID® SECURE XL, T 40: ø 8 mm Rapid®/GPR® washer head, ø 8 mm Rapid® SuperSenkFix, ø 12 mm Rapid® Dual, ø 12 mm Rapid® T-Lift

> RAPID® SECURE XL, T 50: ø 10 mm Rapid®/GPR® countersunk head, ø 12 mm Rapid®/GPR® countersunk head, ø 10 mm Rapid® SuperSenkFix

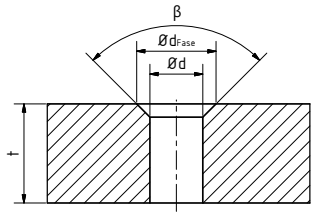
Metal/wood connections

according to ETA-12/0373

Drilled holes and punched holes: the RAPID® Dual and SuperSenkFix head as well as the StarDrive GPR® PS are suitable. The screw automatically centres while screwing in and results in a perfect fit.

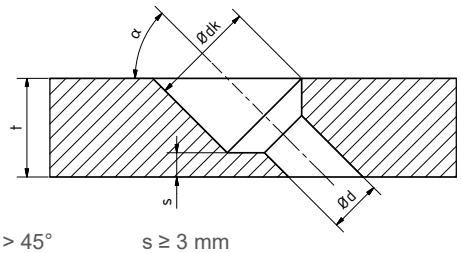
	RAPID® Dual	RAPID® SuperSenkFix	GPR® PS
			
Φ 6mm	-	8mm	-
Φ 8mm	8mm	10mm	8mm
Φ 10mm	10mm	13mm	-
Φ 12mm	12mm	-	-

90° countersunk drilled holes: provide the countersunk head with sufficient support on the chamfer. Washer head screws also require a chamfer due to the rounding; 1.5 x d is recommended. The screw automatically centres while screwing in.
We recommend d +0+1mm for the cylindrical drilled hole in the metal. (d = outer screw diameter)



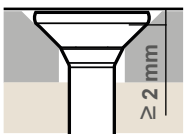
$d_{chamfer}$ = d·1.5 in mm
d = diameter of drilled hole in mm
$d_{chamfer}$ = diameter of chamfer in mm

Oblique drilled holes: predominantly 45° oblique drilled holes are used in timber engineering. The design ensures that the countersunk head will fit with adequate stability in accordance with ETA-12/0373, which is suitable for metals with t ≥ 10mm:



α > 45° s ≥ 3 mm
30° ≤ α≤ 45° s ≥ 2 mm

If the countersunk head should be fully countersunk into the metal, $d_{chamfer}$ must be designed with a countersinking depth of 2 mm. :

	RAPID® countersunk head	
	d chamfer	Countersinking depth
Φ 6mm	Min. 15 mm	
Φ 8mm	Min. 15 mm	
Φ 10mm	Min 19 mm	
Φ 12mm	Min 21 mm	

Characteristic values for the calculation of metal/timber connections should be taken from the tables in this brochure. Is defined according to EC5 (EN1995-1-1)
- Thin metal sheet: Sheet thickness t ≤ 0.5 * d (outer thread diameter)
- Thick metal sheet: Sheet thickness t ≥ d (outer thread diameter)
- Sheet thicknesses between t ≤ 0.5 * d and t ≥ d should be interpolated linearly

Minimum spacing

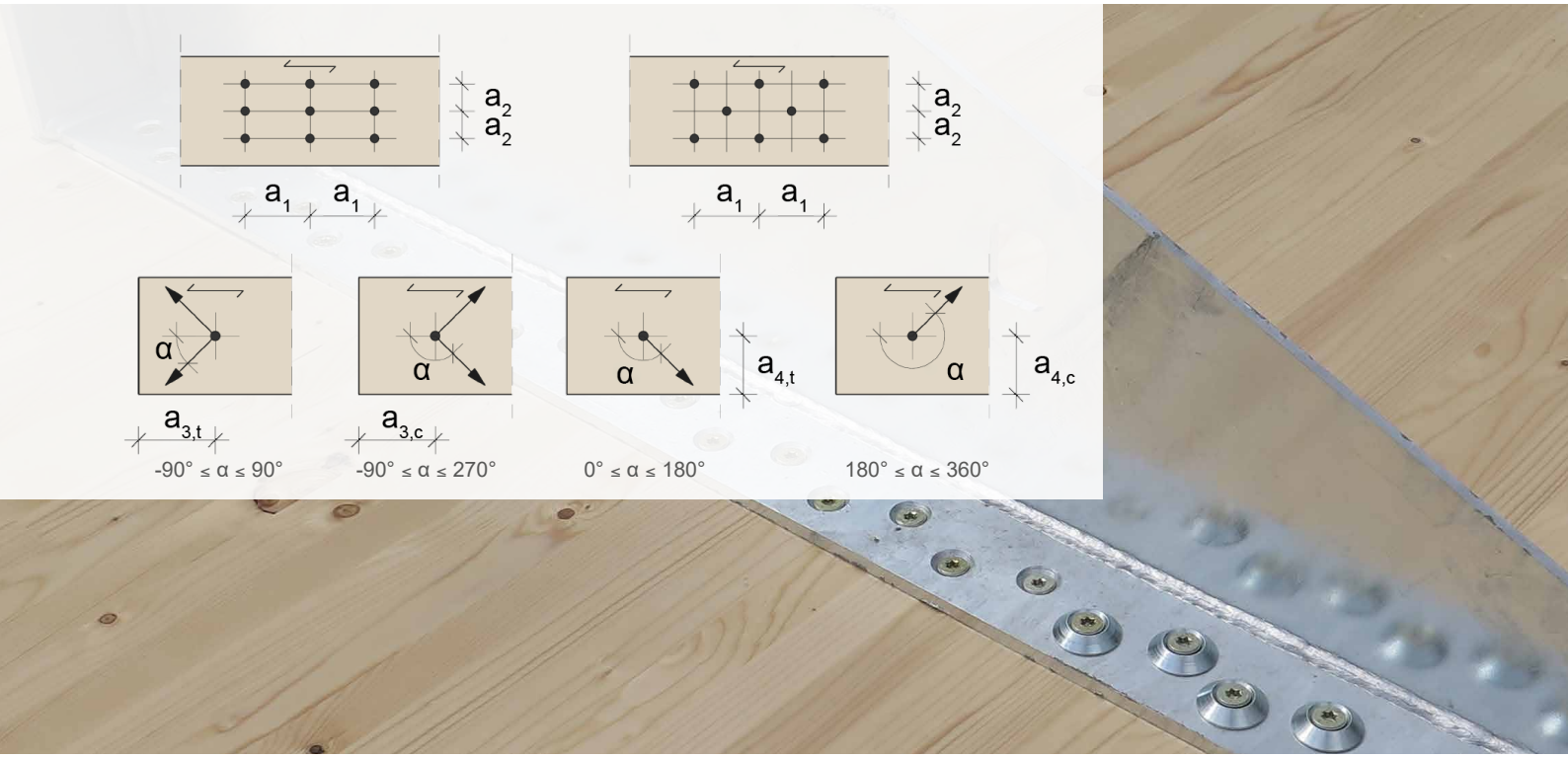
for self-drilling screws RAPID©, StarDrive GPR© and for screws with drill bit

		Subjected to axial stress		Subjected to axial and/or shear stress		Subjected to axial and shear or only shear stress					
		Timber and coniferous wood-based materials (pre-drilled, not pre-drilled) and deciduous wood (pre-drilled)		Cross-laminated timber (not pre-drilled)		Timber and coniferous wood-based materials, deciduous wood and LVL beech					
		Side wood and end grain		Area	Narrow edge	Side wood and end grain					
Conditions	a1 x a2	≥ 25 x d²	≥ 21 x d²	-	-	α	Screwing in pre-drilled coniferous wood, deciduous wood and LVL deciduous wood*		Screwing **without pre-drilling**			
							d < 5mm	d> 5 mm	Screws d < 5 mm in coniferous wood**	Screws d ≥ 5 mm in coniferous wood**	Screws d ≥ 5 mm with HSP in coniferous wood*	RAPID® Hardwood d=8 mm in deciduous wood and LVL beech**
Axial spacing	a1	5 x d	7 x d	4 x d	10 x d	0°	5 x d		10 x d	12 x d	5 x d	15 x d
						90°	4 x d		5 x d	5 x d	4 x d	7 x d
Edge distance	a1, c	5 x d		-	-	0°			-	-	-	-
						90°						
Axial spacing ⊥	a2	2.5 x d	3 x d	2.5 x d	3 x d	0°	3 x d		5 x d		3 x d	7 x d
						90°	4 x d				4 x d	
Edge distance ⊥	a2, c	4 x d		-	-	0°	-		-	-	-	-
						90°						
Edge distance // loaded	a3, t	-	-	6 x d	12 x d	0°	12 x d		15 x d		12 x d	20 x d
						90°	7 x d		10 x d (15 x d if screw d ≥ 8 and timber thickness t < 5d)		7 x d	15 x d
Edge distance // unloaded	a3, c	-	-	6 x d	7 x d	0°	7 x d				7 x d	15 x d
						90°						
Edge distance ⊥ loaded	a4, t	-	-	6 x d	5 x d	0°	3 x d		5 x d	5 x d	3 x d	7 x d
						90°	5 x d	7 x d	7 x d	10 x d	7 x d	12 x d
Edge distance ⊥ unloaded	a4, c	-	-	2.5 x d	3 x d	0°	3 x d		5 x d (3 x d if a1 and a3 min. 25 x d, even if timber thickness t < 5d)		3 x d	7 x d
						90°						
Distance between screws in screw cross	a cross	1.5 x d										
Minimum timber thickness	t	12d		10d								

Screw diameter	< 8	8	10	12
Minimum thickness t for load-bearing timber parts [mm]	24	30	40	80

- If the timber does not meet the minimum thickness, it should generally be pre-drilled
- Pre-drilling diameter: di (-0.5/+1.0) for coniferous wood di (-0/+0.5) for deciduous wood and LVL
- Woods at risk of splintering (e.g. Douglas fir, silver fir) should be pre-drilled or use a higher minimum thickness according to EN1995-1-1
- Drilled holes for positioning, guidance or orientation are NOT PRE-DRILLED
- All screws (d≥ 5mm) may be screwed into deciduous wood and LVL beech up to 10xd in length without pre-drilling; the distances for Rapid® Hardwood should be observed
- The minimum binding anchoring depth for screws is 4d, or 20d in end wood.
- The minimum anchoring depth for CLT is 4d on the face side and 10d on the narrow edge (front face)

d = outer thread diameter, d_1 = thread core diameter,
α = angle between direction of force and direction of grain
*See EN1995-1-1, table 8.2 how nails are pre-drilled
**See EN1995-1-1, table 8.2 how nails are not pre-drilled



Information

- Geometry and mechanical properties correspond to ETA 12/0373.
- In connections between main and secondary beams, the main beam must be able to adequately with stand torsion and fixed with fork support.
- The values stated for main/secondary beam connections only apply to vertically oriented loads. Any transverse stress must be verified separately.
- The rope effect has been factored into the calculation of shear-off values.
- Permissible values F_{ASD} load: Design according to DIN 1052:1988 and German licences Z-9.1-564 for RAPID® partial thread, Z-9.1-435 for StarDrive GPR®, Z-9.1-656 for RAPID® full thread, these lower values are only intended as guidance.
- Characteristic values F_{Rk}: Design according to EC5 and ETA 12/0373, these values should be used for calculations
- The design value of the ultimate limit state $F_{v,Rd}$ for the final design of the timber connection is taken from the characteristic values as follows:

$$F_{Rd} = \frac{F_{Rk} \cdot k_{mod}}{Y_m}$$

F_{Rd} ... Design value of ultimate limit state subjected to shear-off stress or tension depending on connection
F_{Rk} ... characteristic value of ultimate limit state subjected to shear-off stress or tension depending on connection
Y_m, k_{mod} ... Additional values from corresponding national norms

Corrosion

Processing and corrosion protection

Our surfaces

YellWin, BlueWin and RedWin are chrome(VI)-free high-quality surfaces from Schmid. They are regularly reviewed to ensure they meet standards. The figures at the end of the denotation indicate the number of hours until red rust according to tests.

SALT SPRAY TEST

The salt spray test (SST, also called the "salt fog test") is a standardised test for evaluating the anti-corrosion effect of organic coatings, metallic casings or chemical/physical surface treatments.
Various national and international norms (e.g. DIN EN ISO 9227) regulate how to perform the test. The test specimens are placed
under normalised conditions in a test chamber, where a sprayed salt solution (typically a sodium chloride solution) is allowed to act upon the test specimen. The test is repeated continually until a previously established time limit has been reached. This can consist of a few to several thousand hours. At the end of the test's time limit, the corrosion that has occurred on the test specimens is evaluated.

NOTES

Zinc nickel coatings have a reduced anti-corrosion effect when they come into contact with wood preservatives containing copper (impregnations).
Standard zinc coatings are applied by means of electro-galvanising and each layer can technically be 15µm to 20µm thick.

SPECIAL COATINGS

Zinc nickel or extra thick zinc layers
≥ 25µm that are applied by means of hot-dip galvanising provide higher protection against corrosion and are available by request, such as our ZnNi 1500+ surface.
Versions can also be produced in stainless steel A2 or A4 by request.

Screw	galvanised yellow	BlueWin (galvanised blue)	RedWin	YellWin 500+	BlueWin 700+	ZnNi 1000+
RAPID®						
Countersunk head / washer head				×		
SuperSenkFix					×	
Dual		×				
Full thread CS / CL				×		
T-Lift		×				
Top-2-Roof		×				
T-Con			×			
Hardwood					×	
Full thread Plus				×		
Stardrive GPR®						
Countersunk head / washer head	×	×				
Post screw						×

Reference

Tree Tower on the tree-top path

After eight months of construction, the grand viewing tower in the Steigerwald forest in Ebrach Bavaria was officially opened on 19 March 2016.
Architect Josef Stöger is responsible for the unique structure. The Upper Austrian timber specialist WIEHAG, which has relied on the quality of Schmid Schrauben for years, was chosen to implement the project.
Thousands of RAPID® full thread screws were used for this extraordinary wood construction project. The tree tower connects directly to the 1.1km
canopy walkway, which runs straight through the Bavarian forest at a height of 8 to 25 metres. A spiral staircase takes visitors to heights above 40 metres, offering breathtaking views of the Steigerwald forest.
The tower's different levels provides visitors with multiple viewing points of the surrounding trees as well as the beech and fir trees that lie within the tree tower's impressive winding paths.

Baumturm Steigerwald Ebrach © Bayerische Staatsforste

Screw production

From wire to screw

Wire procurement

To produce our products, we exclusively use wires made of carbon steel with approved quality from traceable sources.

Wire drawing

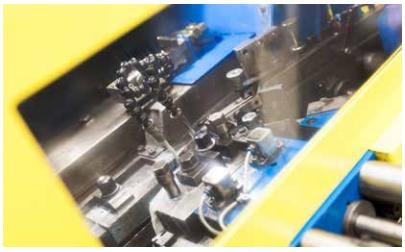
We form wires in the exact diameter that your screw requires in our in-house drawing mill.

Annealing

The controlled heating guarantees that your product is formed with clean geometry

Pressing

Our high-end pressing systems allow a wide range of screws to be produced not only in precise quality, but also at economical costs, thanks to the high level of vertical integration.



Rolling

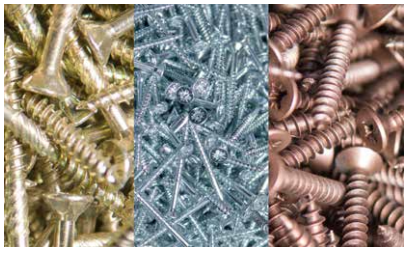
Thread is rolled onto screws on the latest rolling systems. Anything is possible with diameters of up to Ø24 mm and lengths of up to 1,500 mm.

Chipping
Post-processing

Subsequent chipping processes allow specific product features such as cross holes, tips, grooves and the like to be implemented on the component.

Hardening

We harden screws in a special gas atmosphere in our new heat treatment system.



Surfaces

Our special "RedWin", "BlueWin" or "YellWin" coatings protect screws from corrosion. A special anti-friction coating ensures maximum efficiency in application.

Packing

By request, we deliver your screws with custom customer labels or in packages printed with your company's logo.

Responsibility for the future

FAIR play

We naturally comply with statutory regulations. They are many times more stringent than those of other regions regarding the handling of carbon dioxide, energy, waste and chemicals.

Small carbon footprint

Our partners are primarily local European raw material suppliers. This means that our transport routes are shorter than if we were to import raw materials on container ships, which cause high levels of harmful emissions

Social standards

It is self-evident that the exploitation of workers and child labour have no place in an Austrian company. However, we ensure that these and other social standards are adhered to in the companies of our suppliers and partners as well.

Highest Product quality

Our premium products make it possible to implement more efficient application solutions with fewer screws, which helps to conserve resources. Furthermore, our high-quality screws ensure a longer service life along with faster and easier processing.

Recycling

Thanks to the good anti-friction coating and geometry of our premium products, they can be removed from the timber without a trace. This allows individual beams and joists to be reassembled into new structures, thus saving resources.

Energy-saving Production

The switch to electrically operated forklifts and LED lights, along with new energy-saving technologies and machinery in production and heat recovery in the hardening process, has helped our production to become more environmentally friendly.

Health in the workplace

We are mindful of our employees' health and rely on healthy, environmentally friendly chemicals and raw materials wherever possible. For example, we have established the use of Cr(VI)-free corrosion protection in our Premium RAPID® screws.

Continual Improvement

qualityaustria SYSTEMZERTIFIZIERT
ISO 9001 NR.00373/0
ISO 50001 NR.00104/0
ISO 14001 NR.00085/0

We strive to continually improve our carbon footprint.
The ISO 50001 energy management system and the ISO 14001 environmental management system help to make sure of this. Suggestions to improve each individual employee's work routine are actively communicated on an ongoing basis.

Ongoing analyses of energy flow

We analyse our energy flow on an ongoing basis, as well as resource consumption, so that we can quickly counteract "energy guzzlers" or wastage. At the same time, we also work actively on developments and optimisations in the area of energy recovery from production.

Image: Strengths

With innovative services, we don't just strengthen the Schmid Schrauben brand, we want to strengthen your brand too.

SALES TOOLS FROM US TO YOU

We provide professional sales tools branded with your company's logo and design, from any kind of marketing documents to product folders and website.

SPECIAL PROJECTS: OUR EXPERTS SUPPORT YOU

We guide you in our customer service with internationally leading expertise on special topics such as fire prevention, edge distances, corrosion protection and much more.

MARKETING AND ADVERTISING

Schmid Schrauben's consistent market and press work creates trust in our products. In us. And thus in you.

SERVICE & SOFTWARE

Give your customers a clear sign of your technical and commercial competence with our calculation service and the calculation software (on-roof, HBV) from Schmid Schrauben.

FAST, ON-TIME DELIVERY

Also when linked to your disposition.

DIRECT ENQUIRY

We're happy to establish stock levels between agents and Schmid Schrauben!

PROCUREMENT

You benefit from our procurement service for non-production parts (trade channel) as well as from direct deliveries to end customers.

Selling power: Increase

Want to realise the full potential of our products in sales? We can help.

SEMINARS, TRAININGS

The (added) value of Schmid Schrauben has more of an impact when your Sales department knows about it. With training, factory tours and hands-on training events at your site, we bring your consultants up to date. We also offer specialised seminars on special topics with our external partners. (Corrosion, fire prevention, calculations, etc.)

Brands: Develop

We also make “customer-brand screws” from “Schmid-brand screws”.

INDIVIDUALLY ENGINEERED PRODUCT DEVELOPMENTS

The screws you or your customer are looking for are nothing but a drawing so far? Or just an idea? Special projects often require special solutions tailored to the customer. We design or produce for you based on your drawing or model. Our machinery offers a variety of possibilities for production. From rapid prototyping with 3D printers to producing custom parts in small series to hardening and hot-dip galvanising. There is (almost) nothing we can’t solve.

LABELS/PACKAGING/BOX

Labels based on your request, our own packaging and means of shipment - we provide the right solution.

QUALITY

Is measurable and feasible in every nuance here. Our range covers everything from material tests, screw-in tests on our in-house test bench, measurement of layer thicknesses and friction values, to corrosion tests and chemical analysis procedures.

Special production orders

We engineer your ideas into being for you with precision and high quality.

YOUR TOOLS

Milling, turning, eroding, grinding, honing, tempering: Our metal processing possibilities
vary widely and are technologically state of the art. We also produce your tool made to measure, just as precise as screws, according to your requirements. Make use of our well-equipped machinery!

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Experience
We have been specialists in the manufacture of wood construction screws for over 175 years.

Your screw - Your brand
We manufacture screws exactly according to your wishes.

Statics
Our screws have above-average mechanical values for pull-out and head pull-through.

Sustainability
We take care of our environment and manufacture according to ISO 14001 and ISO 50001.

Special hardening
Our screws are viscoplastic and bendable by at least 45° - elastic and high-strength.

Safety
Our screws are approved according to ETA 12/0373.

Always available
Our warehouse is always stocked with our extensive range.

Service orientation
Whether with calculations, expertise or experience - we are there for our customers.

Highest quality
We manufacture according to ISO 9001 and are externally monitored by Holzforschung Austria.

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