Safety
Our screws fulfill the European technical admission ETA 12/0373.

Statics
Our screws show above-average values for extraction- and head resistance.

Experience
We are specialised in manufacturing of timber construction screws / special parts for more than 175 years.

Special hardening
Our screws are tough-elastic and 45° bendable – elastic and high-strength.

Highest Quality
We produce according to ISO 9001.

Sustainability
We take care for our environment and produce according to ISO 14001 and ISO 50001.

Your screw - Your brand
We produce screws exactly to your needs.

schmid
schrauben hainfeld

Solutions for timber constructions

Product information I Technical data sheets

What we fix is firm.

Profit on 175 years of fastening technology experience!

SCHMID SCHRAUBEN

With 175 years of experience Schmid Schrauben is one of the technology leaders throughout Europe in screw production and fastening technology.

Technological edge, flexible production, custom packaging and fast delivery form the core values Schmid Schrauben stands for.

Besides their own brands RAPID® and StarDrive GPR® as well as other product lines, Schmid Schrauben develops and produces custom-made products with screw lengths of up to 1,500 mm.

CLASS EN MASS

Regardless which Schmid screw you rely on, you thereby rely on a manufacturer with added value: Schmid Schrauben is ISO 14001, ISO 9001 and ISO 50001 as well as ETA and EN14592 certified.

QUALITY CONNECTS

Leading and reliably produced screw technology creates connections that hold firm. Also between you and your customers: thanks to excellent delivery capability and the personal service of Schmid Schrauben.

ETA-12/0373

schmid schrauben hainfeld

OUR BUSINESS-RANGE

Screws for timber constructions

Partial thread	Countersunk head	Washer head	Dual head	Surface	
RAPID® 2000	Ø3 - 6 mm	-	-	YellWin 500+	S. 4 ff.
RAPID® Komprex	Ø8 - 12 mm	Ø8 - 10 mm	-	YellWin 500+	S. 8 ff.
RAPID® SuperSenkFix	-	Ø6 - 10 mm	-	BlueWin 700+	S. 14 ff.
RAPID® Dual	-	-	Ø8 - 12 mm	BlueWin	S. 18 ff.
RAPID® Hardwood	Ø8 mm	-	-	BlueWin 700+	S. 22 ff
RAPID® T-Lift	-	-	Ø12 mm	BlueWin	S. 26 ff.

Fullthread	Countersunk head	Cylinder head	Surface	
RAPID® Fullthread	Ø8 - 12 mm	Ø8 - 10 mm	YellWin 500+ / Zinc Nickel / Stainless steel	S. 28 ff.

Screws for timber-concrete-composite systems

Partial thread	Dual head	Surface	
RAPID® T-Con	Ø8 mm	RedWin	S. 34 ff.

Screws for roof insulation systems

Partial thread	Cylinder head	Surface	
RAPID® Top-2-Roof	Ø8 mm	BlueWin	S. 38 ff.

OUR CLASSIC-RANGE

Screws for timber constructions

Partial thrad	Countersunk head	Washer head	Surface	
StarDrive GPR®	Ø4 - 10 mm	Ø6 - 10 mm	yellow galvanised / BlueWin /stainless steel	S. 42 ff.

ADDITIONAL INFORMATION

RAPID® 2000

schmid schrauben hainfeld

Milling pockets

End mill cutter

Double thread

Notch in the thread

30°-Tip

Dimensions

3x16 to 6x300mm

YellWin 500+ Grip free

> Highest quality
> Innovative technology
> Made in AUSTRIA

Detailed Info

RAPID® 2000

special hardened, slide coating, YellWin 500+

Tip

With 30° geometry:
> Reduced split effect
> Quicker bite
> No pre-drilling required

Milling pockets

Underhead milling pockets for optimal countersink:
> Smooth
> Gentle on material
> Also ideal for fittings

Thread

Double thread with integrated notch, recessed second thread turn rolled out to the tip:
> Minimised blast effect
> Improved pull-out values
> Quicker screwing

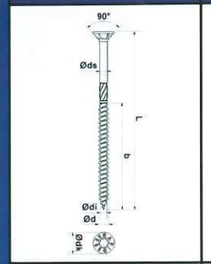
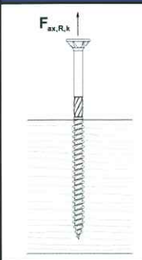
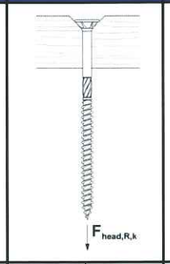
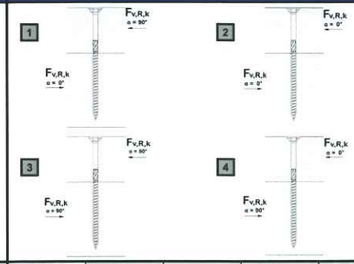
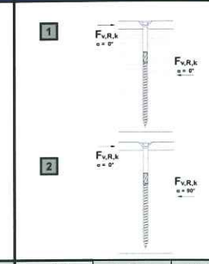
End mill cutter

The friction part reduces screwing resistance.

RAPID® 2000

schmid schrauben hainfeld

Characteristic	Unit	Ø 3,0 k)	Ø 3,5 k)	Ø 4,0	Ø 4,5	Ø 5,0	Ø 6,0
Head diameter	d_k [mm]	6,0	7,0	8,0	9,0	10,0	12,0
Core diameter	d_1 [mm]	1,8	2,1	2,4	2,7	3,1	3,8
Shaft diameter	d_s [mm]	2,2	2,6	2,8	3,2	3,5	4,3
Drive	TX	10	10	20	20	25	30
Tensile load	$f_{tens,k}$ [kN]	-	-	5,0	7,0	8,8	13,1
Yield moment	$M_{y,k}$ [Nm]	-	-	3,1	4,2	5,9	10,7

Dimensions		Extraction resistance		Head traction resistance		Wood - wood shearing					Steel - wood shearing		
													
d x L [mm]	b [mm]	zul. N_z [kN]	$F_{ax,R,k}$ [kN]	zul. N_z [kN]	$F_{head,R,k}$ [kN]	zul. N [kN]	1. $F_{v,R,k}$ [kN]	2. $F_{v,R,k}$ [kN]	3. $F_{v,R,k}$ [kN]	4. $F_{v,R,k}$ [kN]	zul. N [kN]	1. $F_{v,R,k}$ [kN]	2. $F_{v,R,k}$ [kN]
		α=0°...90°				α=0°...90°	α_{AD}=90° α_{ET}=0°	α=0°	α=90°	α_{AD}=0° α_{ET}=90°	α=0°...90°	α=0°	α=90°
Ø 4,0													
4,0 x 30	17	0,34	1,01	0,32	1,09	a)	a)	a)	a)	a)	0,34	1,24	1,24
4,0 x 35	20	0,40	1,14	0,32	1,09	a)	a)	a)	a)	a)	0,34	1,40	1,40
4,0 x 40	25	0,50	1,43	0,32	1,09	a)	a)	a)	a)	a)	0,34	1,47	1,47
4,0 x 45	25	0,50	1,43	0,32	1,09	a)	a)	a)	a)	a)	0,34	1,47	1,47
4,0 x 50	30	0,60	1,72	0,32	1,09	a)	a)	a)	a)	a)	0,34	1,54	1,54
4,0 x 60	35	0,70	2,00	0,32	1,09	0,27	1,06	1,06	1,06	1,06	0,34	1,61	1,61
4,0 x 70	35	0,70	2,00	0,32	1,09	0,27	1,06	1,06	1,06	1,06	0,34	1,61	1,61
Ø 4,5													
4,5 x 30	19	0,43	1,14	0,41	1,43	a)	a)	a)	a)	a)	0,43	1,37	1,37
4,5 x 35	19	0,43	1,14	0,41	1,43	a)	a)	a)	a)	a)	0,43	1,51	1,51
4,5 x 40	24	0,54	1,44	0,41	1,43	a)	a)	a)	a)	a)	0,43	1,71	1,71
4,5 x 45	24	0,54	1,44	0,41	1,43	a)	a)	a)	a)	a)	0,43	1,71	1,71
4,5 x 50	29	0,65	1,74	0,41	1,43	a)	a)	a)	a)	a)	0,43	1,79	1,79
4,5 x 60	34	0,77	2,03	0,41	1,43	0,34	1,27	1,27	1,27	1,27	0,43	1,86	1,86
4,5 x 70	39	0,88	2,33	0,41	1,43	0,34	1,31	1,31	1,31	1,31	0,43	1,94	1,94
4,5 x 80	44	0,99	2,63	0,41	1,43	0,34	1,31	1,31	1,31	1,31	0,43	2,01	2,01
Ø 5,0													
5,0 x 40	22	0,55	1,50	0,50	1,46	a)	a)	a)	a)	a)	0,53	1,89	1,89
5,0 x 50	27	0,68	1,84	0,50	1,46	a)	a)	a)	a)	a)	0,53	2,12	2,12
5,0 x 60	32	0,80	2,18	0,50	1,46	0,43	1,44	1,44	1,44	1,44	0,53	2,21	2,21
5,0 x 70	37	0,93	2,52	0,50	1,46	0,43	1,54	1,54	1,54	1,54	0,53	2,29	2,29
5,0 x 80	47	1,18	3,20	0,50	1,46	0,43	1,54	1,54	1,54	1,54	0,53	2,46	2,46
5,0 x 90	47	1,18	3,20	0,50	1,46	0,43	1,54	1,54	1,54	1,54	0,53	2,46	2,46
5,0 x 100	55	1,38	3,74	0,50	1,46	0,43	1,54	1,54	1,54	1,54	0,53	2,60	2,60
5,0 x 110	65	1,63	4,42	0,50	1,46	0,43	1,54	1,54	1,54	1,54	0,53	2,77	2,77
5,0 x 120	65	1,63	4,42	0,50	1,46	0,43	1,54	1,54	1,54	1,54	0,53	2,77	2,77
Ø 6,0													
6,0 x 50	29	0,87	2,26	0,72	2,10	a)	a)	a)	a)	a)	0,77	2,73	2,73
6,0 x 60	34	1,02	2,65	0,72	2,10	0,61	1,79	1,79	1,79	1,79	0,77	3,05	3,05
6,0 x 70	39	1,17	3,04	0,72	2,10	0,61	1,95	1,95	1,95	1,95	0,77	3,15	3,15
6,0 x 80	48	1,44	3,74	0,72	2,10	0,61	1,98	1,98	1,98	1,98	0,77	3,32	3,32
6,0 x 90	48	1,44	3,74	0,72	2,10	0,61	2,21	2,21	2,21	2,21	0,77	3,32	3,32
6,0 x 100	54	1,62	4,21	0,72	2,10	0,61	2,21	2,21	2,21	2,21	0,77	3,44	3,44
6,0 x 110	64	1,92	4,99	0,72	2,10	0,61	2,21	2,21	2,21	2,21	0,77	3,63	3,63
6,0 x 120	64	1,92	4,99	0,72	2,10	0,61	2,21	2,21	2,21	2,21	0,77	3,63	3,63
6,0 x 130	64	1,92	4,99	0,72	2,10	0,61	2,21	2,21	2,21	2,21	0,77	3,63	3,63
6,0 x 140	64	1,92	4,99	0,72	2,10	0,61	2,21	2,21	2,21	2,21	0,77	3,63	3,63
6,0 x 150	64	1,92	4,99	0,72	2,10	0,61	2,21	2,21	2,21	2,21	0,77	3,63	3,63
6,0 x 160	64	1,92	4,99	0,72	2,10	0,61	2,21	2,21	2,21	2,21	0,77	3,63	3,63
6,0 x 180	64	1,92	4,99	0,72	2,10	0,61	2,21	2,21	2,21	2,21	0,77	3,63	3,63
6,0 x 200	64	1,92	4,99	0,72	2,10	0,61	2,21	2,21	2,21	2,21	0,77	3,63	3,63
6,0 x 220	64	1,92	4,99	0,72	2,10	0,61	2,21	2,21	2,21	2,21	0,77	3,63	3,63
6,0 x 240	64	1,92	4,99	0,72	2,10	0,61	2,21	2,21	2,21	2,21	0,77	3,63	3,63
6,0 x 260	64	1,92	4,99	0,72	2,10	0,61	2,21	2,21	2,21	2,21	0,77	3,63	3,63
6,0 x 280	64	1,92	4,99	0,72	2,10	0,61	2,21	2,21	2,21	2,21	0,77	3,63	3,63
6,0 x 300	64	1,92	4,99	0,72	2,10	0,61	2,21	2,21	2,21	2,21	0,77	3,63	3,63

From wire to screw

Screw production

WIRE PURCHASE

For the production of our products we only use wires with tested quality and traceable batch numbers.

WIRE DRAWING

In our own drawing shop we form wires in exactly the diameter your screw requires.

WIRE GLOWING

The controlled heating guaranties that your product geometry is perfectly formed.

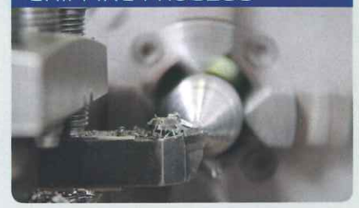
PRESSING

Our highend pressing plants enable us to manufacture a wide range of screws not only in precise quality but also at reasonably economic cost.

ROLLING

With modern rolling plants we roll the sharply formed-out thread on our screws. Thereby everything is possible up to Ø24mm and a length of 1.500mm.

POST-PROCESSING CHIPPING PROCESS



In a post-manufactoring chipping process some more specific product features like crosswise holes, pointing, grooving (to name some) can be added to the component.

HARDENING

In our new heat treatment plant, we harden the screws in a special gas atmosphere.

FINISHING

Our special coatings „RedWin“, „BlueWin“, or „YellWin“ protect the screws against corrosion. A special slide coating takes care of a maximum efficiency in use.

PACKING

We deliver your screws with customised labels or even your costummade box that represents your brand.

RAPID® Komprex

schmid schrauben hainfeld

Milling pockets

End mill cutter

Hi-lo thread

Compactor tip

Alternative head shape

Dimensions

8x80 to 10x500mm

YellWin 500+

> Highest quality
> Innovative technology
> Made in AUSTRIA

Detailed Info

RAPID® Komprex

Specially hardened, slide coating, YellWin 500+

Tip

Patented compactor tip:
> Quicker bite for reduced fastening torque
> Reduced split effect
> No pre-drilling required

Thread

Designed to state-of-the-art standards:
> Hi-lo thread for energy-saving screwing with improved pull-out values
> Double thread for quicker fastening times

Milling pockets

Underhead milling pockets for optimal countersink:
> Smooth
> Gentle on material
> Also ideal for fittings

End mill cutter

The friction part reduces screwing resistance.

Alternative head shape

Thanks to the washer cap head, no separate use of washers is required:
> Shorter assembly times
> Improved pull-through values

RAPID® Komprex

schmid schrauben hainfeld

Characteristic		Unit	Ø 8,0
Head diameter	Countersunk head	d_k [mm]	15,0
	Washer head	d_k [mm]	22,0
Core diameter		d_i [mm]	5,3
Shaft diameter		d_s [mm]	5,9
Drive	Countersunk head	TX	40
	Washer head	TX	40
Tensile load		$f_{tens,k}$ [kN]	23,3
Yield moment		$M_{y,k}$ [Nm]	22,6

Dimensions		Extraction resistance		Head traction resistance				Wood - wood shearing									Steel - wood shearing		
				Countersunk head		Washer head		Countersunk head					Washer head						
d x L [mm]	b [mm]	zul. N_z [kN]	$F_{ax,R,k}$ [kN]	zul. N_z [kN]	$F_{head,R,k}$ [kN]	zul. N_z [kN]	$F_{head,R,k}$ [kN]	zul. N [kN]	1. $F_{v,R,k}$ [kN]	2. $F_{v,R,k}$ [kN]	3. $F_{v,R,k}$ [kN]	4. $F_{v,R,k}$ [kN]	zul. N [kN]	1. $F_{v,R,k}$ [kN]	2. $F_{v,R,k}$ [kN]	3. $F_{v,R,k}$ [kN]	4. $F_{v,R,k}$ [kN]	zul. N [kN]	1. $F_{v,R,k}$ [kN]	2. $F_{v,R,k}$ [kN]
								α=0°...90°	α_{AD}=90° α_{ET}=0°	α=0°	α=90°	α_{AD}=0° α_{ET}=90°	α=0°...90°	α_{AD}=90° α_{ET}=0°	α=0°	α=90°	α_{AD}=0° α_{ET}=90°	α=0°...90°	α=0°	α=90°
Ø 8,0																				
8,0 x 80	50	2,00	4,36	1,13	2,79	2,42	9,87	0,96	3,07	3,65	2,91	3,42	0,96	3,46	4,04	3,31	3,81	1,36	6,12	5,23
8,0 x 90	60	2,40	5,23	1,13	2,79	-	-	0,96	3,07	3,65	2,91	3,42	-	-	-	-	-	1,36	6,33	5,45
8,0 x 100	60	2,40	5,23	1,13	2,79	2,42	9,87	1,09	3,44	4,22	3,26	3,90	1,10	4,05	4,83	3,87	4,51	1,36	6,33	5,45
8,0 x 120	80	3,20	6,98	1,13	2,79	2,42	9,87	1,09	3,44	4,22	3,26	3,90	1,10	4,48	5,27	4,31	4,94	1,36	6,77	5,89
8,0 x 140	80	3,20	6,98	1,13	2,79	2,42	9,87	1,09	3,90	4,25	3,63	3,90	1,10	4,94	5,30	4,67	4,94	1,36	6,77	5,89
8,0 x 160	80	3,20	6,98	1,13	2,79	2,42	9,87	1,09	3,90	4,25	3,63	3,90	1,10	4,94	5,30	4,67	4,94	1,36	6,77	5,89
8,0 x 180	100	4,00	8,72	1,13	2,79	2,42	9,87	1,09	3,90	4,25	3,63	3,90	1,10	5,38	5,73	5,11	5,38	1,36	7,21	6,32
8,0 x 200	100	4,00	8,72	1,13	2,79	2,42	9,87	1,09	3,90	4,25	3,63	3,90	1,10	5,38	5,73	5,11	5,38	1,36	7,21	6,32
8,0 x 220	100	4,00	8,72	1,13	2,79	2,42	9,87	1,09	3,90	4,25	3,63	3,90	1,10	5,38	5,73	5,11	5,38	1,36	7,21	6,32
8,0 x 240	100	4,00	8,72	1,13	2,79	2,42	9,87	1,09	3,90	4,25	3,63	3,90	1,10	5,38	5,73	5,11	5,38	1,36	7,21	6,32
8,0 x 260	100	4,00	8,72	1,13	2,79	2,42	9,87	1,09	3,90	4,25	3,63	3,90	1,10	5,38	5,73	5,11	5,38	1,36	7,21	6,32
8,0 x 280	100	4,00	8,72	1,13	2,79	2,42	9,87	1,09	3,90	4,25	3,63	3,90	1,10	5,38	5,73	5,11	5,38	1,36	7,21	6,32
8,0 x 300	100	4,00	8,72	1,13	2,79	2,42	9,87	1,09	3,90	4,25	3,63	3,90	1,10	5,38	5,73	5,11	5,38	1,36	7,21	6,32
8,0 x 320	100	4,00	8,72	1,13	2,79	2,42	9,87	1,09	3,90	4,25	3,63	3,90	1,10	5,38	5,73	5,11	5,38	1,36	7,21	6,32
8,0 x 340	100	4,00	8,72	1,13	2,79	2,42	9,87	1,09	3,90	4,25	3,63	3,90	1,10	5,38	5,73	5,11	5,38	1,36	7,21	6,32
8,0 x 360	100	4,00	8,72	1,13	2,79	2,42	9,87	1,09	3,90	4,25	3,63	3,90	1,10	5,38	5,73	5,11	5,38	1,36	7,21	6,32
8,0 x 380	100	4,00	8,72	1,13	2,79	2,42	9,87	1,09	3,90	4,25	3,63	3,90	1,10	5,38	5,73	5,11	5,38	1,36	7,21	6,32
8,0 x 400	100	4,00	8,72	1,13	2,79	2,42	9,87	1,09	3,90	4,25	3,63	3,90	1,10	5,38	5,73	5,11	5,38	1,36	7,21	6,32
8,0 x 420	100	4,00	8,72	1,13	2,79	-	-	1,09	3,90	4,25	3,63	3,90	-	-	-	-	-	1,36	7,21	6,32
8,0 x 440	100	4,00	8,72	1,13	2,79	-	-	1,09	3,90	4,25	3,63	3,90	-	-	-	-	-	1,36	7,21	6,32
8,0 x 450	100	4,00	8,72	-	-	2,42	9,87	-	-	-	-	-	1,10	5,38	5,73	5,11	5,38	1,36	7,21	6,32
8,0 x 460	100	4,00	8,72	1,13	2,79	-	-	1,09	3,90	4,25	3,63	3,90	-	-	-	-	-	1,36	7,21	6,32
8,0 x 480	100	4,00	8,72	1,13	2,79	-	-	1,09	3,90	4,25	3,63	3,90	-	-	-	-	-	1,36	7,21	6,32
8,0 x 500	100	4,00	8,72	1,13	2,79	2,42	9,87	1,09	3,90	4,25	3,63	3,90	1,10	5,38	5,73	5,11	5,38	1,36	7,21	6,32

Notes:

RAPID® Komprex

schmid schrauben hainfeld

Characteristic		Unit	Ø 10,0
Head diameter	Countersunk head	d_k [mm]	18,5
	Washer head	d_k [mm]	27
Core diameter		d_i [mm]	6,2
Shaft diameter		d_s [mm]	7,1
Drive	Countersunk head	TX	40
	Washer head	TX	50
Tensile load		$f_{tens,k}$ [kN]	35,0
Yield moment		$M_{y,k}$ [Nm]	33,6

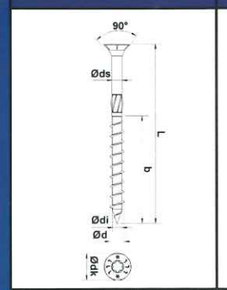
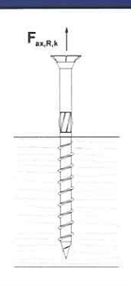
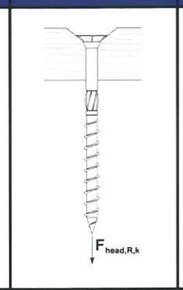
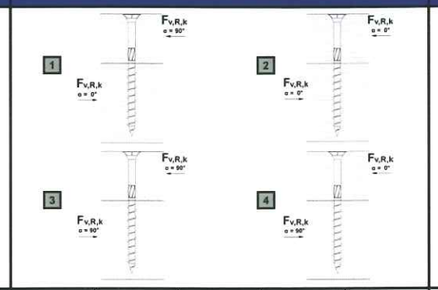
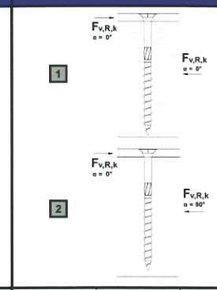
Dimensions		Extraction resistance		Head traction resistance				Wood - wood shearing									Steel - wood shearing		
				Countersunk head		Washer head		Countersunk head					Washer head						
d x L [mm]	b [mm]	zul. N_z [kN]	$F_{ax,R,k}$ [kN]	zul. N_z [kN]	$F_{head,R,k}$ [kN]	zul. N_z [kN]	$F_{head,R,k}$ [kN]	zul. N [kN]	1. $F_{v,R,k}$ [kN]	2. $F_{v,R,k}$ [kN]	3. $F_{v,R,k}$ [kN]	4. $F_{v,R,k}$ [kN]	zul. N [kN]	1. $F_{v,R,k}$ [kN]	2. $F_{v,R,k}$ [kN]	3. $F_{v,R,k}$ [kN]	4. $F_{v,R,k}$ [kN]	zul. N [kN]	1. $F_{v,R,k}$ [kN]	2. $F_{v,R,k}$ [kN]
								α=0°...90°	α_{AD}=90° α_{ET}=0°	α=0°	α=90°	α_{AD}=0° α_{ET}=90°	α=0°...90°	α_{AD}=90° α_{ET}=0°	α=0°	α=90°	α_{AD}=0° α_{ET}=90°	α=0°...90°	α=0°	α=90°
Ø 10,0																				
10,0 x 80	50	2,50	5,50	1,71	4,18	-	-	a)	a)	a)	a)	a)	-	-	-	-	-	2,13	8,15	6,91
10,0 x 100	60	3,00	6,60	1,71	4,18	3,65	10,57	1,60	4,50	5,49	4,27	5,14	1,60	5,10	6,10	4,87	5,75	2,13	8,43	7,18
10,0 x 120	80	4,00	8,80	1,71	4,18	3,65	10,57	1,60	4,50	5,49	4,27	5,14	1,60	5,65	6,65	5,42	6,30	2,13	8,98	7,73
10,0 x 140	80	4,00	8,80	1,71	4,18	3,65	10,57	1,70	5,33	5,84	4,96	5,33	1,70	6,49	6,99	6,11	6,49	2,13	8,98	7,73
10,0 x 160	100	5,00	11,00	1,71	4,18	3,65	10,57	1,70	5,33	5,84	4,96	5,33	1,70	6,93	7,43	6,55	6,93	2,13	9,53	8,28
10,0 x 180	100	5,00	11,00	1,71	4,18	3,65	10,57	1,70	5,33	5,84	4,96	5,33	1,70	6,93	7,43	6,55	6,93	2,13	9,53	8,28
10,0 x 200	100	5,00	11,00	1,71	4,18	3,65	10,57	1,70	5,33	5,84	4,96	5,33	1,70	6,93	7,43	6,55	6,93	2,13	9,53	8,28
10,0 x 220	100	5,00	11,00	1,71	4,18	3,65	10,57	1,70	5,33	5,84	4,96	5,33	1,70	6,93	7,43	6,55	6,93	2,13	9,53	8,28
10,0 x 240	100	5,00	11,00	1,71	4,18	3,65	10,57	1,70	5,33	5,84	4,96	5,33	1,70	6,93	7,43	6,55	6,93	2,13	9,53	8,28
10,0 x 260	100	5,00	11,00	1,71	4,18	3,65	10,57	1,70	5,33	5,84	4,96	5,33	1,70	6,93	7,43	6,55	6,93	2,13	9,53	8,28
10,0 x 280	100	5,00	11,00	1,71	4,18	3,65	10,57	1,70	5,33	5,84	4,96	5,33	1,70	6,93	7,43	6,55	6,93	2,13	9,53	8,28
10,0 x 300	100	5,00	11,00	1,71	4,18	3,65	10,57	1,70	5,33	5,84	4,96	5,33	1,70	6,93	7,43	6,55	6,93	2,13	9,53	8,28
10,0 x 320	120	6,00	13,20	1,71	4,18	3,65	10,57	1,70	5,33	5,84	4,96	5,33	1,70	6,93	7,43	6,55	6,93	2,13	10,08	8,83
10,0 x 340	120	6,00	13,20	1,71	4,18	3,65	10,57	1,70	5,33	5,84	4,96	5,33	1,70	6,93	7,43	6,55	6,93	2,13	10,08	8,83
10,0 x 360	120	6,00	13,20	1,71	4,18	3,65	10,57	1,70	5,33	5,84	4,96	5,33	1,70	6,93	7,43	6,55	6,93	2,13	10,08	8,83
10,0 x 380	120	6,00	13,20	1,71	4,18	3,65	10,57	1,70	5,33	5,84	4,96	5,33	1,70	6,93	7,43	6,55	6,93	2,13	10,08	8,83
10,0 x 400	120	6,00	13,20	1,71	4,18	3,65	10,57	1,70	5,33	5,84	4,96	5,33	1,70	6,93	7,43	6,55	6,93	2,13	10,08	8,83
10,0 x 420	120	6,00	13,20	1,71	4,18	-	-	1,70	5,33	5,84	4,96	5,33	-	-	-	-	-	2,13	10,08	8,83
10,0 x 440	120	6,00	13,20	1,71	4,18	-	-	1,70	5,33	5,84	4,96	5,33	-	-	-	-	-	2,13	10,08	8,83
10,0 x 450	120	6,00	13,20	-	-	3,65	10,57	-	-	-	-	-	1,70	6,93	7,43	6,55	6,93	2,13	10,08	8,83
10,0 x 460	120	6,00	13,20	1,71	4,18	-	-	1,70	5,33	5,84	4,96	5,33	-	-	-	-	-	2,13	10,08	8,83
10,0 x 480	120	6,00	13,20	1,71	4,18	-	-	1,70	5,33	5,84	4,96	5,33	-	-	-	-	-	2,13	10,08	8,83
10,0 x 500	120	6,00	13,20	1,71	4,18	3,65	10,57	1,70	5,33	5,84	4,96	5,33	1,70	6,93	7,43	6,55	6,93	2,13	10,08	8,83

Notes:

HBS RAPID®

schmid schrauben hainfeld

Characteristic	Unit	Ø 12,0
Head diameter	d_k [mm]	20,0
Core diameter	d_1 [mm]	6,8
Shaft diameter	d_s [mm]	8,2
Drive	TX	40
Tensile load	$f_{tens,k}$ [kN]	42,0
Yield moment	$M_{y,k}$ [Nm]	46,9

Dimensions		Extraction resistance		Head traction resistance		Wood - wood shearing					Steel - wood shearing		
				Countersunk head		Countersunk head							
													
d x L [mm]	b [mm]	zul. N_z [kN]	$F_{ax,R,k}$ [kN]	zul. N_z [kN]	$F_{head,R,k}$ [kN]	zul. N [kN] α=0°...90°	1. $F_{v,R,k}$ [kN] α_{AD}=90° α_{ET}=0°	2. $F_{v,R,k}$ [kN] α=0°	3. $F_{v,R,k}$ [kN] α=90°	4. $F_{v,R,k}$ [kN] α_{AD}=0° α_{ET}=90°	zul. N [kN] α=0°...90°	1. $F_{v,R,k}$ [kN] α=0°	2. $F_{v,R,k}$ [kN] α=90°
Ø 12,0													
12,0 x 100	70	4,20	7,48	2,00	4,40	a)	a)	a)	a)	a)	3,06	10,53	8,87
12,0 x 120	84	5,04	8,97	2,00	4,40	a)	a)	a)	a)	a)	3,06	10,91	9,25
12,0 x 140	100	6,00	10,68	2,00	4,40	a)	a)	a)	a)	a)	3,06	11,34	9,68
12,0 x 160	100	6,00	10,68	2,00	4,40	a)	a)	a)	a)	a)	3,06	11,34	9,68
12,0 x 180	125	7,50	13,35	2,00	4,40	a)	a)	a)	a)	a)	3,06	12,00	10,34
12,0 x 200	125	7,50	13,35	2,00	4,40	a)	a)	a)	a)	a)	3,06	12,00	10,34
12,0 x 220	125	7,50	13,35	2,00	4,40	2,45	6,55	7,23	6,05	6,55	3,06	12,00	10,34
12,0 x 240	144	8,64	15,38	2,00	4,40	2,45	6,55	7,23	6,05	6,55	3,06	12,51	10,85
12,0 x 260	144	8,64	15,38	2,00	4,40	2,45	6,55	7,23	6,05	6,55	3,06	12,51	10,85
12,0 x 280	144	8,64	15,38	2,00	4,40	2,45	6,55	7,23	6,05	6,55	3,06	12,51	10,85
12,0 x 300	144	8,64	15,38	2,00	4,40	2,45	6,55	7,23	6,05	6,55	3,06	12,51	10,85
12,0 x 320	144	8,64	15,38	2,00	4,40	2,45	6,55	7,23	6,05	6,55	3,06	12,51	10,85
12,0 x 340	144	8,64	15,38	2,00	4,40	2,45	6,55	7,23	6,05	6,55	3,06	12,51	10,85
12,0 x 360	144	8,64	15,38	2,00	4,40	2,45	6,55	7,23	6,05	6,55	3,06	12,51	10,85
12,0 x 380	144	8,64	15,38	2,00	4,40	2,45	6,55	7,23	6,05	6,55	3,06	12,51	10,85
12,0 x 400	144	8,64	15,38	2,00	4,40	2,45	6,55	7,23	6,05	6,55	3,06	12,51	10,85

Notes:

Customising

We make it possible

YOUR CUSTOM-MADE FIXING

The screw you or your customer is looking for only exists as drawing? Or just as an idea? Special projects often requires special customised solutions. We develop and produce for you according to your drawing or your sample. Our machine park offers diverse production possibilities thus we can offer customising at optimized cost.

YOUR CUSTOM-MADE FINISHING

Together with our equipased partners we implement almost every surface finishing for your fixing elements.
Our surfaces „YellWin“, „BlueWin“ and „RedWin“ correspond to our economical concept as all RAPID surfaces are Cr(VI)-free.

YOUR CUSTOM-MADE TOOLS

Milling, turning, EDM, honing, quenching and tempering: Our possibilities in metalworking are diverse and technologically up-to-date. This means: all possibilities in construction. As precise as our screws we manufacture your customised tools: from prototyping to the end product, exactly according to your requirements. Profit on our versatile and flexible machine park!

YOUR CUSTOM-MADE PACKING

Turning a “Schmid branded screw” to a “customer branded screw”.
Packings with your logo at the wholesale, a well considered packing- and self service system at home improvement stores: This is how to generate label power out of Schmid Schrauben.

RAPID® SuperSenkFix

schmid schrauben hainfeld

SuperSenkFix head

End mill cutter

Coarse thread

Notch in the thread

Compactor tip

> Highest quality

> Innovative technology

> Made in AUSTRIA

Dimensions

6x80 to 10x400mm
further dimensions
to request

BlueWin 700+
Cr(VI) free

Detailed Info

RAPID® SuperSenkFix

Specially hardened, slide coating, BlueWin 700+

Tip

Patented compactor tip:
> Quicker bite for reduced fastening torque
> Reduced split effect
> No pre-drilling required

Thread

Coarse thread
> with sharp rolled flanks right to the tip for
> quicker screwing

Head geometry

> Innovative combination of a countersunk and washer head
> Easy tapping thanks to cutting cone ribs
> Suitable for fittings
> Clean screwing (no splintering and fraying of wood)
> Higher pull-through values

End mill cutter

> The friction part reduces screwing resistance.

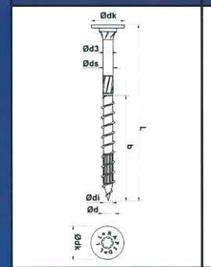
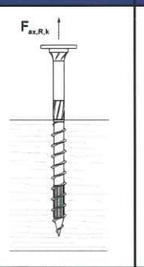
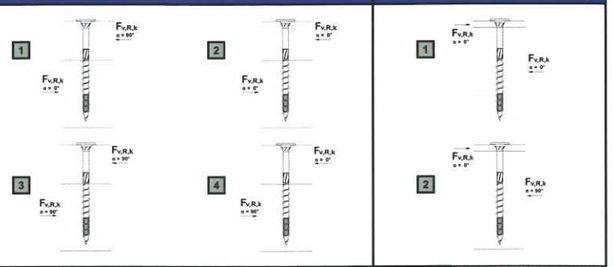
BlueWin 700+ Surface

> Greatly increased corrosion resistance: min. 700h resistance to red rust in salt spray test
> Cr(VI) free surface

RAPID® SuperSenkFix

schmid schrauben hainfeld

Characteristic	Unit	Ø 6,0	Ø 8,0	Ø 10,0
Head diameter	d_k [mm]	13,0	19,0	24,0
Shoulder diameter	d_3 [mm]	8,0	10,0	13,0
Core diameter	d_1 [mm]	4,0	5,3	6,3
Shaft diameter	d_s [mm]	4,3	5,9	7,1
Drive	TX	30	40	50
Tensile load	$f_{tens,k}$ [kN]	12,8	22,7	33,2
Yield moment	$M_{y,k}$ [Nm]	10,1	22,6	33,0

Dimensions		Extraction resistance		Head traction resistance		Wood - wood shearing					Steel - wood shearing		
													
d x L [mm]	b [mm]	zul. N_z [kN]	$F_{ax,R,k}$ [kN]	zul. N_z [kN]	$F_{head,R,k}$ [kN]	zul. N [kN] α=0°...90°	1. $F_{v,R,k}$ [kN] α_{AD}=90° α_{ET}=0°	2. $F_{v,R,k}$ [kN] α=0°	3. $F_{v,R,k}$ [kN] α=90°	4. $F_{v,R,k}$ [kN] α_{AD}=0° α_{ET}=90°	zul. N [kN] α=0°...90°	1. $F_{v,R,k}$ [kN] α=0°	2. $F_{v,R,k}$ [kN] α=90°
Ø 6,0													
6,0 x 80	48	1,44	3,74	0,85	2,79	0,61	2,13	2,13	2,13	2,13	0,77	3,25	3,25
6,0 x 100	48	1,44	3,74	0,85	2,79	0,61	2,13	2,13	2,13	2,13	0,77	3,25	3,25
6,0 x 120	70	2,10	5,46	0,85	2,79	0,61	2,33	2,33	2,33	2,33	0,77	3,68	3,68
6,0 x 140	70	2,10	5,46	0,85	2,79	0,61	2,33	2,33	2,33	2,33	0,77	3,68	3,68
6,0 x 160	70	2,10	5,46	0,85	2,79	0,61	2,33	2,33	2,33	2,33	0,77	3,68	3,68
6,0 x 180	70	2,10	5,46	0,85	2,79	0,61	2,33	2,33	2,33	2,33	0,77	3,68	3,68
6,0 x 200	70	2,10	5,46	0,85	2,79	0,61	2,33	2,33	2,33	2,33	0,77	3,68	3,68
Ø 8,0													
8,0 x 80	54	2,16	4,62	1,81	8,08	1,10	a)	a)	a)	a)	1,36	6,18	5,30
8,0 x 100	54	2,16	4,62	1,81	8,08	1,10	4,14	4,71	3,96	4,35	1,36	6,18	5,30
8,0 x 120	54	2,16	4,62	1,81	8,08	1,10	4,35	4,71	4,09	4,35	1,36	6,18	5,30
8,0 x 140	84	3,36	7,19	1,81	8,08	1,10	4,99	5,35	4,72	4,99	1,36	6,82	5,94
8,0 x 160	84	3,36	7,19	1,81	8,08	1,10	4,99	5,35	4,72	4,99	1,36	6,82	5,94
8,0 x 180	100	4,00	8,56	1,81	8,08	1,10	4,99	5,35	4,72	4,99	1,36	7,17	6,28
8,0 x 200	100	4,00	8,56	1,81	8,08	1,10	4,99	5,35	4,72	4,99	1,36	7,17	6,28
8,0 x 220	100	4,00	8,56	1,81	8,08	1,10	4,99	5,35	4,72	4,99	1,36	7,17	6,28
8,0 x 240	100	4,00	8,56	1,81	8,08	1,10	4,99	5,35	4,72	4,99	1,36	7,17	6,28
8,0 x 260	100	4,00	8,56	1,81	8,08	1,10	4,99	5,35	4,72	4,99	1,36	7,17	6,28
8,0 x 280	100	4,00	8,56	1,81	8,08	1,10	4,99	5,35	4,72	4,99	1,36	7,17	6,28
8,0 x 300	100	4,00	8,56	1,81	8,08	1,10	4,99	5,35	4,72	4,99	1,36	7,17	6,28
8,0 x 320	100	4,00	8,56	1,81	8,08	1,10	4,99	5,35	4,72	4,99	1,36	7,17	6,28
8,0 x 340	100	4,00	8,56	1,81	8,08	1,10	4,99	5,35	4,72	4,99	1,36	7,17	6,28
8,0 x 360	100	4,00	8,56	1,81	8,08	1,10	4,99	5,35	4,72	4,99	1,36	7,17	6,28
8,0 x 380	100	4,00	8,56	1,81	8,08	1,10	4,99	5,35	4,72	4,99	1,36	7,17	6,28
8,0 x 400	100	4,00	8,56	1,81	8,08	1,10	4,99	5,35	4,72	4,99	1,36	7,17	6,28
Ø 10,0													
10,0 x 120	60	3,00	5,70	2,88	8,76	1,70	5,67	6,17	5,30	5,67	2,13	8,14	6,91
10,0 x 140	60	3,00	5,70	2,88	8,76	1,70	5,67	6,17	5,30	5,67	2,13	8,14	6,91
10,0 x 160	100	5,00	9,50	2,88	8,76	1,70	6,62	7,12	6,25	6,62	2,13	9,09	7,86
10,0 x 180	100	5,00	9,50	2,88	8,76	1,70	6,62	7,12	6,25	6,62	2,13	9,09	7,86
10,0 x 200	100	5,00	9,50	2,88	8,76	1,70	6,62	7,12	6,25	6,62	2,13	9,09	7,86
10,0 x 220	100	5,00	9,50	2,88	8,76	1,70	6,62	7,12	6,25	6,62	2,13	9,09	7,86
10,0 x 240	100	5,00	9,50	2,88	8,76	1,70	6,62	7,12	6,25	6,62	2,13	9,09	7,86
10,0 x 260	100	5,00	9,50	2,88	8,76	1,70	6,62	7,12	6,25	6,62	2,13	9,09	7,86
10,0 x 280	100	5,00	9,50	2,88	8,76	1,70	6,62	7,12	6,25	6,62	2,13	9,09	7,86
10,0 x 300	120	6,00	11,40	2,88	8,76	1,70	6,62	7,12	6,25	6,62	2,13	9,56	8,33
10,0 x 350	120	6,00	11,40	2,88	8,76	1,70	6,62	7,12	6,25	6,62	2,13	9,56	8,33
10,0 x 400	120	6,00	11,40	2,88	8,76	1,70	6,62	7,12	6,25	6,62	2,13	9,56	8,33

Notes:

Chipping processes

Our machine park

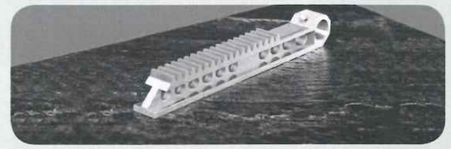
Our possibilities in metalworking are diverse and technologically up-to-date.
Use our versatile and flexible machine park!

Milling	Hermle C20 U	Hermle C22 U	MH500 E2	Maho 800
NC-swivel rotary table	Ø 280 mm	Ø 320 mm	800 x 360 mm	1050 x 620 mm
Table load	300 kg	300 kg	200 kg	
X travel	450 mm	450 mm	500 mm	800 mm
Y travel	450 mm	600 mm	400 mm	500 mm
Z travel	450 mm	330 mm	350 mm	600 mm

Honing	ML-2000
Dimension range	Manual stroke: 1,5 – 165 mm Automatic stroke: 1,5 – 101 mm Stroke length: 6,0 – 170 mm

EDM	Agie Innovation	Agie Integral
Table size	300 x 400 mm	300 x 400 mm

Wirecut EDM	Agie Cut Challenge 2
Processing	in water bath
max. workpiece dimensions L x B x H	750 x 550 x 150 mm
max. workpiece weight (without bath)	200 kg (450 kg)
X Travel	350 mm
Y Travel	250 mm
Z Travel	256 mm
Roughness Ra up to	0,3 mm (opt. 0,2 mm)
min. wire diameter	0,2 mm (opt. 0,1 mm)
max. angle at 100mm workpiece height	30°



Surface grinding	Elb SWH4ND	Elb Orion 1052 NPC-K	Jones & Shipman
Table size	200 x 450 mm	500 x 1000 mm	150 x 300 mm

Cylindrical grinding	Kellenberger
Tip height	175 mm
Tip width	1000 mm
max. grinding diameter	349 mm
max. workpiece weight between tips	80 kg

Turning	Okuma LT-200	Weiler E40 D3
Turning length	600 mm	1000 mm
Turning diameter	210 mm	435 mm
max. throughout in suction tube	65 mm	66 mm

Quenching and tempering	K3/1200C/S	B200/LG
Usable dimensions b x h x t	400 x 300 x 600 mm	520 x 600 x 650 mm
max. temperature	1300° C	900° C

RAPID® Dual

schmid schrauben hainfeld

Dual head

End mill cutter

Single thread

35°-Tip

> Highest quality

> Innovative technology

> Made in AUSTRIA

Dimensions

8x50 to 12x400mm

BlueWin CrVI free

Detailed Info

RAPID® Dual

Specially hardened, slide coating, BlueWin

Head geometry

> Patented cone underneath head for optimum centring when washers are used
> Head rests flat on metal with 90° screw connection
> Better force transmission with hex drive possible -
> The commercially available TX drive saves you time-consuming tool change

Thread/Tip

> Sharp rolled thread flanks for minimised blast effect and fast screwing-in
> 35° tip for fast bite
> No pre-drilling required

End mill cutter

> The friction part reduces screwing resistance.

Advantages compared to DIN 571 screw

> Higher extraction values
> Higher traction values
> Smaller penetration torque
> Higher hardness values
> Approved for constructional wooden structures according to ETA 12/0373

RAPID® Hardwood

Ready for the future today

schmid schrauben hainfeld

Milling pockets

New friction shaft

Single thread

Compactor tip

Dimensions

Stocked sizes:

Ø 8 x 120mm

Ø 8 x 160mm (also wafer head)

Ø 8 x 200mm

Ø 8 x 240mm

On request: Ø 8 x 60mm to Ø 8 x 240mm

BlueWin 700+

CrVI free

> No Pre-Drilling

> World first

> Made in AUSTRIA

Detailed Info

RAPID® Hardwood

Specially hardened, slide coating, BlueWin 700+

Straight friction shaft

The new patented friction section considerably reduces screw resistance:

> Less force required when screwing in

> Fast screwing

> Improved battery life of the drill/driver unit

Single thread

> Minimised blast effect

> Improved pull-out values

> Quicker screwing

Milling pockets

Underhead milling pockets for optimal countersink:

> Smooth

> Gentle on material

> Also ideal for fittings

New compression tip

Improved patented tip:

> Improved bite in of the screw

> Lower splitting effect

Highlights of the product

RAPID® Hardwood is the first to offer a hardwood screw fitting without pre-drilling:

> One step operation saves time

> ETA approval

ETA-12/0373

> Low impact on materials

> Higher core diameter - so that the tensile strength for 8mm is comparable with conventional 10mm wood screw

RAPID® Hardwood

schmid schrauben hainfeld

Characteristic	Unit	Ø 8,0
Head diameter*)	d_k [mm]	15,0
Core diameter	d_i [mm]	6,1
Shaft diameter	d_s [mm]	6,4
Drive	TX	40
Tensile load	$f_{tens,k}$ [kN]	32,8
Yield moment	$M_{y,k}$ [Nm]	42,8

*) Values for further head geometries are available on request

Values are applied for construction beech (density ρk: 740 kg/m³)

Dimensions		Extraction resistance		Head traction resistance		Wood - wood shearing					Steel - wood shearing		
d x L [mm]	b [mm]	zul. N_z [kN]	$F_{ax,R,k}$ [kN]	zul. N_z [kN]	$F_{head,R,k}$ [kN]	zul. N [kN] α=0°…90°	1. $F_{v,R,k}$ [kN] α_{AD}=90° α_{ET}=0°	2. $F_{v,R,k}$ [kN] α=0°	3. $F_{v,R,k}$ [kN] α=90°	4. $F_{v,R,k}$ [kN] α_{AD}=0° α_{ET}=90°	zul. N [kN] α=0°…90°	1. $F_{v,R,k}$ [kN] α=0°	2. $F_{v,R,k}$ [kN] α=90°
Ø 8,0													
8,0 x 60	50	-	-	-	9,47	-	a)	a)	a)	a)	-	15,06	14,96
8,0 x 80	70	-	-	-	9,47	-	a)	a)	a)	a)	-	17,06	16,96
8,0 x 100	70	-	28,06	-	9,47	-	8,37	8,45	8,35	8,42	-	17,06	16,96
8,0 x 120	100	-	32,80	-	9,47	-	a)	a)	a)	a)	-	18,25	18,15
8,0 x 140	100	-	32,80	-	9,47	-	9,44	9,47	9,40	9,44	-	18,25	18,15
8,0 x 160	100	-	32,80	-	9,47	-	9,44	9,47	9,40	9,44	-	18,25	18,15
8,0 x 180	100	-	32,80	-	9,47	-	9,44	9,47	9,40	9,44	-	18,25	18,15
8,0 x 200	100	-	32,80	-	9,47	-	9,44	9,47	9,40	9,44	-	18,25	18,15
8,0 x 220	100	-	32,80	-	9,47	-	9,44	9,47	9,40	9,44	-	18,25	18,15
8,0 x 240	100	-	32,80	-	9,47	-	9,44	9,47	9,40	9,44	-	18,25	18,15

Values are applied for solid hardwood (density ρk: 625 kg/m³)

Dimensions		Extraction resistance		Head traction resistance		Wood - wood shearing					Steel - wood shearing		
d x L [mm]	b [mm]	zul. N_z [kN]	$F_{ax,R,k}$ [kN]	zul. N_z [kN]	$F_{head,R,k}$ [kN]	zul. N [kN] α=0°…90°	1. $F_{v,R,k}$ [kN] α_{AD}=90° α_{ET}=0°	2. $F_{v,R,k}$ [kN] α=0°	3. $F_{v,R,k}$ [kN] α=90°	4. $F_{v,R,k}$ [kN] α_{AD}=0° α_{ET}=90°	zul. N [kN] α=0°…90°	1. $F_{v,R,k}$ [kN] α=0°	2. $F_{v,R,k}$ [kN] α=90°
Ø 8,0													
8,0 x 60	50	-	-	-	9,47	-	a)	a)	a)	a)	-	13,11	12,97
8,0 x 80	70	-	-	-	9,47	-	a)	a)	a)	a)	-	14,65	14,56
8,0 x 100	70	-	21,67	-	9,47	-	7,64	7,70	7,62	7,68	-	14,65	14,56
8,0 x 120	100	-	30,96	-	9,47	-	a)	a)	a)	a)	-	16,98	16,89
8,0 x 140	100	-	30,96	-	9,47	-	8,63	8,71	8,61	8,69	-	16,98	16,89
8,0 x 160	100	-	30,96	-	9,47	-	8,63	8,71	8,61	8,69	-	16,98	16,89
8,0 x 180	100	-	30,96	-	9,47	-	8,63	8,71	8,61	8,69	-	16,98	16,89
8,0 x 200	100	-	30,96	-	9,47	-	8,63	8,71	8,61	8,69	-	16,98	16,89
8,0 x 220	100	-	30,96	-	9,47	-	8,63	8,71	8,61	8,69	-	16,98	16,89
8,0 x 240	100	-	30,96	-	9,47	-	8,63	8,71	8,61	8,69	-	16,98	16,89

Advantages and Special Features

Schmid-ETA 12/0373

CORROSION SERVICE CLASS 3

Hot-dip galvanised and stainless steel fasteners are approved for class 3 use and may therefore be used for façades or fences, for example.

PRE-DRILLED HARDWOOD

Our range of screws may also be used for hardwoods with a density > 540kg/m³ (but only when pre-drilled).

NON PRE-DRILLED HARDWOOD

Our RAPID® Hardwood screw sets new standards in the market and for the first time offers a screw fitting for hardwood WITHOUT pre-drilling.

INNOVATIVE HEAD DESIGN

The flat washer hexagon head offers many advantages during application, for example, when working with an impact driver.

OPTIMISED THREAD FORMS

New developments in geometry for the shank, thread and tip significantly reduce the screw-in resistance and ensure even faster screw driving.

IMPROVED DRIVE

The optimised “T drive” facilitates screwing, as the special shape of the bit guides the screw more effectively, therefore making it easier to screw with one hand.

STAINLESS STEEL SCREWS

Screws in A2 or A4 stainless steel are fully corrosion resistant and are now approved for all outdoor applications such as patios, balconies, façades or railings.

HIGHER MECHANICAL STRENGTH VALUES

The significantly higher pull-through values of the RAPID® SuperSenkFix screw, together with double the values for slip modulus, offer new cost saving opportunities from static calculations.

MORE APPROVED AREAS OF APPLICATION

Our premium screws have been recently approved for use as transverse tensile or support reinforcement for beam breakthroughs, etc. Furthermore, our screws can be used in beams for shear reinforcement of timber splits.

RAPID® T-Con

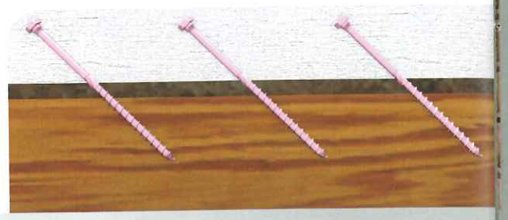
schmid schrauben hainfeld

Dual head

Screw-in marker

Coarse thread

Follower thread



Highest quality for
timber-concrete composite systems
Made in AUSTRIA

Dimensions

> 8 x 155mm
> 8 x 205mm
> further dimensions on request (up to 8 x 300 mm)

RedWin

Detailed Info

RAPID® T-Con

Specially hardened, slide coating, RedWin

Head geometry

> Better force transmission with hex drive possible - important for especially hard wood used for the refurbishment of old buildings
> The commercially available TX drive (T40) saves you time-consuming tool change

Screw-in marker

> The friction part serves as a handy marker for the residual length which has to protrude from the wood.

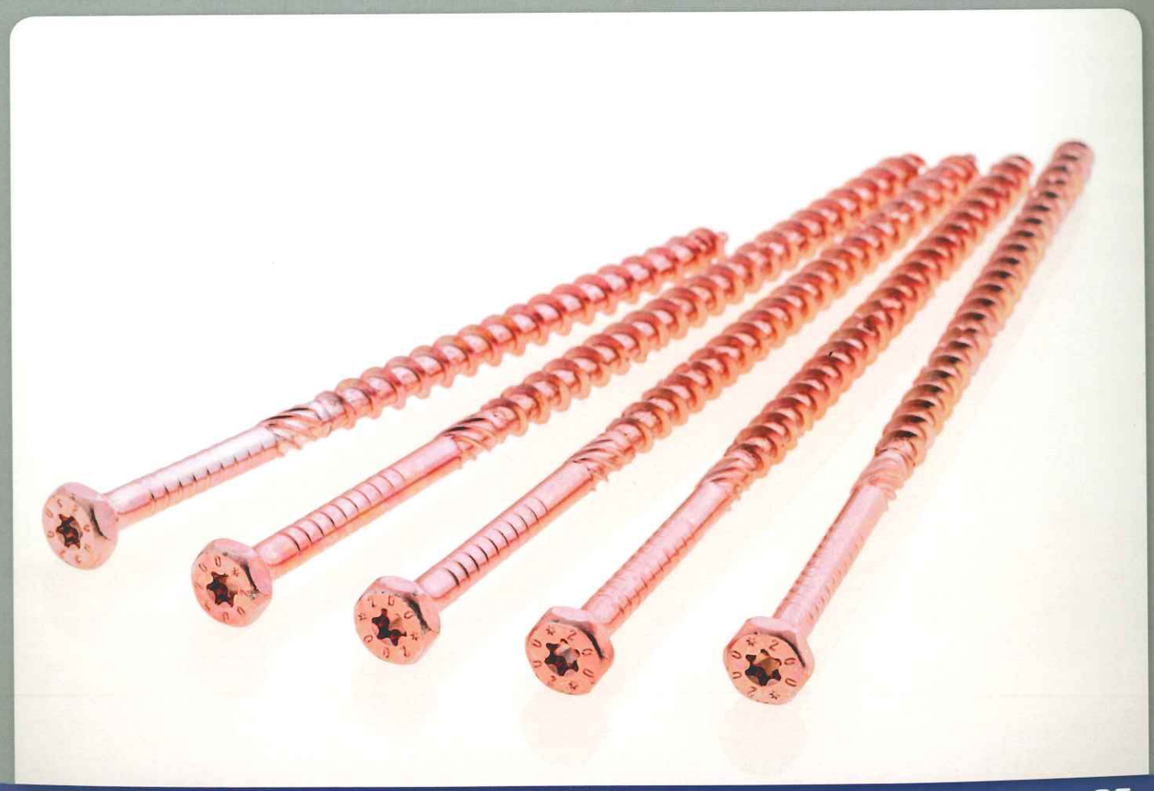
Thread/Tip

Coarse thread including the patented follower thread, rolled out to the tip:
> Quicker screwing
> Minimised blast effect
> Lower torque during fastening
> 35° tip for fast bite - especially with 45° tilt

RedWin Surface

improved surface coating

> improved corrosion restistance
> special purpose - special colour: RedWin screws distinctively belong to the timber-concrete composite system



Calculation software

for timber-concrete composite systems

Advantages of the timber-concrete composite system

- increased load capacity with low construction height

- Especially in old buildings, the existing ceiling can still be used -> more economical and cost-effective

- **Compared to a pure timber ceiling:**
  > Higher load capacity and stiffness
  > Fire protection: The danger of fire propagation is significantly decreased
  > Ceiling plate made of concrete reduces vibrations
  > Noise protection
  > Thermal protection

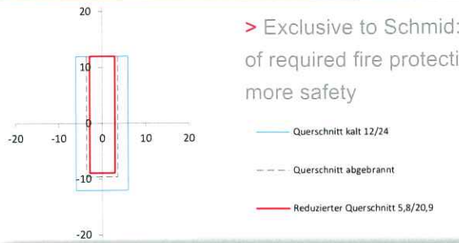
- **Compared to a pure concrete ceiling**
  > Better eco-balance: 2/3 of the wood is already installed
  > Lower weight
  > Can be deconstructed: Life cycle and sustainability are taken into account

Vibration classes and behaviour

> Exclusive to Schmid: Consideration of vibration behaviour – for more comfort and convenience in living areas

> Exclusive to Schmid: different vibration classes for residential and industrial buildings

Fire protection classes

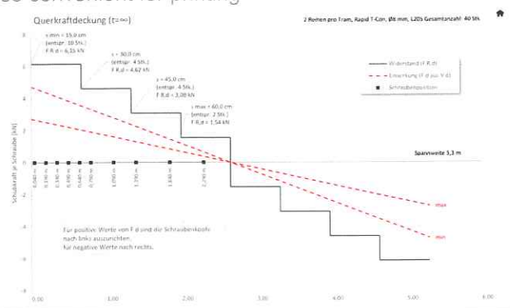


> Exclusive to Schmid: Consideration of required fire protection classes for more safety

Flexible parameter settings & Clear visual representation

> Flexible parameter settings for your individual projects and simultaneous rapid checking of the effect a parameter change may have on the project:
- ceiling openings for chimneys or stairways
- input of point load
- extension to include CLT (cross laminated and glue laminated timber)

> Clear visual representation of the screw arrangement - also convenient for printing



Z-9.1-845

Calculation service
Our technicians are available to answer questions regarding your individual project
info@schrauben.at

Care4Sales Programme

SELLING POWER: IMPROVE

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

- **Sales tools by us for you**
  Branded with your company logo and design, we provide professional sales tools: from marketing materials of all kinds through product folders to the website.
- **Special projects: our experts provide support for you**
  With leading international expertise, we guide you with customer support on topics such as fire prevention, edge distances, protection against corrosion, and much more.
- **Seminars, tutorials, training courses**
  The (added) value from Schmid Schrauben only becomes a knock-out when your sales team knows about it. With tutorials, factory tours and hands-on training on your premises or ours, we bring your advisers up to date (in our "Schmid Academy"). Special seminars with our partners are available, webinars on a broad range of topics are in the pipeline.
- **Direct enquiries**
  We are happy to handle direct enquiries between retailers and Schmid Schrauben regarding stock levels.

BRANDS: DEVELOP

From a "Schmid brand screw", we also make a "customer brand screw".

- **Technically customised product development**
  With specific geometry, surfaces, etc. Our know-how supports you through all phases of new product development.
- **Labels**
  Customer-specific, e.g. with your logo
- **Packaging/box**
  With customer-specific printing – even for small volumes!!

IMAGE: STRENGTHEN

We strengthen more than just the Schmid Schrauben brand with innovative services. We also want to strengthen your brand.

- **Service & Software**
  You indicate planning and commercial expertise with no detours: with our calculation service or the calculation software (timber-concrete, roof-insulating) from Schmid Schrauben as well as with our quality products for objective quality comparisons on the market.
- **Quick & reliable delivery**
  Also through networking with your shipping department.
- **Marketing & advertising**
  Schmid Schrauben's consistent marketing and PR work creates trust: in our products. In us. And therefore in you.

INCREASE: ADDED VALUE

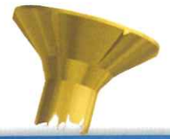
In comparison with pure dealers, we are able to offer our customers a wide range of services.

- **Production:**
  We – and therefore you – have unlimited possibilities available in manufacturing: from rapid prototyping in in-house tool making through manufacturing of custom parts in small batch production to outsourced tempering and hot-dip galvanising.
- **Quality**
  With us, every nuance is measurable and feasible. Our spectrum stretches from material testing, screw-in testing on an in-house test bench and measurement of coating thicknesses and friction coefficients through corrosion testing and bracing tests to chemical analysis techniques.
- **Procurement:**
  With us, you benefit from S-TOQ for non-production parts (trade channels) as well as from direct deliveries to end customers.

StarDrive GPR®

schmid schrauben hainfeld

Milling fins



End mill cutter

Coarse thread

Follower thread

Alternative head shape

yellow galvanised

BlueWin

Stainless Steel

Dimensions

4x30 to 10x400mm
Stainless Steel:
8x120 and 8x160 mm
(further dimensions on request)

> Highest quality

> Innovative technology

> Made in AUSTRIA

Detailed Info

StarDrive GPR®

Specially hardened, slide coating, yellow galvanised, BlueWin, Stainless Steel

Thread, tip

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

> Quicker screwing
> Minimised blast effect
> Lower torque during fastening
> No pre-drilling required

End mill cutter

The friction part reduces screwing resistance.

Underhead

Underhead fins for optimal countersink:

> Smooth
> Gentle on material

Alternative head shape: washer head

Thanks to the washer cap head, no separate use of washers is required:

> Shorter assembly times
> Improved pull-through values

advantages of stainless steel

> absolute corrosion resistant
> ideal for every application outdoors for example terraces, balconies, facades, fences or railings

StarDrive GPR®

schmid schrauben hainfeld

Characteristic		Unit	Ø 4,0	Ø 4,5	Ø 5,0	Ø 6,0
Head diameter	Countersunk head	d_k [mm]	8,0	9,0	10,0	12,0
	Washer head	d_k [mm]	-	-	-	14,0
Core diameter		d_1 [mm]	2,6	2,8	3,3	4,0
Shaft diameter		d_s [mm]	2,8	3,2	3,5	4,3
Drive	Countersunk head	TX	20	20	25	30
	Washer head	TX	-	-	-	-
Tensile load	Steel	$f_{tens,k}$ [kN]	5,0	5,8	8,8	12,8
	Stainless Steel	$f_{tens,k}$ [kN]	-	-	-	-
Yield moment	Steel	$M_{y,k}$ [Nm]	3,2	4,9	6,5	10,1
	Stainless Steel	$M_{y,k}$ [Nm]	-	-	-	-

Dimensions		Extraction resistance		Head traction resistance				Wood - wood shearing										Steel - wood shearing		
				Countersunk head		Washer head		Countersunk head					Washer head							
d x L [mm]	b [mm]	zul. N_z [kN]	$F_{ax,R,k}$ [kN]	zul. N_z [kN]	$F_{head,R,k}$ [kN]	zul. N_z [kN]	$F_{head,R,k}$ [kN]	zul. N [kN]	1. $F_{v,R,k}$ [kN]	2. $F_{v,R,k}$ [kN]	3. $F_{v,R,k}$ [kN]	4. $F_{v,R,k}$ [kN]	zul. N [kN]	1. $F_{v,R,k}$ [kN]	2. $F_{v,R,k}$ [kN]	3. $F_{v,R,k}$ [kN]	4. $F_{v,R,k}$ [kN]	zul. N [kN]	1. $F_{v,R,k}$ [kN]	2. $F_{v,R,k}$ [kN]
								α=0°...90°	α_{AD}=90° α_{ET}=0°	α=0°	α=90°	α_{AD}=0° α_{ET}=90°	α=0°...90°	α_{AD}=90° α_{ET}=0°	α=0°	α=90°	α_{AD}=0° α_{ET}=90°	α=0°...90°	α=0°	α=90°
Ø 4,0																				
4,0 x 40	30	0,60	1,78	0,32	1,09	-	-	a)	a)	a)	a)	a)	-	-	-	-	-	0,34	1,57	1,57
4,0 x 50	30	0,60	1,78	0,32	1,09	-	-	a)	a)	a)	a)	a)	-	-	-	-	-	0,34	1,57	1,57
4,0 x 60	35	0,70	2,07	0,32	1,09	-	-	0,27	1,06	1,06	1,06	1,06	-	-	-	-	-	0,34	1,64	1,64
4,0 x 70	35	0,70	2,07	0,32	1,09	-	-	0,27	1,07	1,07	1,07	1,07	-	-	-	-	-	0,34	1,64	1,64
Ø 4,5																				
4,5 x 50	29	0,65	1,80	0,41	1,43	-	-	a)	a)	a)	a)	a)	-	-	-	-	-	0,43	1,91	1,91
4,5 x 60	29	0,65	1,80	0,41	1,43	-	-	0,34	1,35	1,35	1,35	1,35	-	-	-	-	-	0,43	1,91	1,91
4,5 x 70	39	0,88	2,42	0,41	1,43	-	-	0,34	1,38	1,38	1,38	1,38	-	-	-	-	-	0,43	2,06	2,06
4,5 x 80	39	0,88	2,42	0,41	1,43	-	-	0,34	1,38	1,38	1,38	1,38	-	-	-	-	-	0,43	2,06	2,06
Ø 5,0																				
5,0 x 50	30	0,75	2,04	0,50	1,46	-	-	a)	a)	a)	a)	a)	-	-	-	-	-	0,53	2,25	2,25
5,0 x 60	30	0,75	2,04	0,50	1,46	-	-	0,43	1,46	1,46	1,46	1,46	-	-	-	-	-	0,53	2,25	2,25
5,0 x 70	37	0,93	2,52	0,50	1,46	-	-	0,43	1,58	1,58	1,58	1,58		-	-	-	-	0,53	2,37	2,37
5,0 x 80	37	0,93	2,52	0,50	1,46	-	-	0,43	1,59	1,59	1,59	1,59		-	-	-	-	0,53	2,37	2,37
5,0 x 90	55	1,38	3,74	0,50	1,46	-	-	0,43	1,59	1,59	1,59	1,59		-	-	-	-	0,53	2,67	2,67
5,0 x 100	55	1,38	3,74	0,50	1,46	-	-	0,43	1,59	1,59	1,59	1,59		-	-	-	-	0,53	2,67	2,67
5,0 x 120	55	1,38	3,74	0,50	1,46	-	-	0,43	1,59	1,59	1,59	1,59		-	-	-	-	0,53	2,67	2,67
Ø 6,0																				
6,0 x 60	36	1,08	2,81	0,72	2,10	0,98	3,27	0,58	1,76	1,76	1,76	1,76	0,61	1,94	1,94	1,94	1,94	0,77	3,01	3,01
6,0 x 70	36	1,08	2,81	0,72	2,10	-	-	0,61	1,98	1,98	1,98	1,98	-	-	-	-	-	0,77	3,01	3,01
6,0 x 80	48	1,44	3,74	0,72	2,10	0,98	3,27	0,61	1,96	1,96	1,96	1,96	0,61	2,25	2,25	2,25	2,25	0,77	3,25	3,25
6,0 x 90	48	1,44	3,74	0,72	2,10	-	-	0,61	1,96	1,96	1,96	1,96	-	-	-	-	-	0,77	3,25	3,25
6,0 x 100	48	1,44	3,74	0,72	2,10	0,98	3,27	0,61	2,16	2,16	2,16	2,16	0,61	2,45	2,45	2,45	2,45	0,77	3,25	3,25
6,0 x 110	64	1,92	4,99	0,72	2,10	-	-	0,61	2,16	2,16	2,16	2,16	-	-	-	-	-	0,77	3,56	3,56
6,0 x 120	64	1,92	4,99	0,72	2,10	0,98	3,27	0,61	2,16	2,16	2,16	2,16	0,61	2,45	2,45	2,45	2,45	0,77	3,56	3,56
6,0 x 130	64	1,92	4,99	0,72	2,10	-	-	0,61	2,16	2,16	2,16	2,16	-	-	-	-	-	0,77	3,56	3,56
6,0 x 140	64	1,92	4,99	0,72	2,10	0,98	3,27	0,61	2,16	2,16	2,16	2,16	0,61	2,45	2,45	2,45	2,45	0,77	3,56	3,56
6,0 x 150	64	1,92	4,99	0,72	2,10	-	-	0,61	2,16	2,16	2,16	2,16	-	-	-	-	-	0,77	3,56	3,56
6,0 x 160	64	1,92	4,99	0,72	2,10	0,98	3,27	0,61	2,16	2,16	2,16	2,16	0,61	2,45	2,45	2,45	2,45	0,77	3,56	3,56
6,0 x 180	64	1,92	4,99	0,72	2,10	0,98	3,27	0,61	2,16	2,16	2,16	2,16	0,61	2,45	2,45	2,45	2,45	0,77	3,56	3,56
6,0 x 200	64	1,92	4,99	0,72	2,10	0,98	3,27	0,61	2,16	2,16	2,16	2,16	0,61	2,45	2,45	2,45	2,45	0,77	3,56	3,56
6,0 x 220	64	1,92	4,99	0,72	2,10	-	-	0,61	2,16	2,16	2,16	2,16	-	-	-	-	-	0,77	3,56	3,56
6,0 x 240	64	1,92	4,99	0,72	2,10	-	-	0,61	2,16	2,16	2,16	2,16	-	-	-	-	-	0,77	3,56	3,56
6,0 x 260	64	1,92	4,99	0,72	2,10	-	-	0,61	2,16	2,16	2,16	2,16	-	-	-	-	-	0,77	3,56	3,56
6,0 x 280	64	1,92	4,99	0,72	2,10	-	-	0,61	2,16	2,16	2,16	2,16	-	-	-	-	-	0,77	3,56	3,56
6,0 x 300	64	1,92	4,99	0,72	2,10	-	-	0,61	2,16	2,16	2,16	2,16	-	-	-	-	-	0,77	3,56	3,56
Ø 8,0																				
8,0 x 80	54	2,16	4,62	1,13	2,79	2,00	7,04	a)	a)	a)	a)	a)	a)	a)	a)	a)	a)	1,36	6,18	5,29
8,0 x 100	54	2,16	4,62	1,13	2,79	2,00	7,04	1,10	3,68	4,25	3,50	3,89	1,10	4,14	4,70	3,95	4,35	1,36	6,18	5,29
8,0 x 120	54	2,16	4,62	1,13	2,79	2,00	7,04	1,10	3,68	4,25	3,50	3,89	1,10	4,35	4,70	4,08	4,35	1,36	6,18	5,29
8,0 x 140	84	3,36	7,19	1,13	2,79	2,00	7,04	1,10	3,89	4,25	3,62	3,89	1,10	4,95	5,31	4,69	4,95	1,36	6,82	5,94

StarDrive GPR®

schmid schrauben hainfeld

Characteristic		Unit	Ø 8,0	Ø 10,0
Head diameter	Countersunk head	d_k [mm]	15,0	18,5
	Washer head	d_k [mm]	20,0	25,0
Core diameter		d_1 [mm]	5,3	6,2
Shaft diameter		d_s [mm]	5,9	7,1
Drive	Countersunk head	TX	40	40
	Washer head	TX	40	50
Tensile load	Steel	$f_{tens,k}$ [kN]	22,7	33,2
	Stainless Steel	$f_{tens,k}$ [kN]	16,0	-
Yield moment	Steel	$M_{y,k}$ [Nm]	22,6	33,0
	Stainless Steel	$M_{y,k}$ [Nm]	16,6	-

Dimensions		Extraction resistance		Head traction resistance				Wood - wood shearing										Steel - wood shearing		
				Countersunk head		Washer head		Countersunk head					Washer head							
d x L [mm]	b [mm]	zul. N_z [kN]	$F_{ax,R,k}$ [kN]	zul. N_z [kN]	$F_{head,R,k}$ [kN]	zul. N_z [kN]	$F_{head,R,k}$ [kN]	zul. N [kN]	1. $F_{v,R,k}$ [kN]	2. $F_{v,R,k}$ [kN]	3. $F_{v,R,k}$ [kN]	4. $F_{v,R,k}$ [kN]	zul. N [kN]	1. $F_{v,R,k}$ [kN]	2. $F_{v,R,k}$ [kN]	3. $F_{v,R,k}$ [kN]	4. $F_{v,R,k}$ [kN]	zul. N [kN]	1. $F_{v,R,k}$ [kN]	2. $F_{v,R,k}$ [kN]
								α=0°...90°	α_{AD}=90° α_{ET}=0°	α=0°	α=90°	α_{AD}=0° α_{ET}=90°	α=0°...90°	α_{AD}=90° α_{ET}=0°	α=0°	α=90°	α_{AD}=0° α_{ET}=90°	α=0°...90°	α=0°	α=90°
Ø 8,0																				
8,0 x 160	84	3,36	7,19	1,13	2,79	2,00	7,04	1,10	3,89	4,25	3,62	3,89	1,10	4,95	5,31	4,69	4,95	1,36	6,82	5,94
8,0 x 180	100	4,00	8,56	1,13	2,79	2,00	7,04	1,10	3,89	4,25	3,62	3,89	1,10	4,95	5,31	4,69	4,95	1,36	7,16	6,28
8,0 x 200	100	4,00	8,56	1,13	2,79	2,00	7,04	1,10	3,89	4,25	3,62	3,89	1,10	4,95	5,31	4,69	4,95	1,36	7,16	6,28
8,0 x 220	100	4,00	8,56	1,13	2,79	2,00	7,04	1,10	3,89	4,25	3,62	3,89	1,10	4,95	5,31	4,69	4,95	1,36	7,16	6,28
8,0 x 240	100	4,00	8,56	1,13	2,79	2,00	7,04	1,10	3,89	4,25	3,62	3,89	1,10	4,95	5,31	4,69	4,95	1,36	7,16	6,28
8,0 x 260	100	4,00	8,56	1,13	2,79	2,00	7,04	1,10	3,89	4,25	3,62	3,89	1,10	4,95	5,31	4,69	4,95	1,36	7,16	6,28
8,0 x 280	100	4,00	8,56	1,13	2,79	2,00	7,04	1,10	3,89	4,25	3,62	3,89	1,10	4,95	5,31	4,69	4,95	1,36	7,16	6,28
8,0 x 300	100	4,00	8,56	1,13	2,79	2,00	7,04	1,10	3,89	4,25	3,62	3,89	1,10	4,95	5,31	4,69	4,95	1,36	7,16	6,28
8,0 x 320	100	4,00	8,56	1,13	2,79	2,00	7,04	1,10	3,89	4,25	3,62	3,89	1,10	4,95	5,31	4,69	4,95	1,36	7,16	6,28
8,0 x 340	100	4,00	8,56	1,13	2,79	2,00	7,04	1,10	3,89	4,25	3,62	3,89	1,10	4,95	5,31	4,69	4,95	1,36	7,16	6,28
8,0 x 360	100	4,00	8,56	1,13	2,79	2,00	7,04	1,10	3,89	4,25	3,62	3,89	1,10	4,95	5,31	4,69	4,95	1,36	7,16	6,28
8,0 x 380	100	4,00	8,56	1,13	2,79	2,00	7,04	1,10	3,89	4,25	3,62	3,89	1,10	4,95	5,31	4,69	4,95	1,36	7,16	6,28
8,0 x 400	100	4,00	8,56	1,13	2,79	2,00	7,04	1,10	3,89	4,25	3,62	3,89	1,10	4,95	5,31	4,69	4,95	1,36	7,16	6,28
Ø 10,0																				
10,0 x 80	60	3,00	5,70	1,71	4,18	-	-	a)	a)	a)	a)	a)	-	-	-	-	-	2,13	8,14	6,90
10,0 x 100	60	3,00	5,70	1,71	4,18	3,13	9,50	1,60	4,48	5,47	4,25	5,12	1,60	4,86	5,86	4,63	5,50	2,13	8,14	6,90
10,0 x 120	60	3,00	5,70	1,71	4,18	3,13	9,50	1,70	5,28	5,79	4,91	5,28	1,70	5,67	6,17	5,30	5,67	2,13	8,14	6,90
10,0 x 140	60	3,00	5,70	1,71	4,18	3,13	9,50	1,70	5,28	5,79	4,91	5,28	1,70	5,67	6,17	5,30	5,67	2,13	8,14	6,90
10,0 x 160	100	5,00	9,50	1,71	4,18	3,13	9,50	1,70	5,28	5,79	4,91	5,28	1,70	6,62	7,12	6,25	6,62	2,13	9,09	7,85
10,0 x 180	100	5,00	9,50	1,71	4,18	3,13	9,50	1,70	5,28	5,79	4,91	5,28	1,70	6,62	7,12	6,25	6,62	2,13	9,09	7,85
10,0 x 200	100	5,00	9,50	1,71	4,18	3,13	9,50	1,70	5,28	5,79	4,91	5,28	1,70	6,62	7,12	6,25	6,62	2,13	9,09	7,85
10,0 x 220	100	5,00	9,50	1,71	4,18	3,13	9,50	1,70	5,28	5,79	4,91	5,28	1,70	6,62	7,12	6,25	6,62	2,13	9,09	7,85
10,0 x 240	100	5,00	9,50	1,71	4,18	3,13	9,50	1,70	5,28	5,79	4,91	5,28	1,70	6,62	7,12	6,25	6,62	2,13	9,09	7,85
10,0 x 260	100	5,00	9,50	1,71	4,18	3,13	9,50	1,70	5,28	5,79	4,91	5,28	1,70	6,62	7,12	6,25	6,62	2,13	9,09	7,85
10,0 x 280	100	5,00	9,50	1,71	4,18	3,13	9,50	1,70	5,28	5,79	4,91	5,28	1,70	6,62	7,12	6,25	6,62	2,13	9,09	7,85
10,0 x 300	100	5,00	9,50	1,71	4,18	3,13	9,50	1,70	5,28	5,79	4,91	5,28	1,70	6,62	7,12	6,25	6,62	2,13	9,09	7,85
10,0 x 320	100	5,00	9,50	1,71	4,18	3,13	9,50	1,70	5,28	5,79	4,91	5,28	1,70	6,62	7,12	6,25	6,62	2,13	9,09	7,85
10,0 x 340	100	5,00	9,50	1,71	4,18	3,13	9,50	1,70	5,28	5,79	4,91	5,28	1,70	6,62	7,12	6,25	6,62	2,13	9,09	7,85
10,0 x 360	100	5,00	9,50	1,71	4,18	3,13	9,50	1,70	5,28	5,79	4,91	5,28	1,70	6,62	7,12	6,25	6,62	2,13	9,09	7,85
10,0 x 380	100	5,00	9,50	1,71	4,18	3,13	9,50	1,70	5,28	5,79	4,91	5,28	1,70	6,62	7,12	6,25	6,62	2,13	9,09	7,85
10,0 x 400	100	5,00	9,50	1,71	4,18	3,13	9,50	1,70	5,28	5,79	4,91	5,28	1,70	6,62	7,12	6,25	6,62	2,13	9,09	7,85
Stainless Steel																				
Ø 8,0																				
8,0 x 80	54	2,16	4,62	1,13	2,79	2,00	7,04	a)	a)	a)	a)	a)	a)	a)	a)	a)	a)	1,36	5,46	4,70
8,0 x 100	54	2,16	4,62	1,13	2,79	2,00	7,04	1,10	3,43	3,74	3,20	3,43	1,10	3,89	4,20	3,66	3,89	1,36	5,46	4,70
8,0 x 120	54	2,16	4,62	1,13	2,79	2,00	7,04	1,10	3,43	3,74	3,20	3,43	1,10	3,89	4,20	3,66	3,89	1,36	5,46	4,70
8,0 x 140	84	3,36	7,19	1,13	2,79	2,00	7,04	1,10	3,43	3,74	3,20	3,43	1,10	4,50	4,80	4,27	4,50	1,36	6,10	5,34
8,0 x 160	84	3,36	7,19	1,13	2,79	2,00	7,04	1,10	3,43	3,74	3,20	3,43	1,10	4,50	4,80	4,27	4,50	1,36	6,10	5,34
8,0 x 180	100	4,00	8,56	1,13	2,79	2,00	7,04	1,10	3,43	3,74	3,20	3,43	1,10	4,50	4,80	4,27	4,50	1,36	6,44	5,69
8,0 x 200	100	4,00	8,56	1,13	2,79	2,00	7,04	1,10	3,43	3,74	3,20	3,43	1,10	4,50	4,80	4,27	4,50	1,36	6,44	5,69
8,0 x 220	100	4,00	8,56	1,13	2,79	2,00	7,04	1,10	3,43	3,74	3,20	3,43	1,10	4,50	4,80	4,27	4,50	1,36	6,44	5,69
8,0 x 240	100	4,00	8,56	1,13	2,79	2,00	7,04	1,10	3,43	3,74	3,20	3,43	1,10	4,50	4,80	4,27	4,50	1,36	6,44	5,69

References

Bavarian tree tower

schmid schrauben hainfeld

The official opening of the impressive observation tower in the **Steigerwald forest, at Ebrach Bavaria,** was held on March 19, 2016, after eight months of construction.

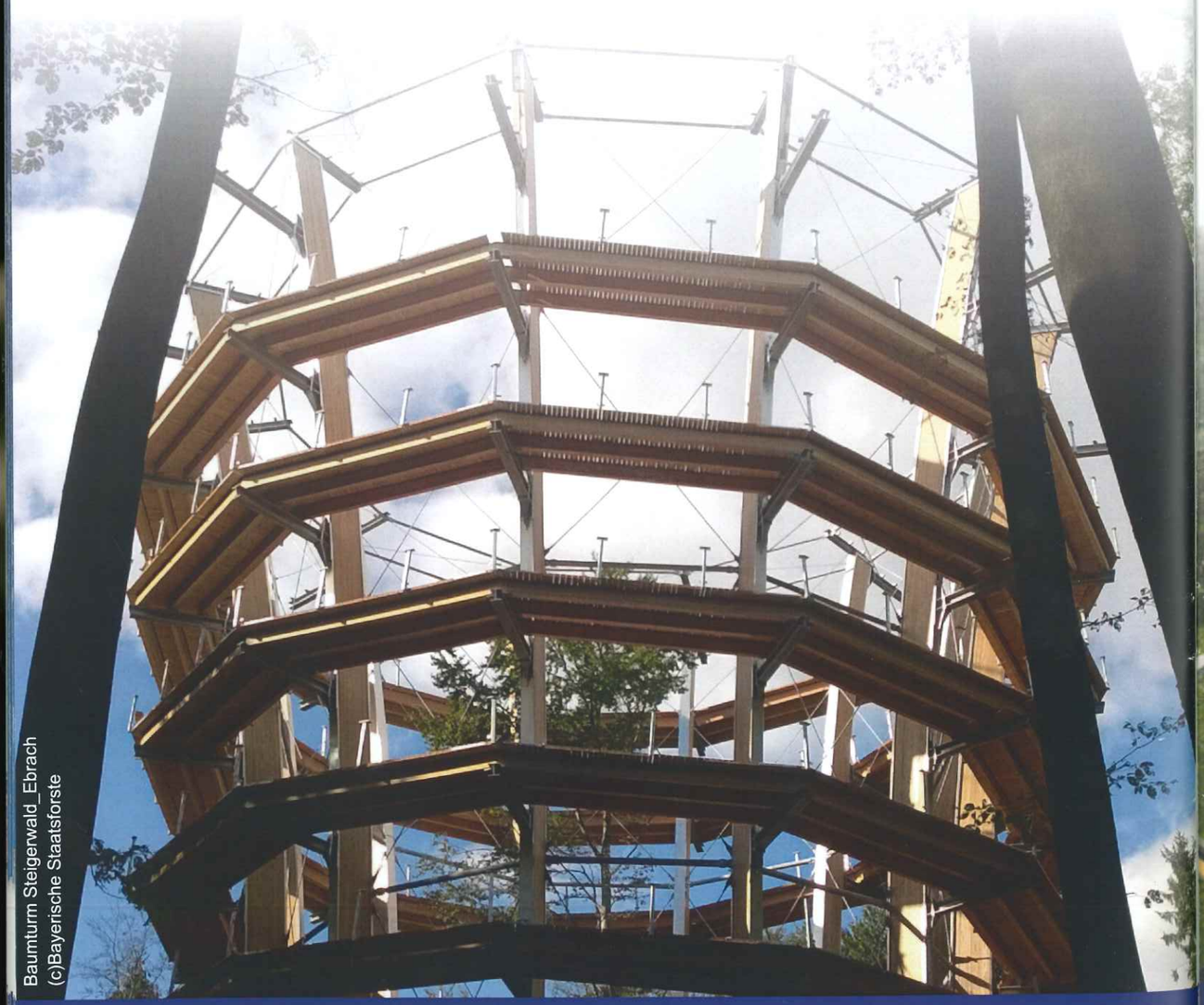
The architect responsible for this unique construction is Josef Stöger. Implementation of the project was awarded to the Upper Austrian timber specialist WIEHAG, which has relied on the quality of Schmid Schrauben for many years.

Many thousands of RAPID® Fullthread screws were installed in this extraordinary timber project.

The tree tower connects directly to the 1.1 km long „Baumwipfelweg", barrier free tree-top path, which at a height of 8 to 25 meters runs straight through the Bavarian Forest.

A spiral staircase allows to reach a height of more than 40 meters, offering stunning views of the Steigerwald.

The different levels of the tower offer visitors multiple viewing points over the surrounding trees as well as the inner beech and fir trees, the tree tower meanders around in such an impressive manner.



Baumturm Steigerwald_Ebrach
(c)Bayerische Staatsforste

References

Macallan - Whiskey Distillery

schmid schrauben hainfeld

Thousands of RAPID® screws used in the spectacular roof structure of the new whiskey distillery!

The construction of a new distillery for the renowned Scottish whiskey maker Macallan started in April 2016.

The heart of the project is the quite spectacular roof structure: A green roof spans across a row of five domes with a total length of about 200 metres. To accomplish this an existing hill was dug out, so the new building for the company is harmoniously integrated into the landscape.

Production is established in the first of four equal high domes. The fifth dome is slightly higher and is home to an exhibition area with a flat roof and a visitor centre.

The construction of the 12,300 m² roof construction was completed in the end of 2016.

The Upper Austrian timber specialist WIEHAG was selected to execute the constrution. As with the tree top path in Bavaria and the Crossrail station in London, WIEHAG once again relies on the high quality of Schmid Schrauben:
The green roof with projecting canopy is mounted on a wooden structure, which is made of 1,800 timber beams and **many thousands of RAPID® Fullthread screws.**

The outstanding visual impact has been created by the international architectural practice of Rogers Stirk Harbour + Partners.

Macallan (c) Rogers Stirk Harbour Partners

erences

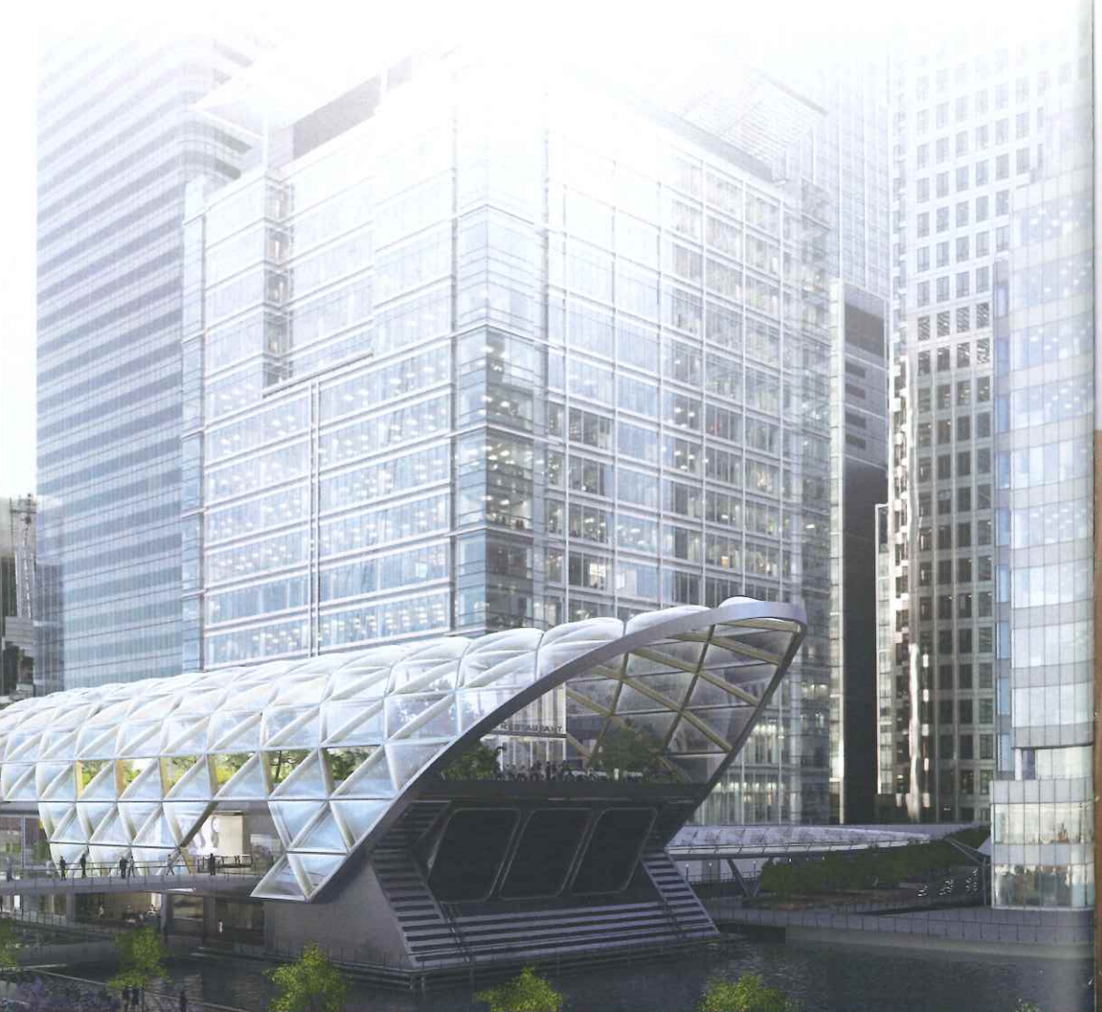
on Canary Wharf

n roof of the Crossrail Train station
t Canary Wharf in London was
larch 2014.

ts of six floors, of which four of
ater of a sidearm of the Thames.
ural engineering and design of
construction the austrian timber
responsible. Wiehag relies on the
auben already for many years.

For the spectacular roof, more than 1.000 timber girders were bolted with **over 100.000 RAPID® Fullthread screws.**

According to Wiehag this train station is currently the largest timber construction of the British Empire.
The station should be completed in 2018 and will connect Heathrow Airport with East London.
For the impressive architecture, the planning office Foster & Partners was responsible.



References

French Pavillion EXPO 2015

France was represented at the international world exhibition in their own pavilion on the theme of „Feeding the Plant, Energy for Life". The exhibition has taken place in Milan from 1 May to 31 October 2015.

The large French wood construction company Simonin - a Schmid Schrauben partner since 2014 - was responsible for the construction of the extraordinary pavilion. About **30,000 RAPID® Fullthread screws** were used to secure the supporting structure.

The wood construction impresses with its latticework of curved, laminated timber supports which encase the French exhibition theme. The latticework, with 1.5 metre openings, forms both the ceiling of the market hall and at the same time the supporting structure for the levels above them. At two corners, this framework rises to a full height of 12 metres, while inside it rises to 8 metres.

In order to take sustainability issues into account, materials were used in the construction of the building which can easily be dismantled and reused at the end of the exhibition. Wood exclusively from the French Jura region was used.

the World Expo 2015 in Milan
onin

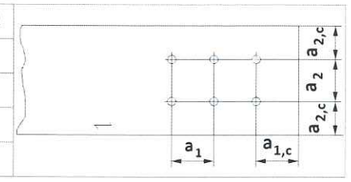
Technical information

Minimum distances and legend

Minimum distances[b] (in mm)

Distance a_2 can be reduced to 2.5 x d (3 x d) if 25 x d^2 (21 x d^2) can be maintained for the product for the distances a_1 and a_2.
This is valid for screws with d ≤ 8 mm and can be applied - specific to Ø10 mm and Ø12 mm - exclusively to half-point screws.

	Ø 4	Ø 4,5	Ø 5	Ø 6	Ø 8	Ø 10	Ø 12
a_1	20	22,5	25	30	40	70	84
a_2	20	22,5	25	30	40	50	60
$a_{1,c}$	20	22,5	25	30	40	100	120
$a_{2,c}$	16	18	20	24	32	40	48



Legend:

[a]...For these measurements, there are no shearing distances for wood-wood connections, because the necessary thickness of fixture according to ETA 12/0373 Appendix 7 Table A7.1 is not reached.
For steel-wood connections there is no stipulated minimum thickness of fixture.
[b]...The minimum distances are specified in accordance with ETA 12/0373 A.7.3 for stress in the screw axis, and apply - specific to Ø10 and Ø12 - exclusively to half-point screws.
[c]...In order to be able to apply these minimum heights (12 x d), the minimum distances must be selected in accordance with Eurocode 5 .
[d]...$a_{2,red}$ was selected according to the table of minimum distances (contingent upon the screw pairs).
[e]...The minimum distances were taken from Eurocode 5, Table 8.6.
[f]...The minimum distances were taken from Eurocode 5, Table 8.7.2 (2).
[g]...The specified tolerance (Tol.) was selected for any mounting inaccuracies in angular position and embedment depth of the screws. For the user, the rated values are reduced.
[h]...The thickness of fixture (AD) was determined as follows: AD = L - b/2
According to ETA 12/0373 Appendix 7 Table A7.1 the required thickness of fixture for wood-wood connection has to be observed.
d = 8 mm.....ADmin = 30 mm
d = 10 mm.....ADmin = 40 mm
d = 12 mm.....ADmin = 80 mm
For steel-wood connections there is no stipulated minimum thickness of fixture.
[i]...The minimum height of the attachment ADmin is calculated on the basis of the length of the screw as follows:
ADmin = [L - (b/2)] • sin(45°)] + (Tol./2)
[j]...Other head types are available upon request.
[k]...For those diameters ETA-values are not available.
[l]...No Half-tip

Technical information

Definitions and explanations

Information:

- m....mounted installation dimension, m_{OFL}....screw attachment point
- Geometry and mechanical properties comply with ETA 12/0373.
- The extraction values of the threat are calculated based on an angle of 45° to 90° to the wood grain.
- The specified values relate to wood with a characteristic gross density ρk = 350 kg/m³.
- In shear joints, 50% of the thread portion of the fullthread screw must be screwed in on both sides of the joint.
- The thickness of the fixture has been choosen equal to the shaft length.
- All values are calculated on fully screwed-in threats.
- In the case of steel-wood connections, a steel plate with a thickness t = d (thick steel plate) was taken as the basis of the calculation.
- In primary/secondary support joints, the primary support must be adequately embedded so as to be able to bear torsion and anchor the shaft.
- In primary/secondary support joints, the specified values apply only to vertically aligned stress. Any transverse stresses that exist must be separately verified.
- For the calculation the rope effect was considered.
- Note: In shear joints (with unilateral skewing), only unidirectional forces can be absorbed.
- Permissible values (grey columns): Measurement according to DIN 1052:1988 and according to German licences Z-9.1-656 for RAPID® Vollgewinde, Z-9.1-564 for RAPID® Komprex, RAPID® 2000 and Z-9.1-435 for StarDrive GPR®, RAPID® Dual and RAPID® SuperSenkFix
- Characteristic values (blue columns): Measurement according to Eurocode 5 (EC5) and ETA 12/0373
- The rated value of load capacity $F_{v,Rd}$ for the final design of the timber joint is obtained from the characteristic values as follows:

$$F_{R,d} = \frac{F_{R,k} \cdot k_{mod}}{Y_m}$$

$F_{R,d}$...design value of bearing capacity on shearing and extraction per connection element
$F_{R,k}$...characteristic value of bearing capacity on shearing and extraction per connection element
Y_m , k_{mod}...coefficients of corresponding national norms