KKT COLOR

CONE-SHAPED CONCEALED HEAD SCREW

BIT INCLUDED

EN 14592

COLOURED COATING

Carbon steel version with coloured anti-rust coating (brown, grey, green, sand and black) for outdoor use in service class 3.

COUNTER THREAD

The inverse (left-hand) under-head thread guarantees excellent grip. Small conical head to ensure it is hidden in the wood.

TRIANGULAR BODY

The three-lobed thread makes it possible to cut the wood grain during screwing. Exceptional wood penetration.

CHARACTERISTICS

FOCUS	complete range of colours
HEAD	conical, countersunk
DIAMETER	5,0 | 6,0 mm
LENGTH	from 40 mm to 120 mm

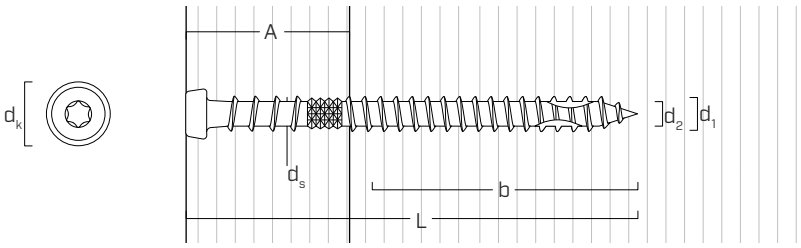
MATERIAL

Carbon steel with coloured organic anti-rust coating.

FIELDS OF USE

Outdoor use. Wooden boards with density of < 780 kg/m^3 (without pre-drill) and < 880 kg/m^3 (with pre-drill). WPC boards (with pre-drill). Suitable for service classes 1-2-3.

GEOMETRY AND MECHANICAL CHARACTERISTICS



Nominal diameter	d_1	[mm]	5,10	6,00
Head diameter	d_k	[mm]	6,75	7,75
Tip diameter	d_2	[mm]	3,40	3,90
Shank diameter	d_s	[mm]	4,05	4,40
Pre-drilling hole diameter*	d_v	[mm]	3,0 - 4,0	4,0 - 5,0
Notched tip			double	double
Characteristic yield moment	$M_{y,k}$	[Nmm]	5417,2	9493,7
Characteristic withdrawal-resistance parameter	$f_{ax,k}$	[N/mm²]	11,7	11,7
Characteristic head-pull-through parameter	$f_{head,k}$	[N/mm²]	16,5	16,5
Characteristic tensile strength	$f_{tens,k}$	[kN]	7,9	11,3

* For high density materials, pre-bored holes are recommended based on the wood species.

CODES AND DIMENSIONS

d_1 [mm]	CODE	L [mm]	b [mm]	A [mm]	pcs
5 TX 20	KKTM540	43	25	16	200
	KKTM550	53	35	18	200
	KKTM560	60	40	22	200
	KKTM570	70	50	27	100
	KKTM580	80	53	35	100
6 TX 25	KKTM660	60	40	20	100
	KKTM680	80	50	30	100
	KKTM6100	100	50	50	100
	KKTM6120	120	60	60	100

d_1 [mm]	CODE	L [mm]	b [mm]	A [mm]	pcs
5 TX 20	KKTG540	43	25	16	200
	KKTG550	53	35	18	200
	KKTG560	60	40	22	200
	KKTG570	70	50	27	100
	KKTG580	80	53	35	100

d_1 [mm]	CODE	L [mm]	b [mm]	A [mm]	pcs
5 TX 20	KKTV540	40	24	16	200
	KKTV550	53	35	18	200
	KKTV560	60	40	22	200
	KKTV570	70	50	27	100
	KKTV580	80	45	35	100

d_1 [mm]	CODE	L [mm]	b [mm]	A [mm]	pcs
5 TX 20	KKTS550	53	35	18	200
	KKTS560	60	40	22	200
	KKTS570	70	50	27	100

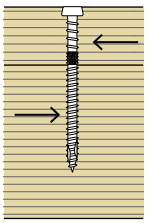
d_1 [mm]	CODE	L [mm]	b [mm]	A [mm]	pcs
5 TX 20	KKTN540(1)	40	36	16	200
	KKTN550	53	35	18	200
	KKTN560	60	40	22	200

(1)total threaded screw.

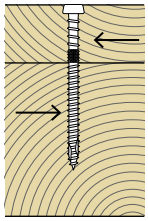
KKT N

Ideal for fastening standard Rothoblaas clips (TVM, TERRALOCK) in outdoor environments. Bit included in each package.

MINIMUM DISTANCES FOR SHEAR LOADS



Load-to-grain angle α = 0°

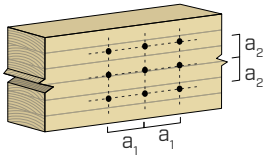


Load-to-grain angle α = 90°

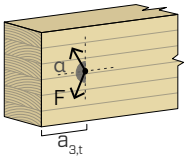
		SCREWS INSERTED WITH PRE-DRILLING HOLE [1]			SCREWS INSERTED WITH PRE-DRILLING HOLE [1]		
			5	6		5	6
a_1	[mm]	5·d	25	30	4·d	20	24
a_2	[mm]	3·d	15	18	4·d	20	24
$a_{3,t}$	[mm]	12·d	60	72	7·d	35	42
$a_{3,c}$	[mm]	7·d	35	42	7·d	35	42
$a_{4,t}$	[mm]	3·d	15	18	7·d	35	42
$a_{4,c}$	[mm]	3·d	15	18	3·d	15	18

		SCREWS INSERTED WITHOUT PRE-DRILLING HOLES [2]		
			5	6
a_1	[mm]	8·d	40	48
a_2	[mm]	4·d	20	24
$a_{3,t}$	[mm]	12·d	60	72
$a_{3,c}$	[mm]	5·d	25	30
$a_{4,t}$	[mm]	5·d	25	30
$a_{4,c}$	[mm]	4·d	20	24

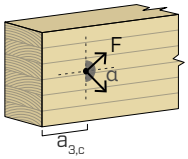
d = nominal screw diameter



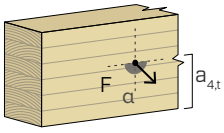
stressed end
-90° < α < 90°



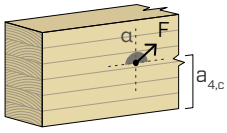
unloaded end
90° < α < 270°



stressed edge
0° < α < 180°



unload edge
180° < α < 360°



NOTES:

[1] The minimum distances comply with the EN 1995:2014 standard in accordance with ETA-11/0030.

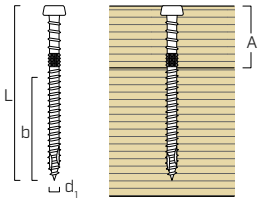
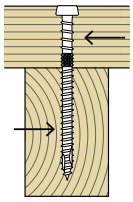
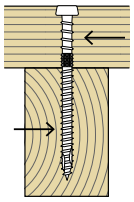
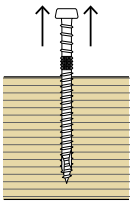
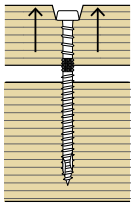
[2] The minimum distances are in accordance with ETA-11/0030 considering wood elements with a minimum width of 12 ·d and a minimum thickness of 4 · d.

In the case in which these conditions are not respected, please see the KKF screw for the minimum distances.

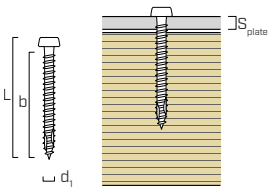
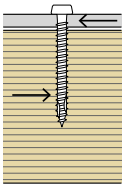
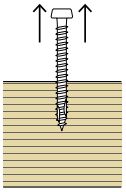
In the case of Douglas fir elements (Pseudotsuga menziesii), the minimum distances parallel to the grain (a_1, $a_{3,t}$, $a_{3,c}$) must be multiplied by a coefficient of 1,5.

STATIC VALUES

CHARACTERISTIC VALUES
EN 1995:2014

KKT	SHEAR		TENSION	
geometry	timber-to-timber without pre-drilling hole	timber-to-timber with pre-drilling hole	thread withdrawal[1]	head pull-through including upper thread withdrawal [2]
				

d_1 [mm]	L [mm]	b [mm]	A [mm]	$R_{V,k}$ [kN]	$R_{V,k}$ [kN]	$R_{ax,k}$ [kN]	$R_{head,k}$ [kN]
5	43	25	16	1,13	1,46	1,69	0,87
	53	35	18	1,17	1,54	2,37	0,87
	60	40	22	1,28	1,72	2,71	0,87
	70	50	27	1,42	1,75	3,38	0,87
	80	53	35	1,45	1,75	3,59	0,87
6	60	40	20	1,57	2,11	3,41	1,15
	80	50	30	1,87	2,50	4,06	1,15
	100	50	50	2,03	2,50	4,06	1,15
	120	60	60	2,03	2,50	4,87	1,15

KKT N	SHEAR		TENSION
geometry	intermediate steel-timber plate[3]		thread withdrawal[1]
			

d_1 [mm]	L [mm]	b [mm]	S_{PLATE} [mm]	$R_{V,k}$ [kN]		$R_{ax,k}$ [kN]
5	40	36	3	S_{PLATE} = 3,0 mm	1,73	2,44

NOTES:

(1) The axial thread withdrawal resistance was calculated considering a 90° angle between the grain and the connector and for a fixing length of b.

(2) The axial resistance to head pull-through was calculated using wood elements also considering the underhead thread.

(3) The shear resistance characteristics are calculated considering the case of an intermediate plate ($0,5\ d_1 \le S_{PLATE} \le d_1$).

GENERAL PRINCIPLES:

- Characteristic values according to EN 1995:2014.
- Design values can be obtained from characteristic values as follows:

$$R_d = \frac{R_k \cdot k_{mod}}{\gamma_m}$$

The coefficients γ_m and k_{mod} should be taken according to the current regulations used for the calculation.

- For the mechanical strength values and the geometry of the screws, reference was made to ETA-11/0030.
- For the calculation process a timber characteristic density ρ_k = 420 kg/m³ has been considered.
- Values were calculated considering the threaded part as being completely inserted into the wood.
- Dimensioning and verification of timber elements and steel plates must be carried out separately.
- The KKT screws with double thread are mainly used for timber-to-timber joints.
- The KKT total thread screws are mainly used for steel plates (e.g. FLAT patio system).