KKT COLOR A4 | AISI316

CONE-SHAPED CONCEALED HEAD SCREW

BIT INCLUDED

A4 AISI 316

CE EN 14592

COLOURED HEAD

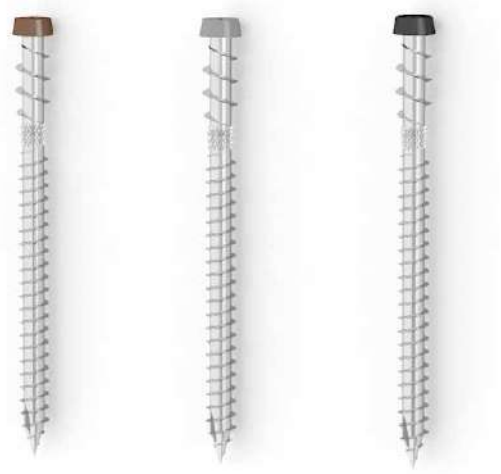
Version in A4 | AISI316 stainless steel with brown, grey or black coloured head. Excellent camouflaging with wood. Ideal for very aggressive environments and for chemically treated woods (acetylation).

COUNTER THREAD

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

TRIANGULAR BODY

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



CHARACTERISTICS

FOCUS	excellent grip
HEAD	conical, coloured countersunk
DIAMETER	5,0 mm
LENGTH	from 40 to 70 mm

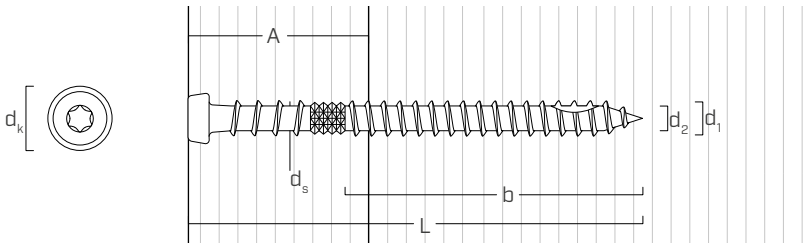
MATERIAL

A4 | AISI316 austenitic stainless steel with coloured organic coating.

FIELDS OF USE

Outdoor use in highly aggressive environments.
Wooden boards with density of < 550 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**
Head diameter	d_K	[mm]	6,75
Tip diameter	d_2	[mm]	3,40
Shank diameter	d_S	[mm]	4,05
Pre-drilling hole diameter(1)	d_V	[mm]	3,0 - 4,0
Notched tip			single
Characteristic yield moment	$M_{y,k}$	[Nm]	5,84
Characteristic withdrawal-resistance parameter	$f_{ax,k}$	[N/mm^2]	13,7
Associated density	ρ_a	[kg/m^3]	350
Characteristic head-pull-through parameter	$f_{head,k}$	[N/mm^2]	23,8
Associated density	ρ_a	[kg/m^3]	350
Characteristic tensile strength	$f_{tens,k}$	[kN]	7,8

(1) 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	**KKT540A4M**	43	25	16	200
	KKT550A4M	53	35	18	200
	KKT560A4M	60	40	22	200
	KKT570A4M	70	50	27	100

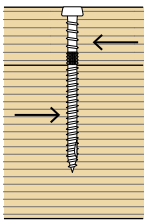
d_1 [mm]	CODE	L [mm]	b [mm]	A [mm]	pcs
5 TX 20	**KKT550A4N**	53	35	18	200
	KKT560A4N	60	40	22	200

d_1 [mm]	CODE	L [mm]	b [mm]	A [mm]	pcs
5 TX 20	**KKT550A4G**	53	35	18	200
	KKT560A4G	60	40	22	200

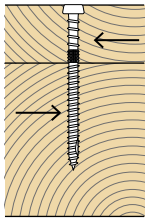
CARBONIZED WOOD

Ideal for fastening wooden planks with a burnt effect. Can also be used with acetylate-treated woods.

MINIMUM DISTANCES FOR SHEAR LOADS



Load-to-grain angle α = 0°

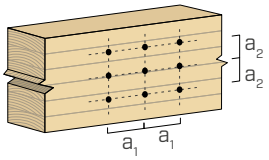


Load-to-grain angle α = 90°

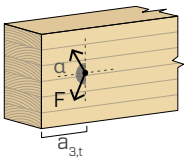
		SCREWS INSERTED WITH PRE-DRILLING HOLE		SCREWS INSERTED WITH PRE-DRILLING HOLE	
d_1	[mm]		5		5
a_1	[mm]	5·d	25	4·d	20
a_2	[mm]	3·d	15	4·d	20
$a_{3,t}$	[mm]	12·d	60	7·d	35
$a_{3,c}$	[mm]	7·d	35	7·d	35
$a_{4,t}$	[mm]	3·d	15	7·d	35
$a_{4,c}$	[mm]	3·d	15	3·d	15

		SCREWS INSERTED WITHOUT PRE-DRILLING HOLE		SCREWS INSERTED WITHOUT PRE-DRILLING HOLE	
d_1	[mm]		5		5
a_1	[mm]	12·d	60	5·d	25
a_2	[mm]	5·d	25	5·d	25
$a_{3,t}$	[mm]	15·d	75	10·d	50
$a_{3,c}$	[mm]	10·d	50	10·d	50
$a_{4,t}$	[mm]	5·d	25	10·d	50
$a_{4,c}$	[mm]	5·d	25	5·d	25

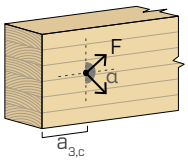
d = nominal screw diameter



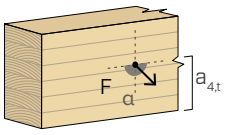
stressed end
-90° < α < 90°



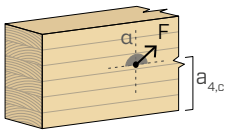
unloaded end
90° < α < 270°



stressed edge
0° < α < 180°



unload edge
180° < α < 360°

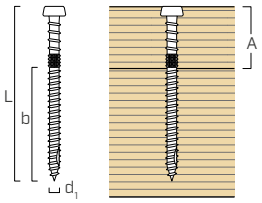
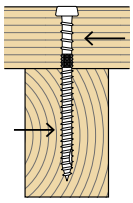
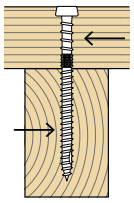
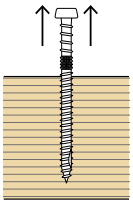
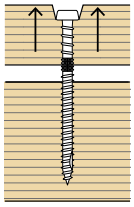


NOTES:

- The minimum distances are compliant with EN 1995:2014 considering a timber characteristic density of $\rho_k \leq 420$ kg/m^3 and calculation diameter of d = nominal screw diameter.
- The minimum spacing for all steel-to-timber connections (a_1, a_2) can be multiplied by a coefficient of 0,7.
- The minimum spacing for all panel-to-timber connections (a_1, a_2) can be multiplied by a coefficient of 0,85.

STATIC VALUES

CHARACTERISTIC VALUES
EN 1995:2014

geometry				SHEAR		TENSION	
				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	1,08	1,35	1,98	1,25
	53	35	18	1,16	1,40	2,77	1,25
	60	40	22	1,24	1,53	3,17	1,25
	70	50	27	1,35	1,70	3,96	1,25

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 timber elements also considering the underhead thread.

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.

- Mechanical strength values and screw geometry according to CE marking according to EN 14592.
- For the calculation process a timber characteristic density ρ_k = 420 kg/m^3 has been considered.
- Values were calculated considering the threaded part as being completely inserted into the wood.
- Dimensioning and verification of the timber elements must be carried out separately.