KGA

L

b

d₁

UNIVERSAL PAN HEAD SCREW

- The flat under-head accompanies absorption of the shavings, preventing the formation of cracks in the timber for an excellent surface finish
- Martensitic stainless steel with an excellent balance between mechanical resistance and corrosion resistance. Outdoor use
- Application on timber boards with density of < 780 kg/m³ (without pre-drilling hole) and WPC boards (with pre-drilling hole)

MATERIAL: AISI 410 martensitic stainless steel



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d ₁ [mm]	d _κ [mm]	CODE	L [mm]	b [mm]	A [mm]	pcs
4 TX 20	7,70	KKF440	40	24	16	500
		KKF445	45	30	15	200
4,5 TX 20	8,70	KGA4550	50	30	20	250
		KGA4560	60	35	25	200
		KKF4570	70	40	30	200
5 TX 25	9,65	KGA550	50	30	20	200
		KGA560	60	35	25	200
		KGA570	70	40	30	100

GEOMETRY AND MECHANICAL CHARACTERISTICS



nominal diameter	d1	[mm]	4	4,5	5
head diameter	dĸ	[mm]	7,70	8,70	9,65
thread diameter	d ₂	[mm]	2,60	3,05	3,25
shank diameter	ds	[mm]	2,90	3,35	3,60
head thickness	t1	[mm]	5,00	5,00	6,00
pre-drilling hole diameter ⁽¹⁾	d _v	[mm]	2,50	2,50	3,00
characteristic yield moment	M _{y,k}	[Nm]	3,00	4,10	5,40
characteristic withdrawal-resistance parameter ⁽²⁾	$f_{ax,k}$	[N/mm ²]	11,70	11,70	11,70
characteristic head-pull-through parameter ⁽²⁾	f _{head,k}	[N/mm ²]	16,50	16,50	16,50
characteristic tensile strength	f _{tens,k}	[kN]	5,00	6,40	7,90

 $\ensuremath{^{(1)}}$ Pre-drilling valid for softwood.

d

 $^{(2)}$ Valid for softwood - maximum density 440 kg/m³. Associated density ρ_a = 350 kg/m³. For applications with different materials or with high density please see ETA-11/0030.

A maximum fastening thickness

HOLZ TECHNIC

POST BASES

dĸ

MEMBRANES

SCREWS AND FASTENERS FOR TERRACES

SCREWS FOR TIMBER

SCREWS FOR METAL

CHEMICAL AND METAL ANCHORS

STRUCTURAL VALUES

			SHEAR	TENSION		
geometry			timber-to-timber	thread withdrawal $^{(1)}$	head pull-through ⁽²⁾	
] A]		$\uparrow \blacksquare \uparrow$	
d1	L	b	А	R _{V,k}	R _{ax,k}	R _{head,k}
[mm]	[mm]	[mm]	[mm]	[kN]	[kN]	[kN]
4	40	24	16	0,97	1,30	1,13
4	45	30	15	0,95	1,62	1,13
	50	30	20	1,25	1,83	1,44
4,5	60	35	25	1,39	2,13	1,44
	70	40	30	1,40	2,44	1,44
	50	30	20	1,45	2,03	1,78
5	60	35	25	1,59	2,37	1,78
	70	40	30	1,68	2,71	1,78

⁽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.

GENERAL PRINCIPLES

HOLZ TECHNIC

- Characteristic values comply with the EN 1995:2014 standard in accordance with ETA-11/0030.
- 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 resistance values and the geometry of the screws, reference was made to ETA-11/0030. For the calculation process a timber characteristic density $\rho_k=420~kg/m^3$ has been considered.
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- Values were calculated considering the threaded part as being completely inserted into the wood. Dimensioning and verification of timber and steel elements must be carried out separately. The characteristic shear resistances are calculated for screws inserted without pre-drilling hole. In the case of screws inserted with pre-drilling hole, greater • resistance values can be obtained.