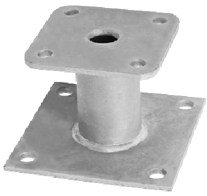
GH column base type P on concrete

ETA-16/0550



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General

Post supports are approved for service classes 1, 2 and 3.

Timber column

Softwood, C24 or higher strengths
Glulam
Minimum dimensions **min w x min h** see structural calculations table

Timber column fasteners

Wood screws	∅8x70 - $\ell_{ef} \geq$ 50 mm ∅10x120 - $\ell_{ef} \geq$ 100 mm ∅10x60, ∅4x60 - $\ell_{ef} \geq$ 40 mm ∅12x80 - $\ell_{ef} \geq$ 60 mm ℓ_{ef} = minimum thread lengths If screws with thread length ℓ_{ef} greater than 100 mm are used, the resistance can be increased, see structural calculations table, index d)
Dowel	∅8 mm, ∅10 mm and ∅12 mm, at least S235

In concrete

The minimum concrete encased depth for concrete encased post supports is 150 mm.

Structural calculation tables

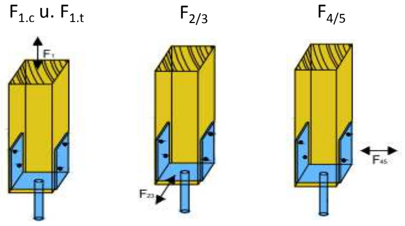
General

The table contains characteristic values of the resistance/load-carrying capacity for determining design values in ultimate limit state.
The resistances/load-carrying capacities apply to the maximum distances given in the structural calculation tables of the load application points from the top of the substrate.
The verification of anchoring of the post support in the subsoil must be provided separately.
In case of horizontal loading of the post support, it is recommended to verify the resistance with the lower value
of the resistances F2/3 and F4/5, if correct layout of the post support in the place of installation is not checked.

Minimum and maximum distances

Distance from top of baseplate - top of substrate, see structural calculations table **max a**
$e_{2/3}$ - maximum distance between load application - top of substrate in load case $F_{2/3}$
$e_{4/5}$ - maximum distance between load application - top of substrate in load case $F_{4/5}$
The distances $e_{2/3}$ and $e_{4/5}$ result from the distance max a and the centre of gravity of the load application for the load cases F2/3 and F4/5.

$$\sum F_{(i,Ed)}/F_{(i,Rd)} \leq 1$$



$F_{1,c}$ - compressive force (downwards) perpendicular to the baseplate
$F_{1,t}$ - tensile force (upwards) perpendicular to the baseplate
$F_{2/3}$ - load perpendicular to fasteners in the fin, dowel, ties
$F_{4/5}$ - load parallel to fasteners in the fin, dowel, ties

Resistance design value

$F_{i,Rd} = \min \{ k_{mod} \cdot F_{i,Rk,timber} / \gamma_{M,timber} ; F_{i,Rk,Stahl} / \gamma_{M,steel} \}$
with k_{mod} to EN 1995-1-1 and $\gamma_{M,timber} = 1.3$
For several connectors, 2 characteristic values are given for the steel load-carrying capacity with different partial safety factors gM,steel.
Both values are to be taken into consideration when determining the design value.

Resistance analysis

$$\sum \frac{F_{i,Ed}}{F_{i,Rd}} \leq 1$$

Indices

[a] Resistance values apply to baseplates 8 mm and 6 mm thick.

[b] Resistance values apply to a baseplate 8 mm thick. For a baseplate 6 mm thick, the values marked 1) to 6) are to be multiplied by the factor from the following table.

1)	2)	3)	4)	5)	6)
0,67	0,72	0,75	0,81	0,84	0,86

[c] For tensile loading by load $F_{1,t}$, dowels are required in addition to the given screws.

[d] If screws with threaded length ℓ_{ef} greater than 100 mm are used, the load-carrying capacity $F_{1,t,Rk,timber}$ can be increased by factor f1,t,timber = (lef / 100 mm)0.9.

Art.No.	Post		Maximum spacings			$F_{1,c}$ - compression			$F_{1,t}$ - tension			$F_{2/3}$			$F_{4/5}$		
	min w	min h	max a	$e_{2/3}$	$e_{4/5}$	Timber	Steel		Timber	Steel		Timber	Steel		Timber	Steel	
	mm	mm	mm	mm	mm	$F_{1,c,Rk}$	$F_{1,c,Rk}$	γ_M	$F_{1,t,Rk}$	$F_{1,t,Rk}$	γ_M	$F_{2/3,Rk}$	$F_{2/3,Rk}$	γ_M	$F_{4/5,Rk}$	$F_{4/5,Rk}$	γ_M
19832060	120	120	60	60	60	101,0	93,4	1,00	16,3 d)	10,6	1,00	6,94	7,71	1,00	6,94	7,71	1,00
19832100			100	100	100	101,0	93,4	1,00	16,3 d)	10,6	1,00	6,94	4,53	1,00	6,94	4,53	1,00
19832150			150	150	150	101,0	93,4	1,00	16,3 d)	10,6	1,00	6,94	2,99	1,00	6,94	2,99	1,00

4 screws Ø10x120