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GH column base type DS in concrete

ETA-16/0550



0769

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
 - Ø8x70 - $l_{ef} \geq 50$ mm
 - Ø10x120 - $l_{ef} \geq 100$ mm
 - Ø10x60, Ø4x60 - $l_{ef} \geq 40$ mm
 - Ø12x80 - $l_{ef} \geq 60$ 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
 - Ø8 mm, Ø10 mm and Ø12 mm, at least S235

In concrete

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

Structural calculation tables

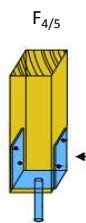
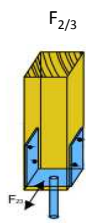
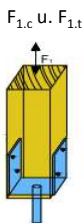
General

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 F_{2/3} and F_{4/5}, 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 F_{2/3} and F_{4/5}.

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



- 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



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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 $\gamma_{M,steel}$.

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 $f_{1,t,timber} = (l_{ef} / 100 \text{ mm})^{0.9}$.

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		
	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
19820220	120	120	200	200	200	174,0	108	1,10	16,3 ^{d)}	19,0	1,00	8,22	8,08	1,00	8,22	8,08	1,00
19820420			160,0	108	1,10	16,3 ^{d)}	15,0	1,00	8,22	8,08	1,00	8,22	8,08	1,00			
19820221			100	100	100	174,0	108	1,10	16,3 ^{d)}	19,0	1,00	8,22	16,9	1,00	8,22	16,9	1,00

4 screws Ø10x120



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