

Table C3: Characteristic values for resistance in case of Seismic performance category C1 acc. TR 045 “Design of Metal anchor under Seismic Actions”

Essential characteristics			Performance			
			M8	M10	M12	M16
Tension steel failure						
$N_{Rk,s,seis\ C1}$	Characteristic tension steel failure	[kN]	21	34	49	88
$\gamma_{MsN,seis}^{1)}$	Partial safety factor	[-]	1,5			
Pull-out failure mode $N_{Rk,p,seis} = \psi_c \times N_{Rk,p,seis}^0$						
$N_{Rk,p,seis\ C1}$	Characteristic pull-out failure in concrete C20/25	[kN]	4,1	9,0	12,0	25,0
$\gamma_{Mp,seis}^{1)}$	Partial safety factor	[-]	1,5			
Shear steel failure						
$V_{Rk,s,seis\ C1}$	Characteristic shear steel failure	[kN]	8,0	12,3	15,8	36,6
$\gamma_{MsV,seis}^{1)}$	Partial safety factor	[-]	1,3			

¹⁾ The recommended partial safety factors under seismic action ($\gamma_{M,seis}$) are the same as for static loading

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Table C4: Characteristic values for resistance in case of Seismic performance category C2 acc. TR 045 "Design of Metal anchor under Seismic Actions"

Essential characteristics			Performance			
			M8	M10	M12	M16
Tension steel failure						
$N_{Rk,s,seis} C2^{2)}$	Characteristic tension steel failure	[kN]	21	34	49	88
$\gamma_{MsN}^{3)}$	Partial safety factor	[-]	1,5			
Pull-out failure $N_{Rk,p,seis} = \psi_c \times N_{Rk,seis}$						
$N_{Rk,s,seis} C2^{2)}$	Characteristic pull-out failure in concrete C20/25	[kN]	-	2,4	8,8	21,9
$\gamma_{MpN}^{3)}$	Partial safety factor	[-]	1,5			
$\delta_{N,sei(DLS)}^{1)2)}$	Displacement at DLS	[mm]	-	2,9	4,9	6,3
$\delta_{N,sei(ULS)}^{1)2)}$	Displacement at ULS	[mm]	-	15,8	15,7	21,0
Shear steel failure						
$V_{Rk,s,seis} C2^{2)}$	Characteristic shear failure	[kN]	-	12,3	15,8	36,6
$\gamma_{MsV}^{3)}$	Partial safety factor	[-]	1,3			
$\delta_{V,sei(DLS)}^{1)2)}$	Displacement at DLS	[mm]	-	2,4	5,2	6,0
$\delta_{V,sei(ULS)}^{1)2)}$	Displacement at ULS	[mm]	-	4,1	9,7	10,7

¹⁾ The listed displacement represent mean values

²⁾ A smaller displacement may be required in the design in the case of displacement sensitive fastenings or "rigid" supports. The characteristic resistance associated with such smaller displacement may be determined by linear interpolation or proportional reduction.

³⁾ The recommended partial safety factors under seismic action ($\gamma_{M,seis}$) are the same as for static loading

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