

Table C8: Characteristic values for resistance to fire MTP, MTP-G, MTP-X anchor

Characteristic values for resistance to fire			Performances					
			M8	M10	M12	M16	M20	M24
Steel failure								
$N_{Rk,s,fi}$	Characteristic tension resistance:	R30 [kN]	0,4	0,9	1,7	3,1	4,9	7,1
		R60 [kN]	0,3	0,8	1,3	2,4	3,7	5,3
		R90 [kN]	0,3	0,6	1,1	2,0	3,2	4,6
		R120 [kN]	0,2	0,5	0,8	1,6	2,5	3,5
$V_{Rk,s,fi}$	Characteristic shear resistance:	R30 [kN]	0,4	0,9	1,7	3,1	4,9	7,1
		R60 [kN]	0,3	0,8	1,3	2,4	3,7	5,3
		R90 [kN]	0,3	0,6	1,1	2,0	3,2	4,5
		R120 [kN]	0,2	0,5	0,8	1,6	2,5	3,5
$M^0_{Rk,s,fi}$	Characteristic bending resistance:	R30 [kN]	0,4	1,1	2,6	6,7	13,0	22,5
		R60 [kN]	0,3	1,0	2,0	5,0	9,7	16,8
		R90 [kN]	0,3	0,7	1,7	4,3	8,4	14,6
		R120 [kN]	0,2	0,6	1,3	3,3	6,5	11,2
Pull out failure								
$N_{Rk,p,fi}$	Characteristic resistance:	R30 [kN]	1,3/1,5 ³⁾	2,3	3,0/4,0 ³⁾	6,3	7,5	7,5
		R60 [kN]						
		R90 [kN]						
		R120 [kN]	1,0/1,2 ³⁾	1,8	2,4/3,2 ³⁾	5,0	6,0	6,0
Concrete cone failure ⁴⁾								
$N_{Rk,p,fi}$	Characteristic resistance:	R30 [kN]	2,9	5,0	7,4	12,0	18,0	31,4
		R60 [kN]						
		R90 [kN]						
		R120 [kN]	2,3	4,0	5,9	9,6	14,4	25,2
$s_{cr,N,fi}$	Critical spacing:	R30 to R120 [mm]	4 x h_{ef}					
$s_{min,fi}$	Minimum spacing:	R30 to R120 [mm]	50	60	70	85/128 ³⁾	100/150 ³⁾	125
$c_{cr,N,fi}$	Critical edge distance:	R30 to R120 [mm]	2 x h_{ef}					
$c_{min,fi}$	Minimum edge distance:	R30 to R120 [mm]	$c_{min} = 2 \times h_{ef}$; if fire attack comes from more than one side, the edge distance of the anchor has to be ≥ 300 mm and $\geq 2 \times h_{ef}$					
Concrete pry out failure								
$k_3^{1)}$ $k^{2)}$	k factor:	R30 to R120 [-]	1	2	2	2	2	2

¹⁾ Parameter relevant only for design according to CEN/TS 1992-4:2009, prEN 1992-4

²⁾ Parameter relevant only for design according to ETAG 001, Annex C

³⁾ Respective values for anchors MTP / MTP-G, MTP-X

⁴⁾ As a rule, splitting failure can be neglected since cracked concrete and reinforcement is assumed.

Remark: In absence of other national regulations the partial safety factor for resistance under fire exposure $\gamma_{m,fi} = 1,0$ is recommended

MTP, MTP-G, MTP-X anchor

Performances

Characteristic values for resistance to fire

Annex C7