

Injection system FIS EP with threaded rod FIS A resp. RGM

Recommended loads of a single anchor¹⁾²⁾ in normal concrete of strength class C20/25.

Type	Material / surface ³⁾	Effective anchorage depth h_{ef} [mm]	Minimum member thickness h_{min} [mm]	Maximum installation torque $T_{inst,max}$ [Nm]	Cracked concrete				Non-cracked concrete			
					Recommended tension- (N_{rec}) and shear loads (V_{rec}); minimum spacing (s_{min}) and edge distances (c_{min}) with reduced loads				Recommended tension- (N_{rec}) and shear loads (V_{rec}); minimum spacing (s_{min}) and edge distances (c_{min}) with reduced loads			
					$N_{rec}^{4)}$ [kN]	$V_{rec}^{4)}$ [kN]	$s_{min}^{4)}$ [mm]	$c_{min}^{4)}$ [mm]	$N_{rec}^{4)}$ [kN]	$V_{rec}^{4)}$ [kN]	$s_{min}^{4)}$ [mm]	$c_{min}^{4)}$ [mm]
FIS A M 8	5.8	60	100	10	-	-	-	-	5.4	5.1	40	40
	5.8	160	190	10	-	-	-	-	9.0	5.1	40	40
	R-70	60	100	10	-	-	-	-	5.4	6.0	40	40
	R-70	160	190	10	-	-	-	-	9.9	6.0	40	40
FIS A M 10	5.8	60	100	20	-	-	-	-	6.4	8.6	45	45
	5.8	200	230	20	-	-	-	-	13.8	8.6	45	45
	R-70	60	100	20	-	-	-	-	6.4	9.2	45	45
	R-70	200	230	20	-	-	-	-	15.7	9.2	45	45
FIS A M 12	5.8	70	100	40	4.2	10.1	55	55	8.4	12.0	55	55
	5.8	240	270	40	14.4	12.0	55	55	20.5	12.0	55	55
	R-70	70	100	40	4.2	10.1	55	55	8.4	13.7	55	55
	R-70	240	270	40	14.4	13.7	55	55	22.5	13.7	55	55
FIS A M 16	5.8	80	120	60	6.4	15.3	65	65	12.0	22.3	65	65
	5.8	320	360	60	25.5	22.3	65	65	37.6	22.3	65	65
	R-70	80	120	60	6.4	15.3	65	65	12.0	25.2	65	65
	R-70	320	360	60	25.5	25.2	65	65	42.0	25.2	65	65
FIS A M 20	5.8	90	140	120	9.0	21.5	85	85	15.7	34.9	85	85
	5.8	400	450	120	39.9	34.9	85	85	58.6	34.9	85	85
	R-70	90	140	120	9.0	21.5	85	85	15.7	37.7	85	85
	R-70	400	450	120	39.9	39.4	85	85	65.7	39.4	85	85
FIS A M 24	5.8	96	160	150	-	-	-	-	17.2	41.4	105	105
	5.8	480	540	150	-	-	-	-	84.3	50.9	105	105
	R-70	96	160	150	-	-	-	-	17.2	41.4	105	105
	R-70	480	540	150	-	-	-	-	86.2	56.8	105	105
FIS A M 30	5.8	120	190	300	-	-	-	-	24.7	59.2	140	140
	5.8	600	670	300	-	-	-	-	123.4	80.6	140	140
	R-70	120	190	300	-	-	-	-	24.7	59.2	140	140
	R-70	600	670	300	-	-	-	-	123.4	90.2	140	140

¹⁾ Design according to EN 1992-4:2018 (for static resp. quasi-static loads). The partial safety factors for material resistance and a partial safety factor for load actions of $\gamma_L = 1.4$ are considered. As an single anchor counts e.g. an anchor with a spacing $s \geq 3 \times h_{ef}$ and an edge distance $c \geq 1.5 \times h_{ef}$.

²⁾ The specified loads are valid for anchorages in dry and damp concrete. For temperatures in the anchoring substrate up to 43 °C (resp. short term up to 55 °C). Drill hole cleaning according to installation instructions. The factor Ψ_{sus} for sustained load was taken into account with 1.0.

³⁾ For dry internal conditions, galvanised steel (gvz); for damp interiors and for outdoor use, stainless steel (R). Further steel grades by request.

⁴⁾ In the case of combinations of tension and shear loads, bending moments with reduced or minimum spacing and edge distances (anchor groups), the design must be carried out in accordance the provisions of the EN 1992-4:2018.