Loads

Highbond-Anchor FHB II

Permissible loads of a single anchor[1) 2)] in normal concrete of strength class C20/25.
For the design the complete current assessment ETA-05/0164 has to be considered.

					Cracked concrete				Non-cracked concrete			
	Material / surface[3)]	Effective anchorage depth	Minimum member thickness	Instal-lation torque	Permissible tension (N_{perm}) and shear loads (V_{perm}); minimum spacing (s_{min}) and edge distances (c_{min}) with reduced loads				Permissible tension (N_{perm}) and shear loads (V_{perm}); minimum spacing (s_{min}) and edge distances (c_{min}) with reduced loads			
Type		h_{ef} [mm]	h_{min} [mm]	T_{inst} [Nm]	N_{perm}[4)] [kN]	V_{perm}[4)] [kN]	s_{min}[4)] [mm]	c_{min}[4)] [mm]	N_{perm}[4)] [kN]	V_{perm}[4)] [kN]	s_{min}[4)] [mm]	c_{min}[4)] [mm]
FHB II-A L M8 x 60	gvz	60	100	15	7.6	7.8	40	40	7.6	7.8	40	40
	R	60	100	15	7.6	8.7	40	40	7.6	8.7	40	40
	HCR	60	100	15	7.6	8.7	40	40	7.6	8.7	40	40
FHB II-A S M10 x 60	gvz	60	100	15	7.6	11.3	40	40	7.6	11.3	40	40
	R	60	100	15	7.6	13.8	40	40	7.6	13.8	40	40
	HCR	60	100	15	7.6	13.8	40	40	7.6	13.8	40	40
FHB II-A S M10 x 75	gvz	75	120	15	10.2	11.3	40	40	10.2	11.3	40	40
	R	75	120	15	10.2	13.8	40	40	10.2	13.8	40	40
FHB II-A L M10 x 95	gvz	95	140	20	15.2	11.9	40	40	16.4	11.9	40	40
	R	95	140	20	15.2	13.3	40	40	16.4	13.3	40	40
	HCR	95	140	20	15.2	13.3	40	40	16.4	13.3	40	40
FHB II-A S M12 x 75	gvz	75	120	30	10.7	15.6	40	40	12.9	15.6	40	40
	R	75	120	30	10.7	19.3	40	40	12.9	19.3	40	40
	HCR	75	120	30	10.7	19.3	40	40	12.9	19.3	40	40
FHB II-A L M12 x 100	gvz	100	140	40	16.4	17.3	50	50	21.4	17.3	50	50
	R	100	140	40	16.4	19.3	50	50	21.4	19.3	50	50
FHB II-A L M12 x 120	gvz	120	170	40	21.6	17.3	50	50	23.7	17.3	50	50
	R	120	170	40	21.6	19.3	50	50	23.7	19.3	50	50
	HCR	120	170	40	21.6	19.3	50	50	23.7	19.3	50	50
FHB II-A S M16 x 95	gvz	95	150	50	15.2	29.0	50	50	21.7	29.0	50	50
	R	95	150	50	15.2	30.4	50	50	21.7	35.8	50	50
	HCR	95	150	50	15.2	30.4	50	50	21.7	35.8	50	50
FHB II-A L M16 x 125	gvz	125	170	60	22.9	32.2	55	55	32.7	32.2	55	55
	R	125	170	60	22.9	35.8	55	55	32.7	35.8	55	55
FHB II-A L M16 x 145	gvz	145	190	60	28.6	32.2	60	60	40.9	32.2	60	60
	R	145	190	60	28.6	35.8	60	60	40.9	35.8	60	60
FHB II-A L M16 x 160	gvz	160	220	60	33.2	32.2	70	70	46.0	32.2	70	70
	R	160	220	60	33.2	35.8	70	70	46.0	35.8	70	70
	HCR	160	220	60	33.2	35.8	70	70	46.0	35.8	70	70
FHB II-A S M20 x 170	gvz	170	240	100	36.3	45.9	80	80	51.9	45.9	80	80
	R	170	240	100	36.3	55.9	80	80	51.9	55.9	80	80
FHB II-A L M20 x 210	gvz	210	280	100	49.9	50.2	90	90	65.5	50.2	90	90
	R	210	280	100	49.9	55.9	90	90	65.5	55.9	90	90
	HCR	210	280	100	49.9	55.9	90	90	65.5	55.9	90	90
FHB II-A S M24 x 170	gvz	170	240	100	36.3	65.3	80	80	51.9	65.3	80	80
	R	170	240	100	36.3	71.1	80	80	51.9	71.1	80	80
	HCR	170	240	100	36.3	72.7	80	80	51.9	80.6	80	80
FHB II-A L M24 x 210	gvz	210	280	100	49.9	72.5	90	90	65.5	72.5	90	90
	R	210	280	100	49.9	80.6	90	90	65.5	80.6	90	90

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

[2)] The specified loads are valid for anchorages in dry and damp concrete. For temperatures in the anchoring substrate up to 50 °C (resp. short term up to 80 °C). Drill hole cleaning as per specification in the ETA.

[3)] Further steel grades, versions and technical data see ETA, e.g. for dry internal conditions, galvanised steel (gvz); for damp interiors and for outdoor use, stainless steel (R).

[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 with the provisions of the complete ETA and the provisions of the EN 1992-4:2018. We recommend using our anchor design software C-FIX.