

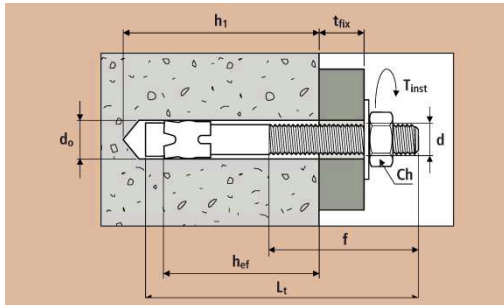
Last Updated:
 10.10.2016

Steel Throughbolt anchor for concrete - Full Thread

Product Code: Various (see table)

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Use
specific use

 Concrete
 Natural stone


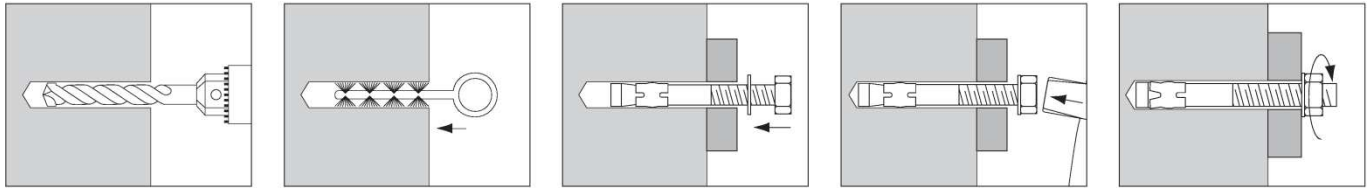
d = anchor diameter
 L_t = anchor length
 t_{fix} = fixable thickness
 f = thread length
 d_0 = hole diameter
 h_1 = minimum hole depth
 h_{nom} = overall embedment depth
 h_{ef} = effective anchorage depth
 d_f = hole diameter in fixture
 Ch-AF = spanner - across flats
 T_{inst} = tightening torque

Product Code.	Size	d mm	L_t mm	f mm	d_0 mm	t_{fix} mm	h_1 mm	d_f mm	Ch-AF mm	T_{inst} Nm
HH0103100010	M6x55	6	55	25	6	10	35	7	10	14
HH0103100020	M6x90		90	50		50	35			
HH0103100030	M8x65	8	65	25	8	15	35	9	13	20
HH0103100040	M8x95		95	55		40	40			
HH0103100050	M8x115		115	70		60	40			
HH0103100060	M10x70	10	70	30	10	10	50	12	17	60
HH0103100070	M10x90		90	50		30	50			
HH0103100080	M10x120		120	70		60	50			
HH0103100090	M12x70	12	70	30	12	5	50	14	19	80
HH0103100100	M12x110		110	70		30	65			
HH0103100110	M12x140		140	90		60	65			
HH0103100120	M16x90	16	90	40	16	5	65	18	24	140
HH0103100130	M16x125		125	75		20	85			
HH0103100140	M16x145		145	95		40	85			
HH0103100150	M16x170		170	115		65	85			
HH0103100160	M20x130	20	130	70	20	10	110	22	30	200
HH0103100170	M20x170		170	110		20	120			

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Installation

Materials

Part	Material	Coating
Body	Steel C1008, class 4.6	White zinc plating $\geq 5 \mu\text{m}$ ISO 4042 (A2J)
Clip	Steel C1008	
Nut	DIN 934	
Washer	DIN 125	

Setting parameters

Size		M6	M8	M10	M12	M14	M16	M20	M24
Minimum thickness of base material	h_{\min} mm	100	100	100	140	170	200	300	380

Strength data

Valid for a single anchor beyond the minimum edge distance, on a thick concrete member of class C20/25.

Characteristic resistance (kN)

Size		M6	M8	M10	M12	M14	M16	M20	M24
Tension	N_{Rk} kN	7.5	11.7	15.5	24.3	29.9	34.5	48.9	55.5
Shear	V_{Rk} kN	5.4	9.6	16.2	25.2	33.4	41.7	60.9	75.1

Design resistance (kN)

Size		M6	M8	M10	M12	M14	M16	M20	M24
Tension	N_{Rd} kN	2,5	3,9	5,2	8,1	10,0	11,5	16,3	18,5
Shear	V_{Rd} kN	1,8	3,2	5,4	8,4	11,1	13,9	20,3	25,0

Recommended load (kN)

Size		M6	M8	M10	M12	M14	M16	M20	M24
Tension	N_{rec} kN	1,8	2,8	3,7	5,8	7,1	8,2	11,6	13,2
Shear	V_{rec} kN	1,3	2,3	3,9	6,0	8,0	9,9	14,5	17,9

1 kN = 100 kg

Steel failure

 Characteristic resistances N_{Rk} e V_{Rk} derive from tests conducted in the European laboratories according to international guidelines. Design resistances N_{Rd} e V_{Rd} include partial safety factors on strengths. Recommended values N_{racc} e V_{racc} include the further 1.4 safety factor.

For anchors with reduced spacing or reduced edge distance (lower than the critical values) the resistance of anchors must be decreased.

Critical spacing and distances

Size		M6	M8	M10	M12	M14	M16	M20	M24
Critical spacing	$s_{cr,N}$ mm	70	90	100	120	135	150	180	210
Critical edge distance	$c_{cr,N}$ mm	100	125	140	160	180	200	300	380