

XT Throughbolts

Features:

- Through fixing
- Approved for non-cracked concrete
- 2 Embedment Depths
- Zinc Plated min 5µm
- Class A1 Reaction to Fire

Benefits:

- Quick and simple installation
- One anchor for concrete from C20/25 to C50/60
- Long thread for stand off installation

Through fixing
For Use With:
- Non-Cracked Concrete



Load Data

- Concrete C20/25 ($f_{ck,cube} = 25 \text{ N/mm}^2$)
- No Edge and Spacing reductions
- Minimum base material thickness
- Correct installation



Concrete ranges:	C20/25 to C50/60 according to EN 206:2013+A1:2016
Certification	European Technical Assessment ETA 20/0675 Issued 18/08/2020

Product Range

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Product Code	Thread Diameter	Anchor Length	Drill Hole Diameter	Standard		Reduced		Fixture Clearance Hole	Thread Length
				Drill Hole	Maximum Fixture	Drill Hole	Maximum Fixture		
	d	L	d _o	h _{nom, std}	t _{fix, std}	h _{nom, red}	t _{fix, red}	d _f	g
	mm	mm	mm	mm	mm	mm	mm	mm	mm
0841ETA540050	8	50	8	60	-	50	2	9	15
0841ETA540065		65			7		17		25
0841ETA540080		80			22		32		40
0841ETA540090		90			32		42		50
0841ETA540100		100			42		52		60
0841ETA540115		115			57		67		70
0841ETA540130		130			72		82		90
0841ETA560065	10	65	10	65	-	55	1	12	20
0841ETA560075		75			-		11		30
0841ETA560090		90			16		26		45
0841ETA560105		105			31		41		60
0841ETA560120		120			46		56		70
0841ETA560140		140			66		76		70
0841ETA580080	12	80	12	90	-	70	-	14	30
0841ETA580100		100			-		20		50
0841ETA580120		120			20		40		70
0841ETA580140		140			40		60		85
0841ETA580180		180			80		100		95
0841ETA580200		200			100		120		145
0841ETA580220		220			120		140		145
0841ETA580240		240			140		160		145
0841ETA620105	16	105	16	110	-	90	-	18	45
0841ETA620125		125			-		19		60
0841ETA620150		150			24		44		80
0841ETA620175		175			49		69		100
0841ETA620200		200			74		94		110
0841ETA620220		220			94		114		130
0841ETA620240		240			114		134		150
0841ETA640130	20	130	20	120	-	100	4	22	60
0841ETA640160		160			14		34		85
0841ETA640220		220			74		94		130
0841ETA640240		240			94		114		140

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Installation Data

Anchor Diameter			M8	M10	M12	M16	M20
Nominal Anchorage Depth, Standard	h_{nom}	[mm]	53	58	80	99	110
Effective Anchorage Depth, Standard	h_{eff}	[mm]	45	50	70	85	100
Spacing, Standard Embedment Depth	$S_{cr,N,std}$	[mm]	135	150	210	255	300
Edge Distance, Standard Embedment Depth	$C_{cr,N,std}$	[mm]	67.5	75	105	127.5	150
Minimum Concrete Thickness, Standard	h_{min}	[mm]	100	100	140	170	200
Nominal Anchorage Depth, Reduced	$h_{nom,red}$	[mm]	43	48	60	79	90
Effective Anchorage Depth, Reduced	$h_{eff,red}$	[mm]	35	40	50	65	80
Spacing, Reduced Embedment Depth	$S_{cr,N,red}$	[mm]	105	120	150	195	240
Edge Distance, Reduced Embedment Depth	$C_{cr,N,red}$	[mm]	52.5	60	75	97.5	120
Minimum Concrete Thickness, Reduced	$h_{min, red}$	[mm]	100	100	100	130	160
Minimum Spacing	s_{min}	[mm]	35	40	50	65	80
Minimum Edge Distance	c_{min}	[mm]	35	40	50	65	80
Torque moment	T_{inst}	[Nm]	25	35	60	120	200
For reductions in Spacing and Edge Distance refer to DesignFix for calculations							

Standard Embedment

Characteristics Resistance (Non-Cracked concrete)

Anchor Diameter			M8	M10	M12	M16	M20
N_{Rk}		[kN]	9.5	11.0	20.0	26.0	48.0
V_{Rk}		[kN]	7.3	11.6	16.9	31.4	49.0

Design Resistance

Anchor Diameter			M8	M10	M12	M16	M20
N_{Rd}		[kN]	6.3	7.3	13.3	14.4	26.7
V_{Rd}		[kN]	5.8	9.3	13.5	25.1	39.2

Recommended Resistance

Anchor Diameter			M8	M10	M12	M16	M20
N_{rec}		[kN]	4.5	5.2	9.5	10.3	19.0
V_{rec}		[kN]	4.2	6.6	9.7	17.9	28.0

Includes Partial Safety Factor $\gamma = 1.4$ in the absence of national regulations and type of loading
Data is for Static and Quasi Static Loads for a single anchor

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Reduced Embedment

Characteristics Res (Non-Cracked concrete)

Anchor Diameter			M8	M10	M12	M16	M20
N_{Rk}		[kN]	9.5	9.5	12.0	24.0	34.0
V_{Rk}		[kN]	7.3	11.6	16.9	31.4	49.0

Design Resistance

Anchor Diameter			M8	M10	M12	M16	M20
N_{Rd}		[kN]	6.3	6.3	8.0	13.3	18.9
V_{Rd}		[kN]	5.8	9.3	13.5	25.1	39.2

Recommended Resistance

Anchor Diameter			M8	M10	M12	M16	M20
N_{rec}		[kN]	4.5	4.5	5.7	9.5	13.5
V_{rec}		[kN]	4.2	6.6	9.7	17.9	28.0

Includes Partial Safety Factor $\gamma = 1.4$ in the absence of national regulations and type of loading
Data is for Static and Quasi Static Loads for a single anchor

Anchor Diameter			M8	M10	M12	M16	M20
ψ_c C30/37		[-]	1.22	1.22	1.22	1.22	1.22
ψ_c C40/50		[-]	1.41	1.41	1.41	1.41	1.41
ψ_c C50/60		[-]	1.55	1.55	1.55	1.55	1.55

When using increasing factors care must be taken not to exceed steel limits

Steel limits			M8	M10	M12	M16	M20
Characteristic Tensile Resistance	$N_{Rk,s}$	[kN]	14.6	23.2	33.7	62.8	98.0
Partial safety factor	γ_{MsN}	[-]	1.5				
Characteristic Shear Resistance	$V_{Rk,s}$	[kN]	7.3	11.6	16.9	31.4	49.0
Characteristic Bending Moment	$M^0_{Rk,s}$	[Nm]	15.0	29.9	52.4	133.2	259.6
Partial Safety Factor	γ_{MsV}	[-]	1.25				

Anchor Materials

Designation	Material	
Bolt	Q195 Cold formed steel $f_{uk} \geq 400$ MPa $F_{yk} \geq 300$ MPa	Zinc plated $\geq 5\mu m$ EN ISO 4042
Expansion Sleeve		
Washer	DIN 125 or EN ISO 7089	
Hexagon Nut	EN ISO 898-2 carbon steel class 8 / DIN 934 AISI 1008	

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Installation

Step 1:	Position the fixture and drill the correct diameter hole to the correct depth.
Step 2:	Clean the hole by blowing with an air pump to remove drilling dust
Step 3:	Insert the anchor through the fixture with the nut and washer attached and Hammer into the concrete
Step 4:	Tighten the nut to the correct torque using a calibrated torque wrench

