



Throughbolt AWA

Specification



ETA 08/0169

Option 7 Non-Cracked Concrete

Product Information

A zinc plated (min 5µm), torque controlled through fixing suitable for use in non-cracked concrete range between C20/25 & C50/60.

Features

Through Fixing
 Medium to heavy duty loads
 Torque controlled expansion
 Supplied pre-assembled for rapid installation

Range Data

Part Number	Anchor Diam & Length	Hole Diam	Fixture Clearance Hole	Standard Embedment			Reduced Embedment		
				Maximum Fixture Thickness	Minimum Embedment Depth	Minimum Hole Depth	Maximum Fixture Thickness	Minimum Embedment Depth	Minimum Hole Depth
mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
AWA06060	6x60	6	7	2	50	55	21*	47	35
AWA06080	6x80			22			41*		
AWA08050	8x50	8	9	-	60	65	5*	47	50
AWA08065	8x65			-			8		
AWA08075	8x75			5			18		
AWA08090	8x90			20			33		
AWA08100	8x100			30			43		
AWA08115	8x115			45			58		
AWA08130	8x130			60			73		
AWA10065	10x65	10	12	-	67	75	3*	54	60
AWA10075	10x75			-			8		
AWA10090	10x90			10			23		
AWA10100	10x100			20			33		
AWA10120	10x120			40			53		
AWA10150	10x150			70			83		
AWA12080	12x80	12	14	-	77	85	3	62	70
AWA12090	12x90			-			13		
AWA12100	12x100			8			23		
AWA12110	12x110			18			33		
AWA12120	12x120			28			43		
AWA12140	12x140			48			63		
AWA12160	12x160			68			83		
AWA12180	12x180			88			103		
AWA16105	16x105	16	18	-	91	110	3*	84	90
AWA16125	16x125			3			23*		
AWA16145	16x145			23			43*		
AWA16170	16x170			48			68*		
AWA16220	16x220			98			118*		
AWA20130	20x130	20	22	-	125	135	23*	105	105
AWA20170	20x170			23			63*		
AWA20215	20x215			68			108*		
AWA24180	24x180	24	26	4*	150	160	49*	115	115
AWA24260	24x260			84*			129*		

* Not part of ETA



Standard Embedment

Performance Data (20/25 Non-Cracked Concrete)											
Thread Diam	Minimum Structure Thickness	Characteristic Resistance		Design Resistance		Recommended Resistance		Design Spacing	Design Edge Distance		Tight. Torque
mm	mm	kN		kN		kN		mm	mm		Nm
		Tensile	Shear	Tensile	Shear	Tensile	Shear	Tensile & Shear	Tensile	Shear	
6	100	7.7	5.1	5.5	4.0	3.9	2.8	50	50	50	7
8	100	12.0	9.3	7.9	7.4	5.6	5.3	65	65	75	20
10	110	16.0	14.7	8.8	11.7	6.3	8.3	120	80	115	35
12	130	25.0	20.6	13.8	16.4	9.8	11.7	230	120	145	60
16	168	35.0	38.4	19.4	30.7	13.8	21.9	270	150	240	120
20	206	50.0	56.3	27.7	45.0	19.8	32.1	370	195	310	240
24 ⁽¹⁾	265	68.5	70.6	38.0	42.3	27.1	30.1	400	200	390	280

Shear Loads towards a free edge are for single anchors where Spacing $\geq 3 \times$ Edge Distance

(1) M24 anchors are not included in ETA

Reduced Embedment

Performance Data (20/25 Non-Cracked Concrete)											
Thread Diam	Minimum Structure Thickness	Characteristic Resistance		Design Resistance		Recommended Resistance		Design Spacing	Design Edge Distance		Tight. Torque
mm	mm	kN		kN		kN		mm	mm		Nm
		Tensile	Shear	Tensile	Shear	Tensile	Shear	Tensile & Shear	Tensile	Shear	
8 ⁽²⁾	100	9.0	10.4	5.9	6.9	4.2	4.9	75	65	75	20
10	100	13.7	13.7	7.6	9.1	5.4	6.5	125	85	95	35
12	110	17.8	20.6	9.9	16.4	7.0	7.0	150	95	165	60
16	130	21.6	38.4	11.9	30.7	8.5	21.9	170	110	290	120
20	135	26.4	52.9	14.6	35.2	10.5	25.1	195	135	320	240
24 ⁽¹⁾	175	40.9	58.5	22.7	39.0	16.2	27.8	260	130	360	280

Shear Loads towards a free edge are for single anchors where Spacing $\geq 3 \times$ Edge Distance

(2) use restricted to anchorages of indeterminate structural components

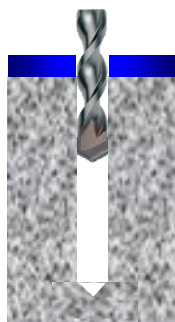
(1) M24 anchors are not included in ETA

For variations in structure thickness, reduced spacing and edge calculations download the free [Anchor Calculation Program](http://www.jcpfixings.co.uk) from www.jcpfixings.co.uk

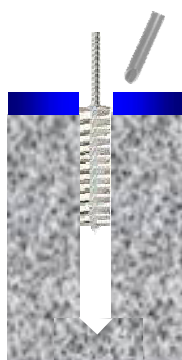
Influence of concrete strength

Concrete strength		C20/25	C25/30	C30/37	C40/50	C45/55	C50/60
Cylinder	N/mm ²	20	25	30	40	45	50
Cube	N/mm ²	25	30	37	50	55	60
Factor		1.0	1.1	1.22	1.41	1.48	1.55

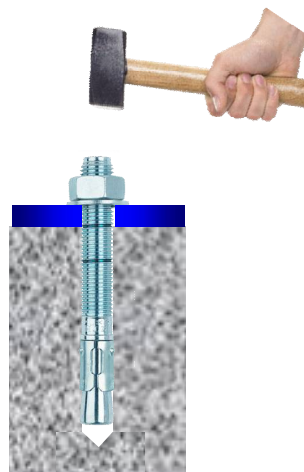
Installation Instructions



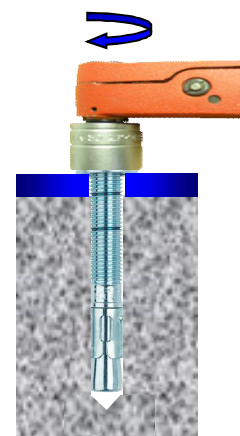
Position fixture and drill correct diameter hole to correct depth



Clean hole by brushing and blowing to remove all dust and drilling debris



Insert assembled anchor through fixture into concrete



Tighten with torque wrench to recommended torque

www.fftltd.co.uk info@fftltd.co.uk

Declaration of Performance No. 1219-CPR-0020⁽¹⁾



Throughbolt AWA (Torque controlled expansion anchor made of zinc coated steel)
 JCP Construction Products,
 Unit 14 Teddington Business Park, Station Rd, Teddington, Middlesex TW11 9BQ
 Telephone +44 (0)208 943 1800

Intended use or uses of the products according to EAD 330232-00-0601	
Generic type	Torque controlled expansion anchor
Base material	Non-cracked concrete C20/25 to C50/60 acc. EN 206-2:2003
Batch number	Marked on individual boxes
Material	Zinc plated carbon steel
Durability	Dry internal conditions
Loading	Static, quasi-static
ETA 08/0169 issued by	CSIC
On the basis of	EAD 330232-00-0601
Certificate of Conformity 1219-CPR-0020 issued by	CSIC
Under system	1

Declared performances according to EAD 330232-00-0601								
Essential Characteristics			Performance					
			M06	M08	M10	M12	M16	M20
Installation parameters								
d_o	Nominal diameter of drill bit	[mm]	6	8	10	12	16	20
d_f	Fixture clearance hole	[mm]	7	9	12	14	18	22
h_{ef}	Effective anchorage depth	[mm]	40	48	55	65	84	103
h_{nom}	Minimum installation depth	[mm]	49.5	59.5	66.5	77	103.5	125
h_1	Depth of drill hole to deepest point	[mm]	55	65	75	85	110	135
h_{min}	Minimum thickness of concrete member	[mm]	100	100	110	130	168	206
T_{inst}	Nominal torque moment	[mm]	7	20	35	60	120	240
S_{min}	Minimum spacing	[mm]	50	65	70	85	110	135
for $C \geq$	Edge distance	[mm]	50	65	70	85	110	135
C_{min}	Minimum edged distance	[mm]	50	65	70	85	110	135
for $S \geq$	Anchor spacing	[mm]	50	65	70	85	110	135
Tensile steel failure								
$N_{Rk,s}$	Characteristic tensile steel failure	[kN]	7.7	16.4	25.6	35.4	51.7	104.4
$\gamma_{M,s}$	Partial safety factor	[-]	1.40	1.40	1.40	1.43	1.43	1.47
Pull-out failure								
$NR_{k,p,cr}$	Characteristic tensile load in cracked concrete C20/25	[kN]	n/a	n/a	n/a	n/a	n/a	n/a
$NR_{k,p,ucr}$	Characteristic tensile load in non-cracked concrete C20/25	[kN]	-	12	16	25	35	50
$\gamma_{M,p}$	Partial safety factor (Includes γ_2)	[-]	-	1.5	1.8	1.8	1.8	1.8
$S_{cr,N}$	Critical spacing	[mm]	120	144	165	195	252	309
$C_{cr,N}$	Critical edge distance	[mm]	60	72	83	98	126	155
$\Psi_{cC30/37}$	Increasing factor for concrete C30/37	[-]	1.22					
$\Psi_{cC40/50}$	Increasing factor for concrete C40/50	[-]	1.41					
$\Psi_{cC50/60}$	Increasing factor for concrete C50/60	[-]	1.55					
Splitting failure								
$S_{cr,sp}$	Critical spacing (Splitting)	[mm]	160	192	220	260	336	412
$C_{cr,sp}$	Critical edge distance (Splitting)	[mm]	80	96	110	130	168	206
Displacement under tensile loading								
N_{cr}	Service tensile loads in cracked concrete	[kN]	n/a	n/a	n/a	n/a	n/a	n/a
$\delta N_{0,cr}$	Short term displacement under tensile loads	[mm]	n/a	n/a	n/a	n/a	n/a	n/a
$\delta N_{\infty,cr}$	Long term displacement under tensile loads	[mm]	n/a	n/a	n/a	n/a	n/a	n/a
N_{ucr}	Service tensile loads in non-cracked concrete	[kN]	2.8	5.0	6.0	9.3	16.0	17.0
$\delta N_{0,ucr}$	Short term displacement under tensile loads	[mm]	0.7	1.12	1.07	1.32	2.38	3.56
$\delta N_{\infty,ucr}$	Long term displacement under tensile loads	[mm]	1.47	2.34	2.24	2.77	4.99	7.47

www.fftltd.co.uk info@fftltd.co.uk

Shear steel failure											
$V_{FRk,s}$	Characteristic shear steel failure	[kN]	5.1	9.3	14.7	20.6	38.4	56.3			
$M_{FRk,s}^0$	Characteristic bending moment	[Nm]	7.7	19.1	38.1	64.1	163.1	298.5			
$\gamma_{m,sV}$	Partial safety factor	[-]	1.25								
Concrete pryout resistance											
k	Factor in equation (5.6) of ETAG 001 Annex C §5.2.3.3	[-]	1.0	1.0	1.0	2.0	2.0	2.0			
$\gamma_{m,c}$	Partial safety factor	[-]	1.5								
Shear concrete edge failure											
l_{ef}	Effective anchorage length	[mm]	40	48	55	65	84	103			
Displacement under shear load											
V	Service shear load in concrete	[kN]	2.9	5.3	8.4	11.8	21.9	32.1			
δ_{V0}	Short term displacement under shear load	[mm]	0.65	2.8	1.75	2.45	3.53	4.13			
δV_{∞}	Long term displacement under shear load	[mm]	0.98	4.2	2.63	3.68	5.29	6.19			

The performance data above relates to the following product codes


d	Marking d_o/L	L [mm]	l_{fix} [mm]	Product Code
M6	MTHM6x60	60	2	AWA06060
	MTHM6x80	80	22	AWA06080
M8	MTH8x75	75	5	AWA08075
	MTH8x90	90	20	AWA08090
	MTH8x100	100	30	AWA08100
	MTH8x115	115	45	AWA08115
	MTH8x130	130	60	AWA08130
M10	MTH10x90	90	10	AWA10090
	MTH10x100	100	20	AWA10100
	MTH10x120	120	40	AWA10120
	MTH10x150	150	70	AWA10150
M12	MTH12x100	100	8	AWA12100
	MTH12x110	110	18	AWA12110
	MTH12x120	120	28	AWA12120
	MTH12x140	140	48	AWA12140
	MTH12x160	160	68	AWA12160
	MTH12x180	180	88	AWA12180
M16	MTH16x125	125	5	AWA16125
	MTH16x145	145	25	AWA16145
	MTH16x170	170	48	AWA16170
	MTH16x220	220	98	AWA16220
M20	MTH20x170	170	23	AWA20170
	MTH20x215	215	68	AWA20215

Amendments	
(1) CPD Changed to CPR	27/11/2014
(2) ETAG Changed to EAD	03/11/2017
(3) Range increased	03/11/2017

The performances of the product identified by the above product codes are in conformity with the declared performance

This Declaration of performance is issued under the sole responsibility of JCP Construction Products

Signed for and on behalf of the manufacturers

Name and function	Place and date of issue	Signature
Brian Deluce	Teddington	
Technical Manager	3rd November 2017	