

### INFORMATION

The torque controlled AWA Throughbolt is a zinc plated high performance anchor for use in non-cracked concrete and structural applications such as:

- Columns
- Guard rails
- Façades
- Staircases
- Silo installation
- Machines
- Cantilever beams

### BASE MATERIAL

- Concrete C20/25 to C50/60
- Non-Cracked Concrete

### FEATURES

- Medium To High Performance
- Wide Range Of Sizes
- Fast And Secure Installation
- Through Fixing
- Three way Expansion Sleeve
- Zinc Plated Min. 5µm
- Close Spacing And Edge Distance
- Reduced Embedment Depth
- Reaction To Fire Class A1

### APPROVALS

European Technical Assessment  
Option 7 Non-Cracked Concrete



ETA-19/0786

### RELATED PRODUCTS



SDS+ Drill Bits

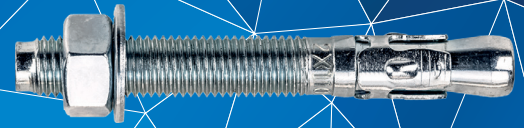


Hole Cleaning Pump

### RANGE AND LOAD DATA

RANGE DATA													
Part Number	Size of Thread	Min. Structure Thickness	Drill Hole Diameter	Min Hole Depth	Fixture Clearance Hole	Effective Embedment Depth	Max Fixture Thickness	Washer and Nut Thickness	Total Length	Thread Length	Width Across Flats	Washer Outer diameter	Tightening Torque
-	(h <sub>c</sub> )	(d <sub>0</sub> )	(h <sub>r</sub> )	(d <sub>f</sub> )	(h <sub>ef</sub> )	(t <sub>fix</sub> )	(t <sub>w+n</sub> )	(L)	(L <sub>th</sub> )	(A/F)	(d <sub>2</sub> )	(T <sub>inst</sub> )	
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	Nm
STANDARD EMBEDMENT DEPTH													
AWA06060	M6	100	6	55	7	40	3	8	60	25	10	12	7
AWA06080							23		80	45			
AWA08050*	M8	110	8	-	9	-	-	10	50	17	13	16	20
AWA08065				-		-	65		22				
AWA08075				-		-	75		32				
AWA08090				3		75	32						
AWA08100				18		90	46						
AWA08115				28		100	50						
AWA08130	43	115	65										
							58		130	80			
AWA10065*	M10	100	10	-	12	-	-	13	65	22	17	20	35
AWA10075				-		-	75		27				
AWA10090				8		90	43						
AWA10100				18		100	53						
AWA10120				38		120	71						
AWA10150				68		150	95						





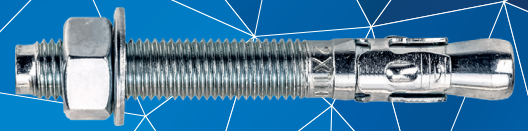
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		mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	Nm
STANDARD EMBEDMENT DEPTH													
AWA12080*	M12	130	12	-	14	-	-	16	80	32	19	24	55
AWA12090				-		-	90		35				
AWA12100				5		100	44						
AWA12110				15		110	53						
AWA12120				25		120	63						
AWA12140				45		140	83						
AWA12160				65		160	95						
AWA12180				85		180	95						
AWA12200				105		200	95						
AWA16105*	M16	170	16	-	18	-	-	19	105	40	24	30	100
AWA16125				-		-	125		60				
AWA16145				16		145	80						
AWA16170				115		170	105						
AWA16220				85		220	115						
AWA20130	M20	210	20	-	22	-	-	22	130	60	30	37	150
AWA20170				135		170	100						
AWA20215				105		215	115						
AWA24180	M24	240	24	155	26	120	5	27	180	100	36	44	280
AWA24260							85		260	150			
REDUCED EMBEDMENT DEPTH													
Part Number	Size of Thread	Red. Min. Structure Thickness	Drill Hole Diameter	Red. Min. Hole Depth	Fixture Clearance Hole	Red. Effective Embedment Depth	Red. Max. Fixture Thickness	Washer and Nut Thickness	Total Length	Thread Length	Width Across Flats	Washer Outer diameter	Tightening Torque
	-	(h <sub>c,red</sub> )	(d <sub>0</sub> )	(h <sub>r,red</sub> )	(d <sub>f</sub> )	(h <sub>ef,red</sub> )	(t <sub>fix,red</sub> )	(t <sub>w+n</sub> )	(L)	(L <sub>th</sub> )	(A/F)	(d <sub>2</sub> )	(T <sub>inst</sub> )
		mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	Nm
AWA06060*	M6	100	6	50**	7	35	8	8	60	25	10	12	7
AWA06080*							28		80	45			

\* Not included in the product's ETA.

\*\* Use restricted to the anchoring of structural components which are statically indeterminate.

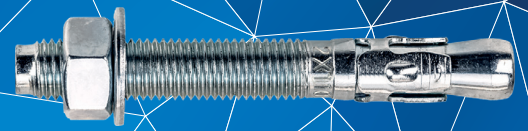




## RANGE AND LOAD DATA

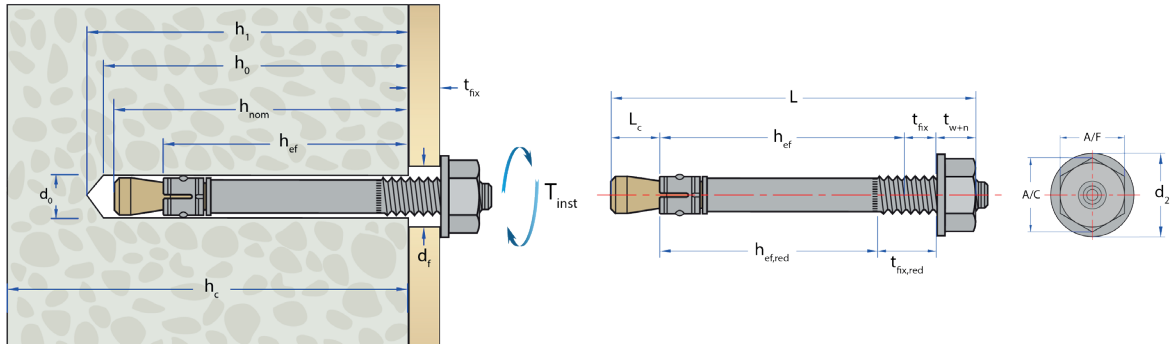
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Part Number	Size of Thread	Red. Min. Structure Thickness	Drill Hole Diameter	Red. Min. Hole Depth	Fixture Clearance Hole	Red. Effective Embedment Depth	Red. Max. Fixture Thickness	Washer and Nut Thickness	Total Length	Thread Length	Width Across Flats	Washer Outer diameter	Tightening Torque
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		mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	Nm
AWA08050*	M8	100	8	45*	9	35	3	10	50	17	13	16	20
AWA08065				8			65		22				
AWA08075				18			75		32				
AWA08090				33			90		46				
AWA08100				43			100		50				
AWA08115				58			115		65				
AWA08130				73			130		80				
AWA10065*	M10	100	10	55*	12	40	3	13	65	22	17	20	35
AWA10075				8			75		27				
AWA10090				23			90		43				
AWA10100				33			100		53				
AWA10120				53			120		71				
AWA10150				83			150		95				
AWA12080*	M12	100	12	60*	14	50	10	16	80	32	19	24	55
AWA12090				10			90		35				
AWA12100				20			100		44				
AWA12110				30			110		53				
AWA12120				40			120		63				
AWA12140				60			140		83				
AWA12160				80			160		95				
AWA12180				100			180		95				
AWA12200				120			200		95				
AWA16105*	M16	140	16	85*	18	70	6	19	105	40	24	30	100
AWA16125				11			125		60				
AWA16145				31			145		80				
AWA16170				56			170		105				
AWA16220				106			220		115				
AWA20130	M20	160	20	110	22	80	5	22	130	60	30	37	150
AWA20170							45		170	100			
AWA20215							90		215	115			
AWA24180	M24	185	24	125	26	92	33	27	180	100	36	44	280
AWA24260							113		260	150			



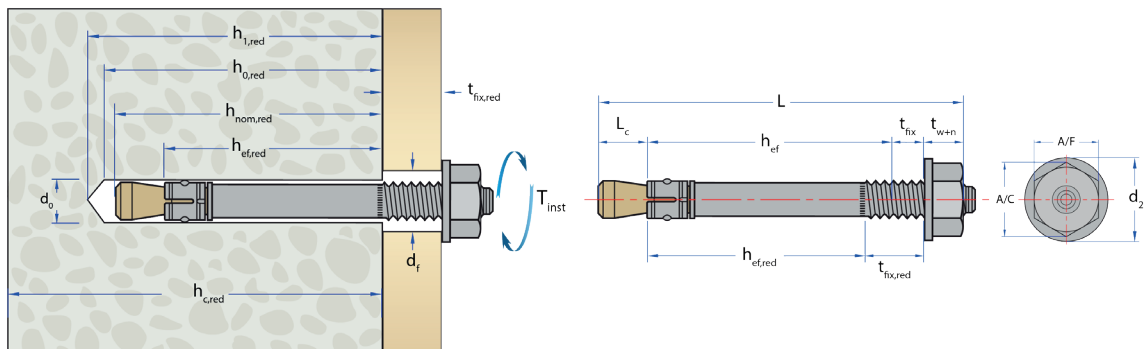


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STANDARD EMBEDMENT



REDUCED EMBEDMENT

## NON-CRACKED CONCRETE

### REDUCED EMBEDMENT

Performance Data (C20/25 non-cracked concrete)

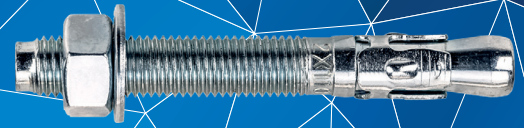
Size Of Thread	Effective Embedment Depth ( $h_{ef}$ )	Minimum Concrete Thickness ( $h_{min}$ )	Characteristic Resistance		Design Resistance		Approved Resistance		Design Spacing (S)		Design Edge Distance (C)	
			Tensile ( $N_{Rk}$ )	Shear ( $V_{Rk}$ )	Tensile ( $N_{Rd}$ )	Shear ( $V_{Rd}$ )	Tensile ( $N_{Ap}$ )	Shear ( $V_{Ap}$ )	Tensile	Shear	Tensile	Shear
-	mm	mm	kN	kN	kN	kN	kN	kN	mm	mm	mm	mm
M6*	35**	100	5.7	3.2	2.9	1.9	2.0	1.3	50	50	50	50
M8	35	100	10.5	5.8	5.4	3.5	3.8	2.5	65	65	65	65
M10	40	100	12.0	9.1	8.0	5.6	5.7	4.0	110	70	80	70
M12	50	100	17.9	13.3	11.9	8.2	8.5	5.8	200	85	100	85
M16	70	140	29.6	24.7	19.7	15.2	14.0	10.8	300	110	140	130
M20	80	160	36.1	38.6	24.0	22.7	17.1	16.2	320	135	160	170
M24	92	185	44.6	55.6	29.7	32.7	21.2	23.3	280	155	250	230

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





### STANDARD EMBEDMENT

Performance Data (C20/25 non-cracked concrete)												
Size Of Thread	Effective Embedment Depth ( $h_{ef}$ )	Minimum Concrete Thickness ( $h_{min}$ )	Characteristic Resistance		Design Resistance		Approved Resistance		Design Spacing (S)		Design Edge Distance (C)	
			Tensile ( $N_{Rk}$ )	Shear ( $V_{Rk}$ )	Tensile ( $N_{Rd}$ )	Shear ( $V_{Rd}$ )	Tensile ( $N_{Ap}$ )	Shear ( $V_{Ap}$ )	Tensile	Shear	Tensile	Shear
-	mm	mm	kN	kN	kN	kN	kN	kN	mm	mm	mm	mm
M6	40	100	5.7	3.2	2.9	1.9	2.0	1.3	50	50	50	50
M8	50	100	10.5	5.8	5.4	3.5	3.8	2.5	65	65	65	65
M10	55	110	16.6	9.1	8.5	5.6	6.0	4.0	70	70	70	70
M12	65	130	24.2	13.3	12.4	8.2	8.8	5.8	110	85	85	85
M16	85	170	45.8	24.7	23.6	15.2	16.8	10.8	270	110	150	110
M20	105	210	42.0	38.6	28.0	22.7	20.0	16.2	230	135	150	140
M24	120	240	55.0	55.6	36.6	32.7	26.1	23.3	320	155	190	190

### SUPPLEMENTARY DATA

Influence Of Concrete Strength (Cracked/Non-cracked Concrete)					
Concrete strength		C20/25	C30/37	C40/50	C50/60
Cylinder	N/mm <sup>2</sup>	20	30	40	50
Cube	N/mm <sup>2</sup>	25	37	50	60
Factor	-	1.0	1.08*	1.15*	1.19*

Important Note:

When using concrete factors ensure that loads do not exceed Steel Design Resistance.

\* For M16, M20 and M24 the values are 1.12, 1.23 and 1.30 respectively.

### Steel Failure

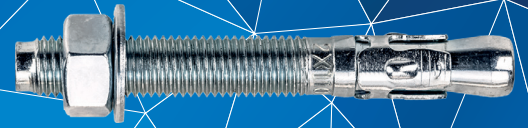
Size Of Thread	Tensile Resistance			Shear Resistance		
	Characteristic Resistance ( $N_{Rk,s}$ )	Design Resistance ( $N_{Rd,s}$ )*	Approved Resistance ( $N_{Ra,s}$ )	Characteristic Resistance ( $V_{Rk,s}$ )	Design Resistance ( $V_{Rd,s}$ **)	Approved Resistance ( $V_{Ra,s}$ )
-	kN	kN	kN	kN	kN	kN
M6	5.7	2.9	2.0	3.2	1.9	1.3
M8	10.5	5.4	3.8	5.8	3.5	2.5
M10	16.6	8.5	6.0	9.1	5.6	4.0
M12	24.2	12.4	8.8	13.3	8.2	5.8
M16	45.8	23.6	16.8	24.7	15.2	10.8
M20	70.7	34.6	24.7	38.6	22.7	16.2
M24	102.0	50.0	35.7	55.6	32.7	23.3

\* A partial safety factor ( $\gamma_{MS}$ ) equal to 1.94 for M6 to M16 and 2.04 for the rest is included.

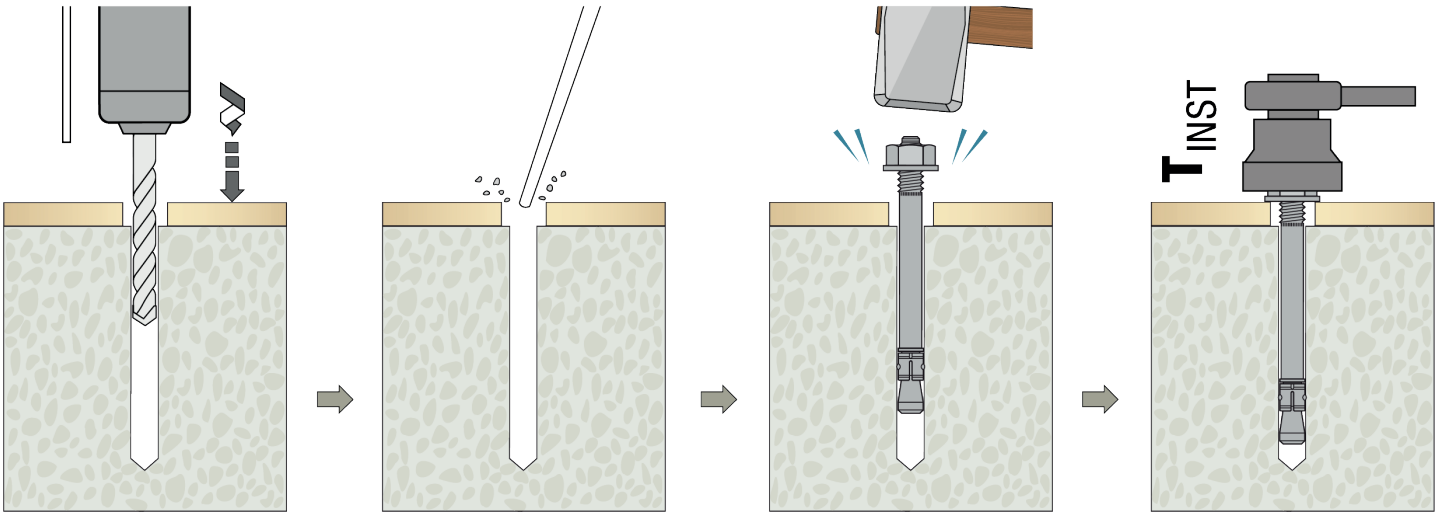
\*\* A partial safety factor ( $\gamma_{VMS}$ ) equal to 1.62 for M6 to M16 and 1.70 for the rest is included.

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**INSTALLATION INSTRUCTIONS**



-Position fixture and drill correct diameter hole to corresponding depth

-Clean hole by blowing to remove drilling debris and dust

-Insert anchor through fixture into concrete and lightly hammer into concrete

-Tighten with torque wrench to recommended torque

**INSTALLATION INSTRUCTIONS VIDEO**

To watch the video and subscribe, please click on the link or scan the QR code:

[How to install a Throughbolt](#)

