



**MTH**



**MTH-AT**



**MTH-A2**



**MTH-A4**



## CHARACTERISTICS

- Roughness working principle; installation by controlled torque.
- Use for high loads.
- Assessed for two installation depths.
- Easy installation.
- Use in non-cracked concrete.
- Previous installation, or through the fixture.
- Use for static or quasi-static loads.
- Three versions zinc plated, stainless steel A2 and A4.
- Variety of lengths and sizes, assembly flexibility.
- DIN 440 for fixing wood structures to concrete.
- Available in INDEXcal

## BASE MATERIAL



## SIZE RANGE

**M6 - M20**

## DRILL HOLE CONDITION



DRY

WET

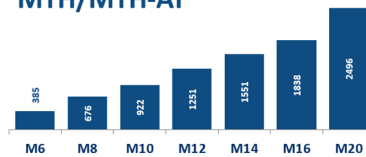
FLOODED

## APPLICATION

- Structural applications in non-cracked concrete.
- Safety barriers.
- Billboards, machinery, boilers, signals, Steel beams, etc.
- Fixings wood structures in concrete.

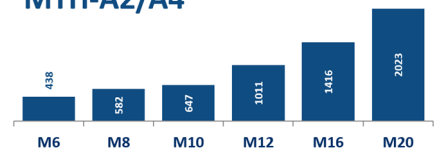
## MAXIMUM LOADS RECOMMENDED IN NON-CRACKED CONCRETE [kg]

### MTH/MTH-AT



\*M14 only for MTH

### MTH-A2/A4

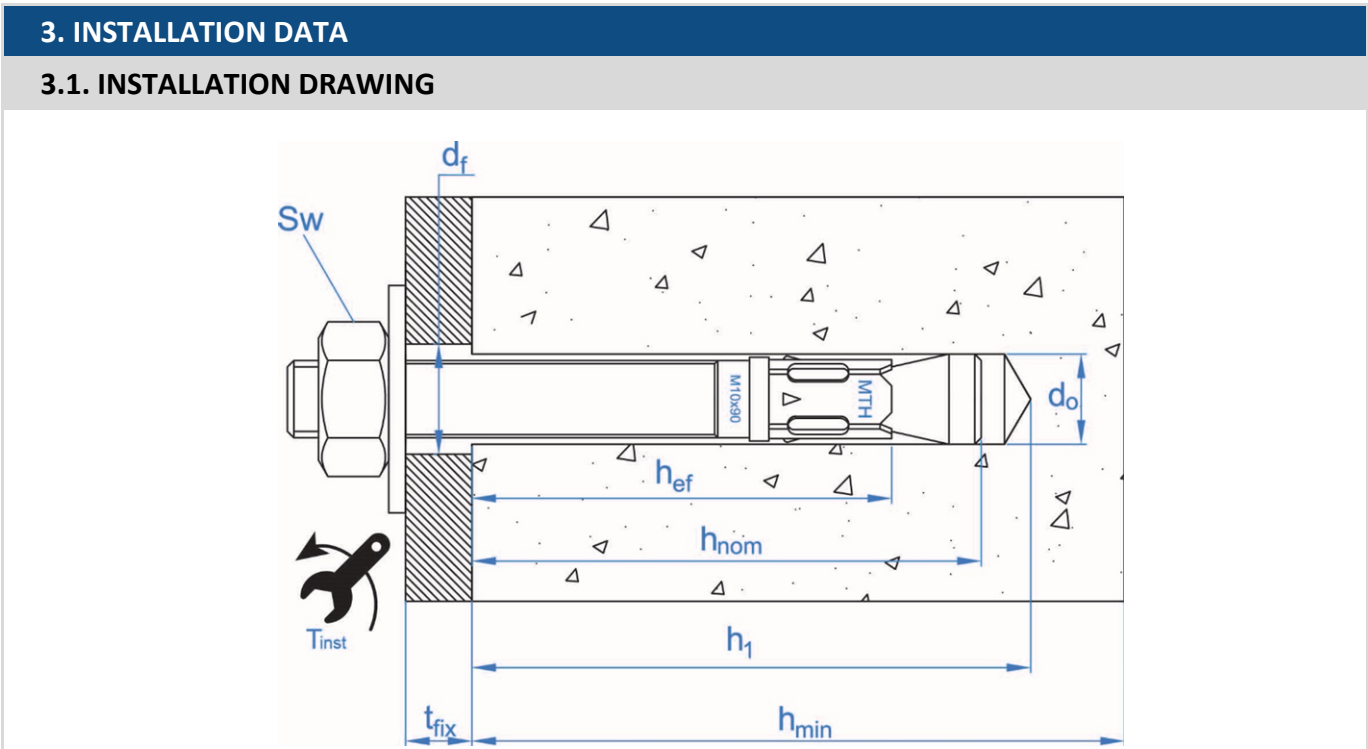


## APPLICATION EXAMPLES



1. RANGE					
ITEM	CODE	SIZE	PHOTO	COMPONENT	MATERIAL
1	AH	M6 to M20		Bolt Clip Nut Washer	Carbon steel cold formed, zinc-plated $\geq 5\mu\text{m}$ Carbon steel, zinc-plated $\geq 5\mu\text{m}$ DIN 934 class 6 ISO 898-1 zinc-plated $\geq 5\mu\text{m}$ DIN 125, DIN 9021 o DIN 440 zinc-plated $\geq 5\mu\text{m}$
2	AHAT	M6 to M20		Bolt Clip Nut Washer	Carbon steel cold formed, atlantis $\geq 8\mu\text{m}$ Carbon steel, atlantis $\geq 8\mu\text{m}$ DIN 934 class 6 ISO 898-1 atlantis $\geq 8\mu\text{m}$ DIN 125, DIN 9021 o DIN 440 atlantis $\geq 8\mu\text{m}$
3	MI	M6 to M20		Bolt Clip Nut Washer	Stainless steel, grade A2 Stainless steel, grade A2 DIN 934 stainless steel, grade A2 DIN 125, DIN 9021 o DIN 440 stainless steel, grade A2
4	MIA4	M6 to M20		Bolt Clip Nut Washer	Stainless steel, grade A4 Stainless steel, grade A4 DIN 934 stainless steel, grade A4 DIN 125, DIN 9021 o DIN 440 stainless steel, grade A4

2. ACCESSORIES			
ITEM	CODE	PHOTO	DESCRIPTION
1	DOMTA		Accessory for anchor installation with hammer drill
2	TP-MT		Plastic plug for MT, colors black and white (M6 to M16)



3.2. INSTALLATION PARAMETERS

General installation parameters				Standard installation depth												Reduced installation depth													
Family	Code	Size / Bolt Letter	Assessed	Drill bit diameter	Fixture clearance hole	Torque	Minimum allowable spacing	Minimum allowable edge distance	Minimum concrete thickness	Depth of drill hole ≥	Installation depth	Effective anchorage depth	Thickness of fixture ≤	Critical spacing (concrete cono)	Critical edge distance(concrete cone)	Critical spacing (splitting)	Critical edge distance(splitting)	Minimum concrete thickness	Depth of drill hole ≥	Installation depth	Effective anchorage depth	Thickness of fixture ≤	Critical spacing (concrete cono)	Critical edge distance(concrete cone)	Critical spacing (splitting)	Critical edge distance(splitting)			
[--]	[--]	[--]	ETA	d <sub>0</sub>	d <sub>f</sub>	T <sub>inst</sub>	S <sub>min</sub>	C <sub>min</sub>	h <sub>min</sub>	h <sub>1</sub>	h <sub>nom</sub>	h <sub>ef</sub>	t <sub>fix</sub>	S <sub>cr,N</sub>	C <sub>cr,N</sub>	S <sub>cr,sp</sub>	C <sub>cr,sp</sub>	h <sub>min</sub>	h <sub>1</sub>	h <sub>nom</sub>	h <sub>ef</sub>	t <sub>fix</sub>	S <sub>cr,N</sub>	C <sub>cr,N</sub>	S <sub>cr,sp</sub>	C <sub>cr,sp</sub>			
				[mm]	[mm]	[Nm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]		
MTH	AH06060	M6 x 60 (B)	✓	6	7	7	35	35	100	55	49,5	40	2	120	60	160	80	--	--	--	--	--	--	--	--	--	--	--	
	AH06070	M6 x 70 (C)	✓										12																--
	AH06080	M6 x 80 (D)	✓										22																--
	AH06090	M6 x 90 (E)	✓										32																--
	AH06100	M6 x 100 (E)	✓										42																--
	AH06110	M6 x 110 (F)	✓										52																--
	AH06120	M6 x 120 (G)	✓										62																--
	AH06130	M6 x 130 (H)	✓										72																--
	AH06140	M6 x 140 (I)	✓										82																--
	AH06150	M6 x 150 (I)	✓										92																--
	AH06160	M6 x 160 (J)	✓										102																--
	AH06170	M6 x 170 (K)	✓										112																--
	AH06180	M6 x 180 (L)	✓	122	--																								
	AH08060	M8 x 60 (B)	✓	8	9	20	40	40	--	--	--	--	--	--	--	--	--	--	100	50	46,5	35	3	105	53	140	70		
	AH08075	M8 x 75 (C)	✓						5	18																			
	AH08090	M8 x 90 (E)	✓						20	33																			
	AH08100	M8 x 100 (E)	✓						30	43																			
	AH08115	M8 x 115 (G)	✓						45	58																			
	AH08120	M8 x 120 (G)	✓						50	63																			
	AH08130	M8 x 130 (H)	✓						60	73																			
	AH08155	M8 x 155 (J)	✓						85	98																			
AH10070	M10 x 70 (C)	✓	10	12	35	50	50	--	--	--	--	--	--	--	--	--	--	100	60	53,5	42	3	126	63	168	84			
AH10080	M10 x 80 (D)	✓						--	13																				
AH10090	M10 x 90 (E)	✓						10	23																				
AH10100	M10 x 100 (E)	✓						20	33																				
AH10120	M10 x 120 (G)	✓						40	53																				

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[--]	[--]	[--]	ETA	$d_0$	$d_f$	$T_{inst}$	$S_{min}$	$C_{min}$	$h_{min}$	$h_1$	$h_{nom}$	$h_{ef}$	$t_{fix}$	$S_{cr,N}$	$C_{cr,N}$	$S_{cr,sp}$	$C_{cr,sp}$	$h_{min}$	$h_1$	$h_{nom}$	$h_{ef}$	$t_{fix}$	$S_{cr,N}$	$C_{cr,N}$	$S_{cr,sp}$	$C_{cr,sp}$													
				[mm]	[mm]	[Nm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]													
MTH	AH10140	M10 x 140 (I)	✓	10	12	35	50	50	110	75	66,5	55	60	165	83	220	110	100	60	53,5	42	73	126	63	168	84													
	AH10150	M10 x 150 (I)	✓										70									83																	
	AH10160	M10 x 160 (J)	✓										80									93																	
	AH10170	M10 x 170 (K)	✓										90									103																	
	AH10210	M10 x 210 (N)	✓										130									143																	
	AH10230	M10 x 230 (P)	✓										150									163																	
	AH12090	M12 x 90 (E)	✓	12	14	60	70	70	--	--	--	--	--	--	--	--	--	100	70	62	50	13	150	75	200	100													
	AH12100	M12 x 100 (E)	✓						8	23																													
	AH12110	M12 x 110 (F)	✓						18	33																													
	AH12120	M12 x 120 (G)	✓						28	43																													
	AH12130	M12 x 130 (H)	✓						38	53																													
	AH12140	M12 x 140 (I)	✓						48	63																													
	AH12160	M12 x 160 (J)	✓						68	83																													
	AH12180	M12 x 180 (L)	✓						88	103																													
	AH12200	M12 x 200 (M)	✓						108	123																													
	AH12220	M12 x 220 (O)	✓						128	143																													
	AH12250	M12 x 250 (Q)	✓						158	173																													
	AH14120	M14 x 120 (G)	✓						14	16	90	80	80	150	100	91	75					12					225	113	300	150	--	--	--	--	--	--	--	--	--
	AH14145	M14 x 145 (I)	✓																			37													--				
	AH14170	M14 x 170 (K)	✓																			62													--				
AH14220	M14 x 220 (O)	✓	112	--																																			
AH14250	M14 x 250 (Q)	✓	142	--																																			

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Family	Code	Size / Bolt Letter	Assessed	Drill bit diameter	Fixture clearance hole	Torque	Minimum allowable spacing	Minimum allowable edge distance	Minimum concrete thickness	Depth of drill hole ≥	Installation depth	Effective anchorage depth	Thickness of fixture ≤	Critical spacing (concrete cono)	Critical edge distance(concrete cone)	Critical spacing (splitting)	Critical edge distance(splitting)	Minimum concrete thickness	Depth of drill hole ≥	Installation depth	Effective anchorage depth	Thickness of fixture ≤	Critical spacing (concrete cono)	Critical edge distance(concrete cone)	Critical spacing (splitting)	Critical edge distance(splitting)																						
[--]	[--]	[--]	ETA	d <sub>0</sub>	d <sub>f</sub>	T <sub>inst</sub>	S <sub>min</sub>	C <sub>min</sub>	h <sub>min</sub>	h <sub>1</sub>	h <sub>nom</sub>	h <sub>ef</sub>	t <sub>fix</sub>	S <sub>cr,N</sub>	C <sub>cr,N</sub>	S <sub>cr,sp</sub>	C <sub>cr,sp</sub>	h <sub>min</sub>	h <sub>1</sub>	h <sub>nom</sub>	h <sub>ef</sub>	t <sub>fix</sub>	S <sub>cr,N</sub>	C <sub>cr,N</sub>	S <sub>cr,sp</sub>	C <sub>cr,sp</sub>																						
				[mm]	[mm]	[Nm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]																					
MTH	AH16125	M16 x 125 (G)	✓	16	18	120	90	90	168	110	103,5	84	3	252	126	280	140	130	90	84,5	65	22	195	98	260	130																						
	AH16145	M16 x 145 (I)	✓										42																																			
	AH16170	M16 x 170 (K)	✓										67																																			
	AH16220	M16 x 220 (O)	✓										117																																			
	AH16250	M16 x 250 (Q)	✓										147																																			
	AH16280	M16 x 280 (S)	✓										177																																			
	AH20170	M20 x 170 (K)	✓										23																																			
	AH20220	M20 x 220 (O)	✓										73																																			
MTH-A2	AH20270	M20 x 270 (S)	✓	20	22	240	135	135	206	135	125	103	123	309	155	360	180	150	107	97	75	99	225	113	300	150																						
	MI06045	M6 x 45 (A)	✗										--									--					--	--	--	--	--	--	--	--	--	--	--	--	100	40	35	25	1	75	38	160	80	
MTH-A2	MI06060	M6 x 60 (B)	✓	6	7	7	50	50	100	55	49,5	40	2	120	60	160	80	--	--	--	--	--	--	--	--	--																						
	MI06080	M6 x 80 (D)	✓										22																																			
	MI06120	M6 x 120 (G)	✓										62																																			
	MI06140	M6 x 140 (I)	✓										82																																			
	MI06160	M6 x 160 (J)	✓										102																																			
	MI06170	M6 x 170 (K)	✓										112																																			
	MI06180	M6 x 180 (L)	✓										122																																			
	MI08050	M8 x 50 (A)	✗										--									--					--	--	--	--	--	--	--	--	--	--	--	--	100	40	35	23	4	69	35	140	70	
	MI08075	M8 x 75 (C)	✓										5																																			
	MI08090	M8 x 90 (E)	✓										20																																			
	MI08115	M8 x 115 (G)	✓										45																																			
	MI10070	M10 x 70 (C)	✓										--									--					--	--	--	--	--	--	--	--	--	--	--	--	--	100	60	53,5	42	3	126	63	168	84
	MI10090	M10 x 90 (E)	✓										10																																			
	MI10120	M10 x 120 (G)	✓										40																																			
MI10150	M10 x 150 (I)	✓	70																																													

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																											ETA	d <sub>0</sub> [mm]	d <sub>f</sub> [mm]	T <sub>inst</sub> [Nm]
MTH-A2	M112075	M12 x 75 (C)	[x]	12	14	60	85	85	--	--	--	--	--	--	--	--	100	60	55	43	5	129	65	200	100					
	M112090	M12 x 90 (D)	✓						--	--	--	--	--	--	--	--	--	--	--	--	--	100	70	62	50	13	150	75	200	100
	M112110	M12 x 110 (F)	✓						130	85	77	65	18	48	195	98	260	130	33	63	--	--	--	--	--	--	--	--	--	--
	M112140	M12 x 140 (I)	✓	16	18	120	110	110	--	--	--	--	--	--	--	--	--	100	75	69	49	4	147	74	280	140				
	M116090	M16 x 90 (D)	[x]						--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	M116145	M16 x 145 (I)	✓						168	110	103,5	84	23	48	252	126	336	168	--	--	--	--	--	--	--	--	--	--	--	--
	M116170	M16 x 170 (K)	✓	20	22	240	135	135	--	--	--	--	--	--	--	--	--	145	105	93	71	5	213	107	360	180				
	M120120	M20 x 120 (G)	[x]						206	135	125	103	23	73	309	155	412	200	--	--	--	--	--	--	--	--	--	--	--	
	M120170	M20 x 170 (K)	✓						--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
M120220	M20 x 220 (O)	✓	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--						
MTH-A4	MIA406045	M6 x 45 (A)	[x]	6	7	7	50	50	--	--	--	--	--	--	--	--	100	40	35	25	1	75	38	160	80					
	MIA406060	M6 x 60 (B)	✓						100	55	49,5	40	2	22	120	60	160	80	--	--	--	--	--	--	--	--	--	--	--	
	MIA406080	M6 x 80 (D)	✓						--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	MIA408050	M8 x 50 (A)	[x]	8	9	20	65	65	--	--	--	--	--	--	--	--	--	100	40	35	23	4	69	35	140	70				
	MIA408075	M8 x 75 (C)	✓						5	8	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	MIA408090	M8 x 90 (E)	✓						100	65	59,5	48	20	45	144	72	192	96	100	50	46,5	35	23	58	105	53	140	70		
	MIA408115	M8 x 115 (G)	✓	10	12	35	70	70	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--				
	MIA410070	M10 x 70 (C)	✓						10	3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	MIA410090	M10 x 90 (E)	✓						110	75	66,5	55	10	40	165	83	220	110	100	60	53,5	42	23	53	126	63	168	84		
	MIA410120	M10 x 120 (G)	✓	12	14	60	85	85	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--				
	MIA410150	M10 x 150 (I)	✓						110	75	66,5	55	10	40	165	83	220	110	100	60	53,5	42	23	53	126	63	168	84		
	MIA412075	M12 x 75 (C)	[x]						130	85	77	65	18	48	195	98	260	130	100	70	62	50	33	63	150	75	200	100		
	MIA412090	M12 x 90 (D)	✓	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--					
	MIA412110	M12 x 110 (F)	✓	12	14	60	85	85	--	--	--	--	--	--	--	--	--	100	60	55	43	5	129	65	200	100				
MIA412140	M12 x 140 (I)	✓	130						85	77	65	18	48	195	98	260	130	100	70	62	50	33	63	150	75	200	100			

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[--]	[--]	[--]	ETA	$d_0$ [mm]	$d_f$ [mm]	$T_{inst}$ [Nm]	$S_{min}$ [mm]	$C_{min}$ [mm]	$h_{min}$ [mm]	$h_1$ [mm]	$h_{nom}$ [mm]	$h_{ef}$ [mm]	$t_{fix}$ [mm]	$S_{cr,N}$ [mm]	$C_{cr,N}$ [mm]	$S_{cr,sp}$ [mm]	$C_{cr,sp}$ [mm]	$h_{min}$ [mm]	$h_1$ [mm]	$h_{nom}$ [mm]	$h_{ef}$ [mm]	$t_{fix}$ [mm]	$S_{cr,N}$ [mm]	$C_{cr,N}$ [mm]	$S_{cr,sp}$ [mm]	$C_{cr,sp}$ [mm]				
MTH-A4	MIA416090	M16 x 90 (D)	[x]	16	18	120	110	110	--	--	--	--	--	--	--	--	--	100	75	69	49	4	147	74	280	140				
	MIA416145	M16 x 145 (I)	✓						168	110	103,5	84	23	252	126	336	168	--	--	--	--	--	--	--	--	--	--	--	--	--
	MIA416170	M16 x 170 (K)	✓						--	--	--	--	--	--	--	--	--	--	--	--	--	--	145	105	93	71	5	213	107	360
	MIA420120	M20 x 120 (G)	[x]	20	22	240	135	135	206	135	125	103	23	309	155	412	206	--	--	--	--	--	--	--	--	--	--			
	MIA420170	M20 x 170 (K)	✓						206	135	125	103	73	309	155	412	206	--	--	--	--	--	--	--	--	--	--	--	--	--
MIA420220	M20 x 220 (O)	✓	206	135	125	103	73	309	155	412	206	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--				

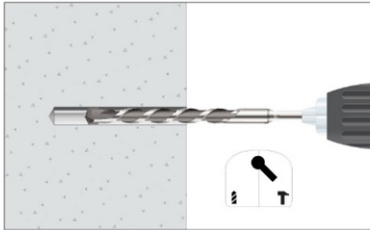
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General installation parameters				Standard installation depth														Reduced installation depth													
Family	Code	Size / Bolt Letter	Assessed	Drill bit diameter	Fixture clearance hole	Torque	Minimum allowable spacing	Minimum allowable edge distance	Minimum concrete thickness	Depth of drill hole ≥	Installation depth	Effective anchorage depth	Thickness of fixture ≤	Critical spacing (concrete cono)	Critical edge distance(concrete cone)	Critical spacing (splitting)	Critical edge distance(splitting)	Minimum concrete thickness	Depth of drill hole ≥	Installation depth	Effective anchorage depth	Thickness of fixture ≤	Critical spacing (concrete cono)	Critical edge distance(concrete cone)	Critical spacing (splitting)	Critical edge distance(splitting)					
[--]	[--]	[--]	ETA	d <sub>0</sub> [mm]	d <sub>f</sub> [mm]	T <sub>inst</sub> [Nm]	S <sub>min</sub> [mm]	C <sub>min</sub> [mm]	h <sub>min</sub> [mm]	h <sub>1</sub> [mm]	h <sub>nom</sub> [mm]	h <sub>ef</sub> [mm]	t <sub>fix</sub> [mm]	S <sub>cr,N</sub> [mm]	C <sub>cr,N</sub> [mm]	S <sub>cr,sp</sub> [mm]	C <sub>cr,sp</sub> [mm]	h <sub>min</sub> [mm]	h <sub>1</sub> [mm]	h <sub>nom</sub> [mm]	h <sub>ef</sub> [mm]	t <sub>fix</sub> [mm]	S <sub>cr,N</sub> [mm]	C <sub>cr,N</sub> [mm]	S <sub>cr,sp</sub> [mm]	C <sub>cr,sp</sub> [mm]					
MTH-AT	AHAT06060	M6 x 60 (B)	✓	6	7	7	35	35	100	55	49,5	40	2	120	60	160	80	--	--	--	--	--	--	--	--	--	--	--			
	AHAT06080	M6 x 80 (D)	✓										22																		
	AHAT06100	M6 x 100 (E)	✓										42																		
	AHAT08060	M8 x 60 (B)	✓	8	9	20	40	40	100	65	59,5	48	--	--	--	--	--	--	100	50	46,5	35	3	105	53	140	70	--	--	--	--
	AHAT08075	M8 x 75 (C)	✓																				5								
	AHAT08090	M8 x 90 (E)	✓																				20								
	AHAT08115	M8 x 115 (G)	✓																				45								
	AHAT08120	M8 x 120 (G)	✓																				50								
	AHAT08130	M8 x 130 (H)	✓																				60								
	AHAT08155	M8 x 155 (J)	✓																				85								
	AHAT10070	M10 x 70 (C)	✓																				10								
	AHAT10080	M10 x 80 (D)	✓	13																											
	AHAT10090	M10 x 90 (E)	✓	23																											
	AHAT10100	M10 x 100 (E)	✓	33																											
	AHAT10120	M10 x 120 (G)	✓	53																											
	AHAT10140	M10 x 140 (I)	✓	73																											
	AHAT10150	M10 x 150 (I)	✓	83																											
	AHAT10160	M10 x 160 (J)	✓	93																											
	AHAT10170	M10 x 170 (K)	✓	103																											
	AHAT10210	M10 x 210 (N)	✓	143																											
	AHAT12090	M12 x 90 (E)	✓	12	14	60	70	70	130	85	77	65	8	195	98	260	130	100	70	62	50	13	150	75	200	100	--	--	--	--	
	AHAT12100	M12 x 100 (E)	✓						23																						
	AHAT12110	M12 x 110 (F)	✓						33																						
	AHAT12130	M12 x 130 (H)	✓						53																						
	AHAT12140	M12 x 140 (I)	✓						63																						
	AHAT12160	M12 x 160 (J)	✓						83																						
	AHAT12180	M12 x 180 (L)	✓						103																						
	AHAT12200	M12 x 200 (M)	✓						123																						
AHAT12220	M12 x 220 (O)	✓	143																												
AHAT12250	M12 x 250 (Q)	✓	173																												



**4. INSTALLATION PROCEDURE**

**4.1 CONCRETE INSTALLATION**



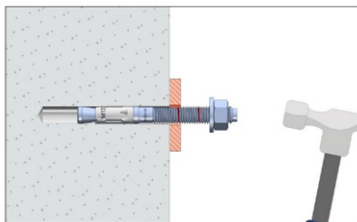
**1. DRILLING**

Check the concrete is well compacted and without significant porosity. Suitable for dry, wet and flooded holes. Use drill in hammer mode. Drill according to specified depths in previous tables.



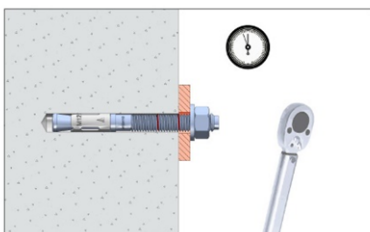
**2. BLOW AND CLEAN**

Clean the hole from dust and concrete remains. Use blow pump and brush.



**3. INSTALL**

Insert the anchor until the red depth mark is at the same level with the surface of the base material. Use a hammer in case of need. DOMTA tool could be used alternatively. Installation could be performed through the fixture or before setting the fixture.



**4. APPLY THE TORQUE**

Apply the nominal torque specified in previous tables. Use torque wrench in order to ensure correct installation.

**5. RESISTANCES**

Resistances in concrete class C20/25 for an isolated anchor without spacing or concrete edge distance effects are indicated in the following table:

**5.1 CHARACTERISTIC RESISTANCE [kN]**

General Parameter				Standard installation depth		Reduced installation depth	
Family	Code	Size	Assessed	Tension	Shear	Tension	Shear
				N <sub>Rk</sub>	V <sub>Rk</sub>	N <sub>Rk</sub>	V <sub>Rk</sub>
MTH	AH06060	M6 x 60	✓	<u>7,40</u>	<u>5,10</u>	--	--
	AH06070	M6 x 70	✓				
	AH06080	M6 x 80	✓				
	AH06090	M6 x 90	✓				
	AH06100	M6 x 100	✓				
	AH06110	M6 x 110	✓				
	AH06120	M6 x 120	✓				
	AH06130	M6 x 130	✓				
	AH06140	M6 x 140	✓				
	AH06150	M6 x 150	✓				
	AH06160	M6 x 160	✓				
	AH06170	M6 x 170	✓				
	AH06180	M6 x 180	✓				
	AH08060	M8 x 60	✓	--	--	10,00	<b>10,19</b>
	AH08075	M8 x 75	✓	<u>13,00</u>	<u>9,30</u>	10,00	<b>10,19</b>
	AH08090	M8 x 90	✓				
	AH08100	M8 x 100	✓				
	AH08115	M8 x 115	✓				
	AH08120	M8 x 120	✓				
	AH08130	M8 x 130	✓				
	AH08155	M8 x 155	✓	--	--	<b>13,39</b>	<b>13,39</b>
	AH10070	M10 x 70	✓	<u>19,00</u>	<u>14,70</u>	<b>13,39</b>	<b>13,39</b>
	AH10080	M10 x 80	✓				
	AH10090	M10 x 90	✓				
	AH10100	M10 x 100	✓				
	AH10120	M10 x 120	✓				
	AH10140	M10 x 140	✓				
	AH10150	M10 x 150	✓				
	AH10160	M10 x 160	✓				
	AH10170	M10 x 170	✓				
	AH10210	M10 x 210	✓				
	AH10230	M10 x 230	✓	--	--	<b>17,39</b>	<b>17,39</b>
AH12090	M12 x 90	✓	<b>25,78</b>	<u>20,60</u>	<b>17,39</b>	<b>17,39</b>	
AH12100	M12 x 100	✓					
AH12110	M12 x 110	✓					
AH12120	M12 x 120	✓					
AH12130	M12 x 130	✓					
AH12140	M12 x 140	✓					
AH12160	M12 x 160	✓					
AH12180	M12 x 180	✓					
AH12200	M12 x 200	✓					
AH12220	M12 x 220	✓					
AH12250	M12 x 250	✓					
AH14120	M14 x 120	✓	<b>31,95</b>	<u>28,10</u>	--	--	
AH14145	M14 x 145	✓					
AH14170	M14 x 170	✓					
AH14220	M14 x 220	✓					
AH14250	M14 x 250	✓					

General Parameter				Standard installation depth		Reduced installation depth					
Family	Code	Size	Assessed	Tension	Shear	Tension	Shear				
				N <sub>Rk</sub>	V <sub>Rk</sub>	N <sub>Rk</sub>	V <sub>Rk</sub>				
MTH	AH16125	M16 x 125	✓	<b>37,87</b>	<u>38,40</u>	<b>25,78</b>	<u>38,40</u>				
	AH16145	M16 x 145	✓								
	AH16170	M16 x 170	✓								
	AH16220	M16 x 220	✓								
	AH16250	M16 x 250	✓								
	AH16280	M16 x 280	✓								
	AH20170	M20 x 170	✓								
	AH20220	M20 x 220	✓								
AH20270	M20 x 270	✓	<b>51,42</b>	<u>56,30</u>	<b>31,95</b>	<b>63,90</b>					
MTH-A2	MI06045	M6 x 45	[x]	--	--	<b>6,15</b>	<u>6,00</u>				
	MI06060	M6 x 60	✓	<u>10,10</u>	<u>6,00</u>	--	--				
	MI06080	M6 x 80	✓								
	MI06120	M6 x 120	✓								
	MI06140	M6 x 140	✓								
	MI06160	M6 x 160	✓								
	MI06170	M6 x 170	✓								
	MI06180	M6 x 180	✓								
	MI08050	M8 x 50	[x]					--	--	<b>5,43</b>	<b>5,43</b>
	MI08075	M8 x 75	✓	12,00	<u>10,90</u>	9,00	<b>10,19</b>				
	MI08090	M8 x 90	✓								
	MI08115	M8 x 115	✓								
	MI10070	M10 x 70	✓								
	MI10090	M10 x 90	✓	16,00	<u>17,40</u>	12,00	<b>13,39</b>				
	MI10120	M10 x 120	✓								
	MI10150	M10 x 150	✓								
	MI12075	M12 x 75	[x]					--	--	<b>13,87</b>	<b>13,87</b>
	MI12090	M12 x 90	✓	25,00	<u>25,20</u>	16,00	<b>17,39</b>				
	MI12110	M12 x 110	✓								
	MI12140	M12 x 140	✓								
	MI16090	M16 x 90	[x]					--	--	<b>16,87</b>	<b>16,87</b>
	MI16145	M16 x 145	✓	35,00	<u>47,10</u>	--	--				
	MI16170	M16 x 170	✓								
	MI20120	M20 x 120	[x]	--	--	<b>29,43</b>	<b>58,86</b>				
	MI20170	M20 x 170	✓	50,00	<u>73,50</u>	--	--				
	MI20220	M20 x 220	✓								
MTH-A4	MIA406045	M6 x 45	[x]	--	--	<b>6,15</b>	<u>6,00</u>				
	MIA406060	M6 x 60	✓	<u>10,10</u>	<u>6,00</u>	--	--				
	MIA406080	M6 x 80	✓								
	MIA408050	M8 x 50	[x]					--	--	<b>5,43</b>	<b>5,43</b>
	MIA408075	M8 x 75	✓					12,00	<u>10,90</u>	9,00	<b>10,19</b>
	MIA408090	M8 x 90	✓								
	MIA408115	M8 x 115	✓								
	MIA410070	M10 x 70	✓								
	MIA410090	M10 x 90	✓					16,00	<u>17,40</u>	12,00	<b>13,39</b>
	MIA410120	M10 x 120	✓								
	MIA410150	M10 x 150	✓								
	MIA412075	M12 x 75	[x]	--	--	<b>13,87</b>	<b>13,87</b>				
	MIA412090	M12 x 90	✓	25,00	<u>25,20</u>	16,00	<b>17,39</b>				
	MIA412110	M12 x 110	✓								
	MIA412140	M12 x 140	✓								
	MIA416090	M16 x 90	[x]					--	--	<b>16,87</b>	<b>16,87</b>
	MIA416145	M16 x 145	✓	35,00	<u>47,10</u>	--	--				
	MIA416170	M16 x 170	✓								
	MIA420120	M20 x 120	[x]	--	--	<b>29,43</b>	<b>58,86</b>				
	MIA420170	M20 x 170	✓	50,00	<u>73,50</u>	--	--				
MIA420220	M20 x 220	✓									

General Parameter				Standard installation depth		Reduced installation depth	
Family	Code	Size	Assessed	Tension	Shear	Tension	Shear
				N <sub>Rk</sub>	V <sub>Rk</sub>	N <sub>Rk</sub>	V <sub>Rk</sub>
MTH-AT	AHAT06060	M6 x 60	✓				
	AHAT06080	M6 x 80	✓	<u>7,40</u>	<u>5,10</u>	--	--
	AHAT06100	M6 x 100	✓				
	AHAT08060	M8 x 60	✓	--	--	10,00	<b>10,19</b>
	AHAT08075	M8 x 75	✓				
	AHAT08090	M8 x 90	✓				
	AHAT08100	M8 x 100	✓				
	AHAT08115	M8 x 115	✓	<u>13,00</u>	<u>9,30</u>	10,00	<b>10,19</b>
	AHAT08130	M8 x 130	✓				
	AHAT08155	M8 x 155	✓				
	AHAT10070	M10 x 70	✓				
	AHAT10080	M10 x 80	✓	--	--	<b>13,39</b>	<b>13,39</b>
	AHAT10090	M10 x 90	✓				
	AHAT10100	M10 x 100	✓				
	AHAT10120	M10 x 120	✓				
	AHAT10140	M10 x 140	✓				
	AHAT10150	M10 x 150	✓	19,00	<u>14,70</u>	<b>13,39</b>	<b>13,39</b>
	AHAT10160	M10 x 160	✓				
	AHAT10170	M10 x 170	✓				
	AHAT10210	M10 x 210	✓				
	AHAT12090	M12 x 90	✓	--	--	<b>17,39</b>	<b>17,39</b>
	AHAT12100	M12 x 100	✓				
	AHAT12110	M12 x 110	✓				
	AHAT12130	M12 x 130	✓				
	AHAT12140	M12 x 140	✓				
	AHAT12160	M12 x 160	✓	<b>25,78</b>	<u>20,60</u>	<b>17,39</b>	<b>17,39</b>
	AHAT12180	M12 x 180	✓				
	AHAT12200	M12 x 200	✓				
	AHAT12220	M12 x 220	✓				
	AHAT12250	M12 x 250	✓				
AHAT16125	M16 x 125	✓					
AHAT16145	M16 x 145	✓					
AHAT16170	M16 x 170	✓	<b>37,87</b>	<u>38,40</u>	<b>25,78</b>	<u>38,40</u>	
AHAT16220	M16 x 220	✓					
AHAT16250	M16 x 250	✓					
AHAT16280	M16 x 280	✓					
AHAT20170	M20 x 170	✓					
AHAT20220	M20 x 220	✓	<b>51,42</b>	<u>56,30</u>	<b>31,95</b>	<b>63,90</b>	
AHAT20270	M20 x 270	✓					

1 kN ≈ 100 kg  
 Values underlined and in italics show Steel failure, **bold** values concrete failure and other indicate pull out failure.

5.2 DESIGN RESISTANCE [kN]							
General Parameter				Standard installation depth		Reduced installation depths	
Family	Code	Size	Assessed	Tension	Shear	Tension	Shear
				N <sub>Rd</sub>	V <sub>Rd</sub>	N <sub>Rd</sub>	V <sub>Rd</sub>
MTH	AH06060	M6 x 60	✓	<u>5,29</u>	<u>4,08</u>	--	--
	AH06070	M6 x 70	✓				
	AH06080	M6 x 80	✓				
	AH06090	M6 x 90	✓				
	AH06100	M6 x 100	✓				
	AH06110	M6 x 110	✓				
	AH06120	M6 x 120	✓				
	AH06130	M6 x 130	✓				
	AH06140	M6 x 140	✓				
	AH06150	M6 x 150	✓				
	AH06160	M6 x 160	✓				
	AH06170	M6 x 170	✓				
	AH06180	M6 x 180	✓				
	AH08060	M8 x 60	✓	--	--	6,67	6,79
	AH08075	M8 x 75	✓	<u>9,29</u>	<u>7,44</u>	6,67	6,79
	AH08090	M8 x 90	✓				
	AH08100	M8 x 100	✓				
	AH08115	M8 x 115	✓				
	AH08120	M8 x 120	✓				
	AH08130	M8 x 130	✓				
	AH08155	M8 x 155	✓				
	AH10070	M10 x 70	✓	--	--	8,93	8,93
	AH10080	M10 x 80	✓	12,67	<u>11,76</u>	8,93	8,93
	AH10090	M10 x 90	✓				
	AH10100	M10 x 100	✓				
	AH10120	M10 x 120	✓				
	AH10140	M10 x 140	✓				
	AH10150	M10 x 150	✓				
	AH10160	M10 x 160	✓				
	AH10170	M10 x 170	✓				
	AH10210	M10 x 210	✓				
	AH10230	M10 x 230	✓				
	AH12090	M12 x 90	✓	--	--	11,60	11,60
	AH12100	M12 x 100	✓	17,19	<u>16,48</u>	11,60	11,60
	AH12110	M12 x 110	✓				
	AH12120	M12 x 120	✓				
	AH12130	M12 x 130	✓				
	AH12140	M12 x 140	✓				
	AH12160	M12 x 160	✓				
	AH12180	M12 x 180	✓				
AH12200	M12 x 200	✓					
AH12220	M12 x 220	✓					
AH12250	M12 x 250	✓					
AH14120	M14 x 120	✓	21,30	<u>22,48</u>	--	--	
AH14145	M14 x 145	✓					
AH14170	M14 x 170	✓					
AH14220	M14 x 220	✓					
AH14250	M14 x 250	✓					

General Parameter				Standard installation depth		Reduced installation depth					
Family	Code	Size	Assessed	Tension	Shear	Tension	Shear				
				N <sub>Rd</sub>	V <sub>Rd</sub>	N <sub>Rd</sub>	V <sub>Rd</sub>				
MTH	AH16125	M16 x 125	✓	<b>25,25</b>	<u>30,72</u>	<b>17,19</b>	<u>30,72</u>				
	AH16145	M16 x 145	✓								
	AH16170	M16 x 170	✓								
	AH16220	M16 x 220	✓								
	AH16250	M16 x 250	✓	<b>34,28</b>	<u>45,04</u>	<b>21,30</b>	<b>42,60</b>				
	AH16280	M16 x 280	✓								
	AH20170	M20 x 170	✓								
	AH20220	M20 x 220	✓								
AH20270	M20 x 270	✓									
MTH-A2	MI06045	M6 x 45	[x]	--	--	<b>4,10</b>	<u>3,95</u>				
	MI06060	M6 x 60	✓	<u>6,01</u>	<u>3,95</u>	--	--				
	MI06080	M6 x 80	✓								
	MI06120	M6 x 120	✓								
	MI06140	M6 x 140	✓								
	MI06160	M6 x 160	✓								
	MI06170	M6 x 170	✓								
	MI06180	M6 x 180	✓								
	MI08050	M8 x 50	[x]	--	--	<b>3,01</b>	<b>3,62</b>				
	MI08075	M8 x 75	✓	<b>8,00</b>	<u>7,15</u>	5,00	<b>6,79</b>				
	MI08090	M8 x 90	✓								
	MI08115	M8 x 115	✓								
	MI10070	M10 x 70	✓	--	--	6,67	<b>8,93</b>				
	MI10090	M10 x 90	✓	<b>8,89</b>	<u>11,45</u>						
	MI10120	M10 x 120	✓								
	MI10150	M10 x 150	✓								
	MI12075	M12 x 75	[x]	--	--	<b>7,71</b>	<b>9,25</b>				
	MI12090	M12 x 90	✓	--	--	8,89	<b>11,60</b>				
	MI12110	M12 x 110	✓	<b>13,89</b>	<u>16,58</u>						
	MI12140	M12 x 140	✓								
	MI16090	M16 x 90	[x]	--	--	<b>9,37</b>	<b>11,25</b>				
	MI16145	M16 x 145	✓	<b>19,44</b>	<u>30,99</u>	--	--				
	MI16170	M16 x 170	✓								
	MI20120	M20 x 120	[x]	--	--	<b>16,35</b>	<b>39,24</b>				
MI20170	M20 x 170	✓	<b>27,78</b>	<u>48,36</u>	--	--					
MI20220	M20 x 220	✓									
MTH-A4	MIA406045	M6 x 45	[x]	--	--	<b>4,10</b>	<u>3,95</u>				
	MIA406060	M6 x 60	✓	<u>6,01</u>	<u>3,95</u>	--	--				
	MIA406080	M6 x 80	✓								
	MIA408050	M8 x 50	[x]					<b>8,00</b>	<u>7,17</u>	5,00	<b>6,79</b>
	MIA408075	M8 x 75	✓								
	MIA408090	M8 x 90	✓								
	MIA408115	M8 x 115	✓							6,67	<b>8,93</b>
	MIA410070	M10 x 70	✓	--	--						
	MIA410090	M10 x 90	✓	<b>8,89</b>	<u>11,45</u>						
	MIA410120	M10 x 120	✓								
	MIA410150	M10 x 150	✓								
	MIA412075	M12 x 75	[x]	--	--	<b>7,71</b>	<b>9,25</b>				
	MIA412090	M12 x 90	✓	--	--	8,89	<b>11,60</b>				
	MIA412110	M12 x 110	✓	<b>13,89</b>	<u>16,58</u>						
	MIA412140	M12 x 140	✓								
	MIA416090	M16 x 90	[x]	--	--	<b>9,37</b>	<b>11,25</b>				
	MIA416145	M16 x 145	✓	<b>19,44</b>	<u>30,99</u>	--	--				
	MIA416170	M16 x 170	✓								
	MIA420120	M20 x 120	[x]	--	--	<b>16,35</b>	<b>39,24</b>				
	MIA420170	M20 x 170	✓	<b>27,78</b>	<u>48,36</u>	--	--				
MIA420220	M20 x 220	✓									

General Parameter				Standard installation depth		Reduced installation depth	
Family	Code	Size	Assessed	Tension	Shear	Tension	Shear
				N <sub>Rd</sub>	V <sub>Rd</sub>	N <sub>Rd</sub>	V <sub>Rd</sub>
MTH-AT	AHAT06060	M6 x 60	✓				
	AHAT06080	M6 x 80	✓	<u>5,29</u>	<u>4,08</u>	--	--
	AHAT06100	M6 x 100	✓				
	AHAT08060	M8 x 60	✓	--	--	6,67	<b>6,79</b>
	AHAT08075	M8 x 75	✓				
	AHAT08090	M8 x 90	✓				
	AHAT08100	M8 x 100	✓				
	AHAT08115	M8 x 115	✓			6,67	<b>6,79</b>
	AHAT08130	M8 x 130	✓				
	AHAT08155	M8 x 155	✓				
	AHAT10070	M10 x 70	✓				
	AHAT10080	M10 x 80	✓	--	--	<b>8,93</b>	<b>8,93</b>
	AHAT10090	M10 x 90	✓				
	AHAT10100	M10 x 100	✓				
	AHAT10120	M10 x 120	✓				
	AHAT10140	M10 x 140	✓				
	AHAT10150	M10 x 150	✓				
	AHAT10160	M10 x 160	✓				
	AHAT10170	M10 x 170	✓				
	AHAT10210	M10 x 210	✓				
	AHAT12090	M12 x 90	✓	--	--	<b>11,60</b>	<b>11,60</b>
	AHAT12100	M12 x 100	✓				
	AHAT12110	M12 x 110	✓				
	AHAT12130	M12 x 130	✓				
	AHAT12140	M12 x 140	✓				
	AHAT12160	M12 x 160	✓				
	AHAT12180	M12 x 180	✓				
AHAT12200	M12 x 200	✓					
AHAT12220	M12 x 220	✓					
AHAT12250	M12 x 250	✓					
AHAT16125	M16 x 125	✓					
AHAT16145	M16 x 145	✓					
AHAT16170	M16 x 170	✓					
AHAT16220	M16 x 220	✓					
AHAT16250	M16 x 250	✓					
AHAT16280	M16 x 280	✓					
AHAT20170	M20 x 170	✓					
AHAT20220	M20 x 220	✓					
AHAT20270	M20 x 270	✓					
				<b>12,67</b>	<u>11,76</u>	<b>8,93</b>	<b>8,93</b>
				<b>17,19</b>	<u>16,48</u>	<b>11,60</b>	<b>11,60</b>
				<b>25,25</b>	<u>30,72</u>	<b>17,19</b>	<u>30,72</u>
				<b>34,28</b>	<u>45,04</u>	<b>21,30</b>	<b>42,60</b>

1 kN ≈ 100 kg  
 Values underlined and in italics show Steel failure, **bold** values concrete failure and other indicate pull out failure.

**5.3 MAXIMUM LOADS RECOMMENDED [kN] (with  $\gamma_F= 1.4$ )**

General Parameter				Standard installation depth		Reduced installation depth	
Family	Code	Size	Assessed	Tension	Shear	Tension	Shear
				N <sub>rec</sub>	V <sub>rec</sub>	N <sub>rec</sub>	V <sub>rec</sub>
MTH	AH06060	M6 x 60	✓	<u>3,78</u>	<u>2,91</u>	--	--
	AH06070	M6 x 70	✓				
	AH06080	M6 x 80	✓				
	AH06090	M6 x 90	✓				
	AH06100	M6 x 100	✓				
	AH06110	M6 x 110	✓				
	AH06120	M6 x 120	✓				
	AH06130	M6 x 130	✓				
	AH06140	M6 x 140	✓				
	AH06150	M6 x 150	✓				
	AH06160	M6 x 160	✓				
	AH06170	M6 x 170	✓				
	AH06180	M6 x 180	✓				
	AH08060	M8 x 60	✓	--	--	4,76	<b>4,85</b>
	AH08075	M8 x 75	✓	<u>6,63</u>	<u>5,31</u>	4,76	<b>4,85</b>
	AH08090	M8 x 90	✓				
	AH08100	M8 x 100	✓				
	AH08115	M8 x 115	✓				
	AH08120	M8 x 120	✓				
	AH08130	M8 x 130	✓				
	AH08155	M8 x 155	✓				
	AH10070	M10 x 70	✓	--	--	<b>6,38</b>	<b>6,38</b>
	AH10080	M10 x 80	✓	9,05	<u>8,40</u>	<b>6,38</b>	<b>6,38</b>
	AH10090	M10 x 90	✓				
	AH10100	M10 x 100	✓				
	AH10120	M10 x 120	✓				
	AH10140	M10 x 140	✓				
	AH10150	M10 x 150	✓				
	AH10160	M10 x 160	✓				
	AH10170	M10 x 170	✓				
	AH10210	M10 x 210	✓				
	AH10230	M10 x 230	✓				
AH12090	M12 x 90	✓	--	--	<b>8,28</b>	<b>8,28</b>	
AH12100	M12 x 100	✓	<b>12,28</b>	<u>11,77</u>	<b>8,28</b>	<b>8,28</b>	
AH12110	M12 x 110	✓					
AH12120	M12 x 120	✓					
AH12130	M12 x 130	✓					
AH12140	M12 x 140	✓					
AH12160	M12 x 160	✓					
AH12180	M12 x 180	✓					
AH12200	M12 x 200	✓					
AH12220	M12 x 220	✓					
AH12250	M12 x 250	✓					
AH14120	M14 x 120	✓	<b>15,22</b>	<u>16,06</u>	--	--	
AH14145	M14 x 145	✓					
AH14170	M14 x 170	✓					
AH14220	M14 x 220	✓					
AH14250	M14 x 250	✓					



General Parameter				Standard depth		Reduced installation depth				
Family	Code	Size	Assessed	Tension	Shear	Tension	Shear			
				N <sub>rec</sub>	V <sub>rec</sub>	N <sub>rec</sub>	V <sub>rec</sub>			
MTH	AH16125	M16 x 125	✓	<b>18,03</b>	<u>21,94</u>	<b>12,28</b>	<u>21,94</u>			
	AH16145	M16 x 145	✓							
	AH16170	M16 x 170	✓							
	AH16220	M16 x 220	✓							
	AH16250	M16 x 250	✓							
	AH16280	M16 x 280	✓							
	AH20170	M20 x 170	✓							
	AH20220	M20 x 220	✓							
AH20270	M20 x 270	✓	<b>24,49</b>	<u>32,17</u>	<b>15,22</b>	<b>30,43</b>				
MTH-A2	MI06045	M6 x 45	[x]	--	--	<b>2,93</b>	<u>2,82</u>			
	MI06060	M6 x 60	✓	<u>4,29</u>	<u>2,82</u>	--	--			
	MI06080	M6 x 80	✓							
	MI06120	M6 x 120	✓							
	MI06140	M6 x 140	✓							
	MI06160	M6 x 160	✓							
	MI06170	M6 x 170	✓							
	MI06180	M6 x 180	✓							
	MI08050	M8 x 50	[x]					--	--	<b>2,15</b>
	MI08075	M8 x 75	✓	<b>5,71</b>	<u>5,12</u>	3,57	<b>4,85</b>			
	MI08090	M8 x 90	✓							
	MI08115	M8 x 115	✓							
	MI10070	M10 x 70	✓	--	--	4,76	<b>6,38</b>			
	MI10090	M10 x 90	✓							
	MI10120	M10 x 120	✓	6,35	<u>8,18</u>					
	MI10150	M10 x 150	✓							
	MI12075	M12 x 75	[x]	--	--	<b>5,50</b>	<b>6,61</b>			
	MI12090	M12 x 90	✓	--	--	6,35	<b>8,28</b>			
	MI12110	M12 x 110	✓							
	MI12140	M12 x 140	✓	9,92	<u>11,84</u>					
	MI16090	M16 x 90	[x]	--	--	<b>6,70</b>	<b>8,03</b>			
	MI16145	M16 x 145	✓	<b>13,89</b>	<u>22,13</u>	--	--			
	MI16170	M16 x 170	✓							
	MI20120	M20 x 120	[x]					--	--	<b>11,68</b>
	MI20170	M20 x 170	✓	<b>19,84</b>	<u>34,54</u>	--	--			
	MI20220	M20 x 220	✓							
	MIA406045	M6 x 45	[x]					--	--	<b>2,93</b>
	MIA406060	M6 x 60	✓	<u>4,29</u>	<u>2,82</u>	--	--			
MIA406080	M6 x 80	✓								
MIA408050	M8 x 50	[x]	--					--	<b>2,15</b>	<b>2,58</b>
MIA408075	M8 x 75	✓	<b>5,71</b>					<u>5,12</u>	3,57	<b>4,85</b>
MIA408090	M8 x 90	✓								
MIA408115	M8 x 115	✓								
MIA410070	M10 x 70	✓	--					--	4,76	<b>6,38</b>
MIA410090	M10 x 90	✓								
MIA410120	M10 x 120	✓	6,35	<u>8,18</u>						
MIA410150	M10 x 150	✓								
MIA412075	M12 x 75	[x]	--	--	<b>5,50</b>	<b>6,61</b>				
MIA412090	M12 x 90	✓	--	--	6,35	<b>8,28</b>				
MIA412110	M12 x 110	✓								
MIA412140	M12 x 140	✓	9,92	<u>11,84</u>						
MIA416090	M16 x 90	[x]	--	--	<b>6,70</b>	<b>8,03</b>				
MIA416145	M16 x 145	✓	<b>13,39</b>	<u>22,13</u>	--	--				
MIA416170	M16 x 170	✓								
MIA420120	M20 x 120	[x]					--	--	<b>11,68</b>	<b>28,03</b>
MIA420170	M20 x 170	✓	<b>19,84</b>	<u>34,54</u>	--	--				
MIA420220	M20 x 220	✓								

General Parameter				Standard depth		Reduced installation depth	
Family	Code	Size	Assessed	Tension	Shear	Tension	Shear
				N <sub>rec</sub>	V <sub>rec</sub>	N <sub>rec</sub>	V <sub>rec</sub>
MTH-AT	AHAT06060	M6 x 60	✓				
	AHAT06080	M6 x 80	✓	<u>3,78</u>	<u>2,91</u>	--	--
	AHAT06100	M6 x 100	✓				
	AHAT08060	M8 x 60	✓	--	--	4,76	<b>4,85</b>
	AHAT08075	M8 x 75	✓				
	AHAT08090	M8 x 90	✓				
	AHAT08100	M8 x 100	✓				
	AHAT08115	M8 x 115	✓			4,76	<b>4,85</b>
	AHAT08130	M8 x 130	✓				
	AHAT08155	M8 x 155	✓				
	AHAT10070	M10 x 70	✓				
	AHAT10080	M10 x 80	✓	--	--	<b>6,38</b>	<b>6,38</b>
	AHAT10090	M10 x 90	✓				
	AHAT10100	M10 x 100	✓				
	AHAT10120	M10 x 120	✓				
	AHAT10140	M10 x 140	✓				
	AHAT10150	M10 x 150	✓				
	AHAT10160	M10 x 160	✓				
	AHAT10170	M10 x 170	✓				
	AHAT10210	M10 x 210	✓				
	AHAT12090	M12 x 90	✓	--	--	<b>8,28</b>	<b>8,28</b>
	AHAT12100	M12 x 100	✓				
	AHAT12110	M12 x 110	✓				
	AHAT12130	M12 x 130	✓				
	AHAT12140	M12 x 140	✓				
	AHAT12160	M12 x 160	✓				
	AHAT12180	M12 x 180	✓				
	AHAT12200	M12 x 200	✓				
	AHAT12220	M12 x 220	✓				
	AHAT12250	M12 x 250	✓				
AHAT16125	M16 x 125	✓					
AHAT16145	M16 x 145	✓					
AHAT16170	M16 x 170	✓					
AHAT16220	M16 x 220	✓					
AHAT16250	M16 x 250	✓					
AHAT16280	M16 x 280	✓					
AHAT20170	M20 x 170	✓					
AHAT20220	M20 x 220	✓					
AHAT20270	M20 x 270	✓					
				<b>9,05</b>	<u>8,40</u>	<b>6,38</b>	<b>6,38</b>
				<b>12,28</b>	<u>11,77</u>	<b>8,28</b>	<b>8,28</b>
				<b>18,03</b>	<u>21,94</u>	<b>12,28</b>	<u>21,94</u>
				<b>24,49</b>	<u>32,17</u>	<b>15,22</b>	<b>30,43</b>

1 kN ≈ 100 kg  
 Values underlined and in italics show Steel failure, **bold** values concrete failure and other indicate pull out failure.

PULL OUT INCREASINF FACTOR FOR TENSION LOADS IN HIGH RESISTANCE CONCRETE			
CONCRETE FACTOR	C30/37	C40/50	C50/60
$\Psi_c$ (Non-cracked)	1,22	1,41	1,55

## 7. OFFICIAL DOCUMENTATION

The following documents are available through our Sales Department or on our official website: [www.indexfix.com](http://www.indexfix.com):

- European assessment ETA 05/0242 for installation in non-cracked concrete according to guideline EAD 330232-00-0601, option 7, from M6 of M20.
- Declaration of performance DoP MTH.
- Available for the anchor design software INDEXcal.