



MTA

CHARACTERISTICS

- Roughness working principles; installation by controlled torque.
- Use for high loads.
- Valid for two installation depths.
- Easy installation.
- Use in non-cracked concrete.
- Previous installation, or through the fixture.
- Use for static or quasi-static loads.
- Zinc plated version.
- Variety of lengths and sizes, assembly flexibility.
- Available in INDEXcal

BASE MATERIAL



SIZE RANGE

M6 - M24

DRILL HOLE CONDITION



DRY

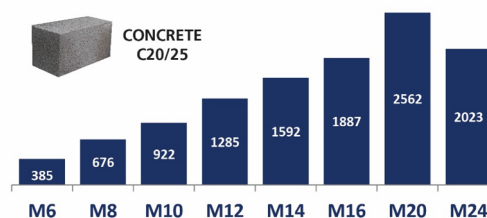
WET

FLOODED

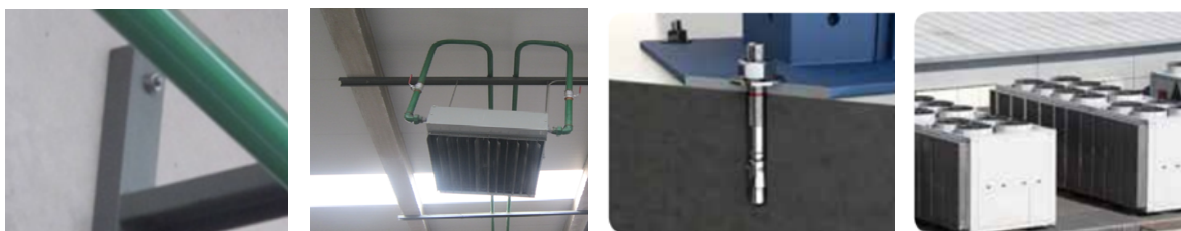
APPLICATION

- 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]



APPLICATIONS EXAMPLES



1. RANGE

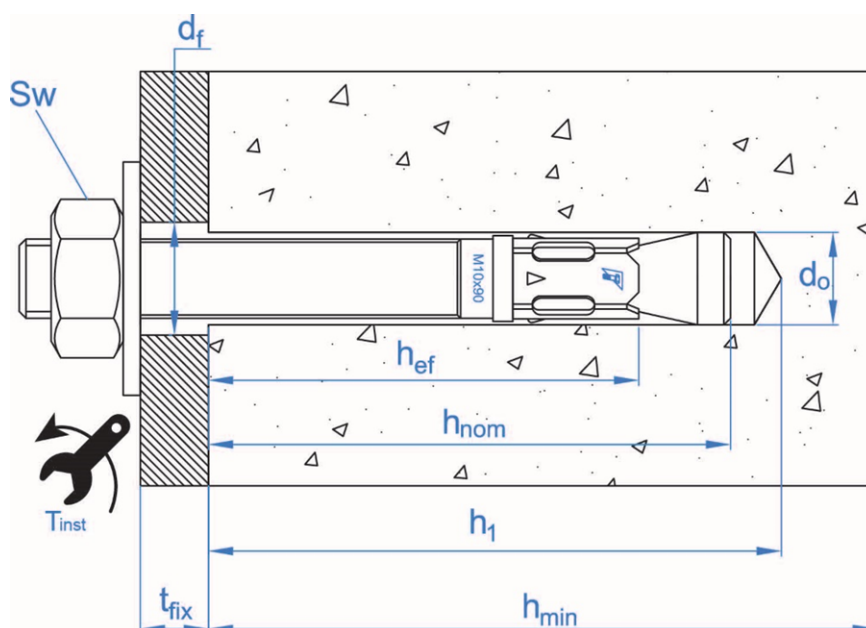
ITEM	CODE	SIZE	PHOTO	COMPONENT	MATERIAL
1	AM	M6 to M24		Bolt Clip Nut Washer	Carbon steel cold formed, zinc-plated $\geq 5\mu\text{m}$ Carbon steel, zinc-plated $\geq 5\mu\text{m}$ DIN 934 class 6 ISO 898-1 zinc-plated $\geq 5\mu\text{m}$ DIN 125, DIN 9021 o DIN 440 zinc-plated $\geq 5\mu\text{m}$

2. 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. INSTALLATION DATA

3.1. INSTALLATION DRAWING



3.2. INSTALLATION PARAMETERS

General installation parameters								Standard installation depth								Reduced installation dep												
Family	Code	Size	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)	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)	Critical spacing (splitting)	Critical edge distance (splitting)			
[--]	[--]	[--]	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]			
MTA	AM06045	M6 x 45	6	7	7	35	35	--	--	--	--	--	--	--	--	--	100	40	35	25	1	75	38	160	80			
	AM06055	M6 x 55						--	--	--	--	--	--	--	--	--					11							
	AM06060	M6 x 60						100	55	49,5	40	2	120	60	160	80	--	--	--	--	--	--	--	--	--	--	--	--
	AM06065	M6 x 65										7									--							
	AM06070	M6 x 70										12									--							
	AM06080	M6 x 80										22									--							
	AM06085	M6 x 85										27									--							
	AM06090	M6 x 90										32									--							
	AM06100	M6 x 100										42									--							
	AM06110	M6 x 110										52									--							
	AM06120	M6 x 120										62									--							
	AM06130	M6 x 130										72									--							
	AM06140	M6 x 140										82									--							
	AM06150	M6 x 150										92									--							
	AM06160	M6 x 160										102									--							
	AM06170	M6 x 170										112									--							
	AM06180	M6 x 180										122									--							
	AM08050	M8 x 50	8	9	20	40	40	--	--	--	--	--	--	--	--	--	100	40	35	23	4	69	35	140	70			
	AM08060	M8 x 60						--	--	--	--	--	--	--	--	--					--					3		
	AM08065	M8 x 65						--	--	--	--	--	--	--	--	--	--	8	100	50	46,5	35	105	53	140	70		
AM08075	M8 x 75	5						18																				
AM08090	M8 x 90	20						33																				
AM08115	M8 x 115	45						43																				
AM08120	M8 x 120	50						58																				
AM08130	M8 x 130	60						63																				
AM08155	M8 x 155	85						73																				

3.2. INTALLATION PARAMETERS

General installation parameters								Standard installation depth								Reduced installation depth									
Family	Code	Size	Drill bit diameter	Fixture clearance hole	Torque	Minimum allowable spacing	Minimum allowable edge distance	Minimum concrete thickness	Depth of drill hole $\geq$	Installation depth	Effective anchorage depth	Thickness of fixture $\leq$	Critical spacing (concrete cono)	Critical edge distance(concrete)	Critical spacing (splitting)	Critical edge distance(splitting)	Minimum concrete thickness	Depth of drill hole $\geq$	Installation depth	Effective anchorage depth	Thickness of fixture $\leq$	Critical spacing (concrete cono)	Critical edge distance(concrete)	Critical spacing (splitting)	Critical edge distance(splitting)
[--]	[--]	[--]	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]
MTA	AM10065	M10 x 65	10	12	35	50	50	--	--	--	--	--	--	--	--	--	100	55	52	40	1	120	60	168	84
	AM10070	M10 x 70						--	--	--	--	--	--	--	--	--	100	60	53,5	42	3	126	63	168	84
	AM10080	M10 x 80						--	--	--	--	--	--	--	--	13									
	AM10090	M10 x 90						110	75	66,5	55	10	165	83	220	110					23				
	AM10100	M10 x 100										20									33				
	AM10120	M10 x 120										40									53				
	AM10140	M10 x 140										60									73				
	AM10150	M10 x 150										70									83				
	AM10160	M10 x 160										80									93				
	AM10170	M10 x 170										90									103				
	AM10210	M10 x 210										130									143				
	AM10230	M10 x 230										150									163				
	AM12075	M12 x 75	12	14	60	70	70	--	--	--	--	--	--	--	--	100	60	55	43	5	129	65	200	100	
	AM12080	M12 x 80						--	--	--	--	--	--	--	--	--	100	70	62	50	3	150	75	200	100
	AM12090	M12 x 90						--	--	--	--	--	--	--	--	--					13				
	AM12100	M12 x 100						130	85	77	65	8	195	98	260	130					23				
	AM12110	M12 x 110										18									33				
	AM12120	M12 x 120										28									43				
	AM12140	M12 x 140										48									63				
	AM12160	M12 x 160										68									83				
	AM12180	M12 x 180										88									103				
	AM12220	M12 x 220										128									143				
	AM12250	M12 x 250										158									173				

3.2. INTALLATION PARAMETERS

General installation parameters								Standard installation depth									Reduced installation depth									
Family	Code	Size	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 t_{fix}	Critical spacing (concrete cono)	Critical edge distance (concrete)	Critical spacing (splitting)	Critical edge distance (splitting)	Minimum concrete thickness	Depth of drill hole ≥	Installation depth	Effective anchorage depth	Thickness of fixture t_{fix}	Critical spacing (concrete cono)	Critical edge distance (concrete)	Critical spacing (splitting)	Critical edge distance (splitting)	
[--]	[--]	[--]	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]	
MTA	AM14080	M14 x 80	14	16	90	80	80	--	--	--	--	--	--	--	--	--	100	65	59	42	5	126	63	300	150	
	AM14100	M14 x 100						--	--	--	--	--	--	--	--	--	100	85	79	62	5	186	93	300	150	
	AM14120	M14 x 120						150	100	91	75	12	225	113	300	150	--	--	--	--						
	AM14145	M14 x 145										37														
	AM14170	M14 x 170										62														
	AM14220	M14 x 220										112														
	AM14250	M14 x 250										142														
	AM16090	M16 x 90	--	--	--	--	--	--	--	--	100	75	69	49	4	147	74	260	130							
	AM16110	M16 x 110	--	--	--	--	--	--	--	--	--	--	--	--	7	195	98	260	130							
	AM16125	M16 x 125	168	110	103,5	84	3	252	126	280	140	130	90	84,5	65					22						
	AM16145	M16 x 145					23													42						
	AM16170	M16 x 170					48													67						
	AM16220	M16 x 220					98													117						
	AM16250	M16 x 250					128													147						
	AM16280	M16 x 280					158													177						
	AM20120	M20 x 120	20	22	240	135	135	--	--	--	--	--	--	--	--	--	150	105	93	71	5	213	107	300	150	
	AM20170	M20 x 170						206	135	125	103	23	309	155	360	180	150	107	97	75	47	225	113	300	150	
	AM20220	M20 x 220										73									97					
	AM20270	M20 x 270										123									147					
	AM24180	M24 x 180	24	26	250	160	160	250	155	143	125	10	375	188	560	280	--	--	--	--	--	--	--	--	--	
	AM24260	M24 x 260										90									--					

4. INSTALLATION PROCEDURE

4.1. CONCRETE INSTALLATION



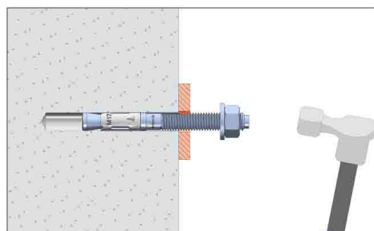
1. DRILLING

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..



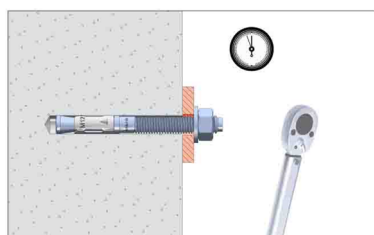
2. BLOW AND CLEAN

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



3. INSTALL

Insert the anchorage according to data specified in previous tables.
 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 parameters			Standard installation depth		Reduced installation depth	
Family	Code	Size	Tension N_{Rk}	Shear V_{Rk}	Tension N_{Rk}	Shear V_{Rk}
MTA	AM06045	M6 x 45	6,15	<u>5,10</u>	--	--
	AM06055	M6 x 55				
	AM06060	M6 x 60				
	AM06065	M6 x 65	<u>7,40</u>	<u>5,10</u>	--	--
	AM06070	M6 x 70				
	AM06080	M6 x 80				
	AM06085	M6 x 85				
	AM06090	M6 x 90				
	AM06100	M6 x 100				
	AM06110	M6 x 110				
	AM06120	M6 x 120				
	AM06130	M6 x 130				
	AM06140	M6 x 140				
	AM06150	M6 x 150				
	AM06160	M6 x 160				
	AM06170	M6 x 170				
	AM06180	M6 x 180				
	AM08050	M8 x 50	--	--	5,43	5,43
	AM08060	M8 x 60	--	--	10,00	10,19
	AM08065	M8 x 65				
	AM08075	M8 x 75				
	AM08090	M8 x 90	<u>13,00</u>	<u>9,30</u>	10,00	10,19
	AM08115	M8 x 115				
	AM08120	M8 x 120				
	AM08130	M8 x 130				
	AM08155	M8 x 155				
	AM10065	M10 x 65	--	--	12,45	12,45
	AM10070	M10 x 70	--	--	13,39	13,39
	AM10080	M10 x 80	19,00	<u>14,70</u>	13,39	13,39
	AM10090	M10 x 90				
	AM10100	M10 x 100				
	AM10120	M10 x 120				
	AM10140	M10 x 140				
	AM10150	M10 x 150				
	AM10160	M10 x 160				
	AM10170	M10 x 170				
	AM10210	M10 x 210				
	AM10230	M10 x 230				
	AM12075	M12 x 75	--	--	13,87	13,87
	AM12080	M12 x 80	--	--	17,39	17,39
	AM12090	M12 x 90				
	AM12100	M12 x 100				
	AM12110	M12 x 110	25,78	<u>20,60</u>	17,39	17,39
	AM12120	M12 x 120				
	AM12140	M12 x 140				
	AM12160	M12 x 160				
	AM12180	M12 x 180				
	AM12220	M12 x 220				
	AM12250	M12 x 250				

General parameters			Standard installation depth		Reduced installation depth	
Family	Code	Size	Tension N _{Rk}	Shear V _{Rk}	Tension N _{Rk}	Shear V _{Rk}
MTA	AM14080	M14 x 80	--	--	13,39	13,39
	AM14100	M14 x 100	--	--	24,02	<u>28,10</u>
	AM14120	M14 x 120	31,95	<u>28,10</u>	--	--
	AM14145	M14 x 145				
	AM14170	M14 x 170				
	AM14220	M14 x 220				
	AM14250	M14 x 250				
	AM16090	M16 x 90	--	--	16,87	16,87
	AM16110	M16 x 110	--	--	25,78	<u>38,40</u>
	AM16125	M16 x 125	37,87	<u>38,40</u>	25,78	<u>38,40</u>
	AM16145	M16 x 145				
	AM16170	M16 x 170				
	AM16220	M16 x 220				
	AM16250	M16 x 250				
	AM16280	M16 x 280				
	AM20120	M20 x 120	--	--	29,43	58,86
	AM20170	M20 x 170	51,42	<u>56,30</u>	31,95	63,90
	AM20220	M20 x 220				
	AM20270	M20 x 270				
	AM24180	M24 x 180	50,00	<u>84,70</u>	--	--
AM24260	M24 x 260					
1 KN ≈ 100 kg Values <u>underlined and in italics</u> show Steel failure, bold values concrete failure and other indicate pull out failure.						

5.2 DESIGN RESISTANCE [kN]

General parameters			Standard installation depth		Reduced installation depth	
Family	Code	Size	Tension	Shear	Tension	Shear
			N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}
MTA	AM06045	M6 x 45	4,10	<u>4,08</u>	--	--
	AM06055	M6 x 55				
	AM06060	M6 x 60	<u>5,29</u>	<u>4,08</u>	--	--
	AM06065	M6 x 65				
	AM06070	M6 x 70				
	AM06080	M6 x 80				
	AM06085	M6 x 85				
	AM06090	M6 x 90				
	AM06100	M6 x 100				
	AM06110	M6 x 110				
	AM06120	M6 x 120				
	AM06130	M6 x 130				
	AM06140	M6 x 140				
	AM06150	M6 x 150				
	AM06160	M6 x 160				
	AM06170	M6 x 170				
	AM06180	M6 x 180				
	AM08050	M8 x 50	--	--	3,62	3,62
	AM08060	M8 x 60	--	--	6,67	6,79
	AM08065	M8 x 65	<u>9,29</u>	<u>7,44</u>	6,67	6,79
	AM08075	M8 x 75				
	AM08090	M8 x 90				
	AM08115	M8 x 115				
	AM08120	M8 x 120				
	AM08130	M8 x 130				
	AM08155	M8 x 155				
	AM10065	M10 x 65	--	--	8,30	8,30
	AM10070	M10 x 70	--	--	8,93	8,93
	AM10080	M10 x 80	12,67	<u>11,76</u>	8,93	8,93
	AM10090	M10 x 90				
	AM10100	M10 x 100				
	AM10120	M10 x 120				
	AM10140	M10 x 140				
	AM10150	M10 x 150				
	AM10160	M10 x 160				
	AM10170	M10 x 170				
	AM10210	M10 x 210				
	AM10230	M10 x 230				
	AM12075	M12 x 75	--	--	9,25	9,25
	AM12080	M12 x 80	--	--	11,60	11,60
	AM12090	M12 x 90	17,19	<u>16,48</u>	11,60	11,60
	AM12100	M12 x 100				
	AM12110	M12 x 110				
	AM12120	M12 x 120				
	AM12140	M12 x 140				
	AM12160	M12 x 160				
	AM12180	M12 x 180				
	AM12220	M12 x 220				
	AM12250	M12 x 250				

General parameters			Standard installation depth		Reduced installation depth	
Family	Code	Size	Tension	Shear	Tension	Shear
			N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}
MTA	AM14080	M14 x 80	--	--	8,93	8,93
	AM14100	M14 x 100	--	--	16,01	<u>22,48</u>
	AM14120	M14 x 120	21,30	<u>22,48</u>	--	--
	AM14145	M14 x 145				
	AM14170	M14 x 170				
	AM14220	M14 x 220				
	AM14250	M14 x 250				
	AM16090	M16 x 90	--	--	11,25	11,25
	AM16110	M16 x 110	--	--	17,19	<u>30,72</u>
	AM16125	M16 x 125	25,25	<u>30,72</u>	17,19	<u>30,72</u>
	AM16145	M16 x 145				
	AM16170	M16 x 170				
	AM16220	M16 x 220				
	AM16250	M16 x 250				
	AM16280	M16 x 280				
	AM20120	M20 x 120	--	--	19,62	39,24
	AM20170	M20 x 170	34,28	<u>45,04</u>	21,30	42,60
	AM20220	M20 x 220				
	AM20270	M20 x 270				
	AM24180	M24 x 180	27,78	<u>67,76</u>	--	--
	AM24260	M24 x 260				

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 parameters			Standard installation depth		Reduced installation depth	
Family	Code	Size	Tension	Shear	Tension	Shear
			N _{rec}	V _{rec}	N _{rec}	V _{rec}
MTA	AM06045	M6 x 45	2,93	<u>2,91</u>	--	--
	AM06055	M6 x 55				
	AM06060	M6 x 60	<u>3,78</u>	<u>2,91</u>	--	--
	AM06065	M6 x 65				
	AM06070	M6 x 70				
	AM06080	M6 x 80				
	AM06085	M6 x 85				
	AM06090	M6 x 90				
	AM06100	M6 x 100				
	AM06110	M6 x 110				
	AM06120	M6 x 120				
	AM06130	M6 x 130				
	AM06140	M6 x 140				
	AM06150	M6 x 150				
	AM06160	M6 x 160				
	AM06170	M6 x 170				
	AM06180	M6 x 180				
	AM08050	M8 x 50	--	--	2,58	2,58
	AM08060	M8 x 60	--	--	4,76	4,85
	AM08065	M8 x 65	<u>6,63</u>	<u>5,31</u>	4,76	4,85
	AM08075	M8 x 75				
	AM08090	M8 x 90				
	AM08115	M8 x 115				
	AM08120	M8 x 120				
	AM08130	M8 x 130				
	AM08155	M8 x 155				
	AM10065	M10 x 65	--	--	5,93	5,93
	AM10070	M10 x 70	--	--	6,38	6,38
	AM10080	M10 x 80	9,05	<u>8,40</u>	6,38	6,38
	AM10090	M10 x 90				
	AM10100	M10 x 100				
	AM10120	M10 x 120				
	AM10140	M10 x 140				
	AM10150	M10 x 150				
	AM10160	M10 x 160				
	AM10170	M10 x 170				
	AM10210	M10 x 210				
	AM10230	M10 x 230				
	AM12075	M12 x 75	--	--	6,61	6,61
	AM12080	M12 x 80	--	--	8,28	8,28
	AM12090	M12 x 90	12,28	<u>11,77</u>	8,28	8,28
	AM12100	M12 x 100				
	AM12110	M12 x 110				
	AM12120	M12 x 120				
	AM12140	M12 x 140				
	AM12160	M12 x 160				
	AM12180	M12 x 180				
	AM12220	M12 x 220				
	AM12250	M12 x 250				

General parameters			Standard installation depth		Reduced installation depth	
Family	Code	Size	Tension	Shear	Tension	Shear
			N _{rec}	V _{rec}	N _{rec}	V _{rec}
MTA	AM14080	M14 x 80	--	--	6,38	6,38
	AM14100	M14 x 100	--	--	11,44	<u>16,06</u>
	AM14120	M14 x 120	15,22	<u>16,06</u>	--	--
	AM14145	M14 x 145				
	AM14170	M14 x 170				
	AM14220	M14 x 220				
	AM14250	M14 x 250	--	--	8,03	8,03
	AM16090	M16 x 90				
	AM16110	M16 x 110	--	--	12,28	<u>21,94</u>
	AM16125	M16 x 125	18,03	21,94	12,28	<u>21,94</u>
	AM16145	M16 x 145				
	AM16170	M16 x 170				
	AM16220	M16 x 220				
	AM16250	M16 x 250	--	--	14,01	28,03
	AM16280	M16 x 280				
	AM20120	M20 x 120				
	AM20170	M20 x 170	24,49	<u>32,17</u>	15,22	30,43
	AM20220	M20 x 220				
	AM20270	M20 x 270	19,84	<u>48,40</u>	--	--
	AM24180	M24 x 180				
	AM24260	M24 x 260				

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