



MTP-A4

CHARACTERISTICS

- Functioning by friction; installation by controlled torque
- Use for medium loads.
- Easy installation
- Use in cracked and uncracked concrete
- Use for static or cuasi-static loads
- Use for seismic loads C1 & C2.
- Approved for fire resistance R30 to R120
- A4 stainless steel version

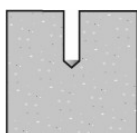
ASSESSMENT



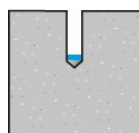
BASE MATERIALS



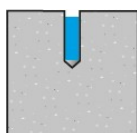
DRILL CONDITIONS



DRY

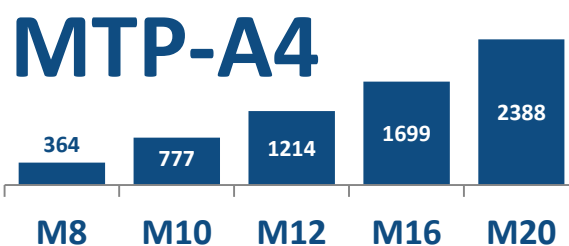


WET



FLOODED

RECOMMENDED TENSION RESISTANCES IN UNCRACKED CONCRETE [kg]



APPLICATION EXAMPLES



1. RANGE

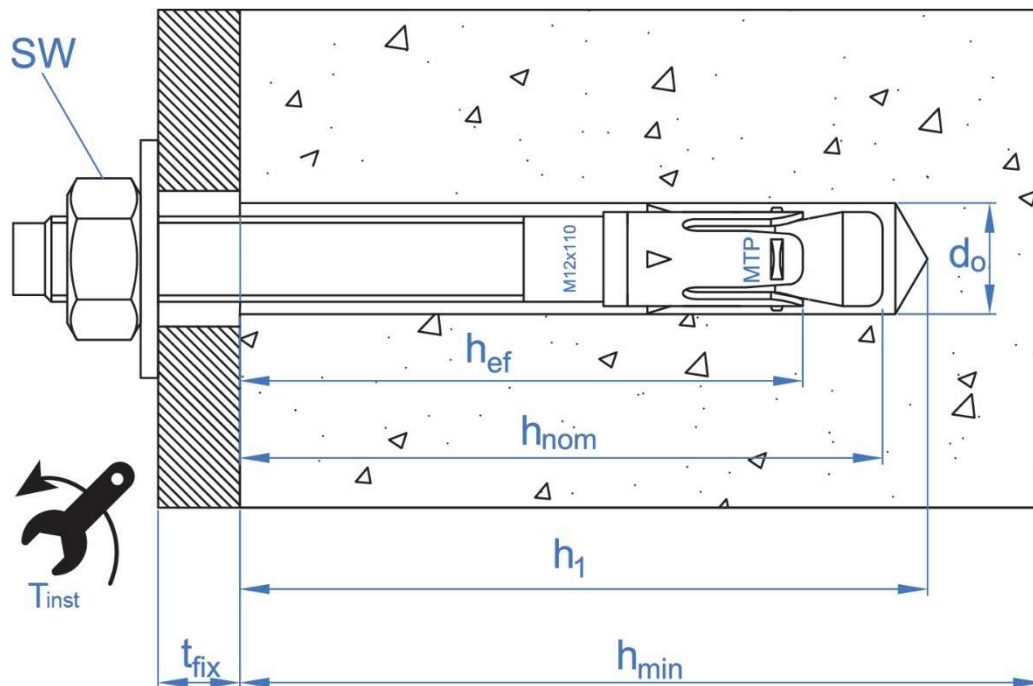
ITEM	CODE	SIZES	PHOTO	COMPONENT	MATERIAL
1	MTP-A4	M8 to M20		Wedgebolt Clip Nut Washer	Stainless steel A4 Stainless steel A4 DIN 934, stainless A4 DIN 125, 9021 or 440 stainless A4

2. ACCESSORIES

ITEM	CODE	PHOTO	DESCRIPTION
1	DOMTA		Tool for anchor fixing using percussion drilling machine
2	TP-MT		Plastic plug for MT, colors black and white (M6 to M16)

3. INSTALLATION DATA

3.1 INSTALLATION DRAWING



3.2 SEISMIC LOAD ASSESSMENT

Family	Code	Size	Assessed	C1	C2
MTP-A4	APA408075	M8x75	✓	--	--
	APA408095	M8x95	✓	--	--
	APA408115	M8x115	✓	--	--
	APA408135	M8x135	✓	--	--
	APA408165	M8x165	✓	--	--
	APA410090	M10x90	✓	✓	✓
	APA410105	M10x105	✓	✓	✓
	APA410115	M10x115	✓	✓	✓
	APA410135	M10x135	✓	✓	✓
	APA410155	M10x155	✓	✓	✓
	APA410165	M10x165	✓	✓	✓
	APA410185	M10x185	✓	✓	✓
	APA412100	M12x100	✓	✓	✓
	APA412110	M12x110	✓	✓	✓
	APA412120	M12x120	✓	✓	✓
	APA412130	M12x130	✓	✓	✓
	APA412150	M12x150	✓	✓	✓
	APA412165	M12x165	✓	✓	✓
	APA412180	M12x180	✓	✓	✓
	APA412200	M12x200	✓	✓	✓
	APA416125	M16x125	✓	✓	✓
	APA416145	M16x145	✓	✓	✓
	APA416175	M16x175	✓	✓	✓
	APA416190	M16x190	✓	✓	✓
	APA416220	M16x220	✓	✓	✓
	APA420200	M20x200	✓	✓	✓
	APA420240	M20x240	✓	✓	✓
	APA420285	M20x285	✓	✓	✓

3.3 INSTALLATION DATA

INSTALLATION PARAMETERS			Assessed	Nominal drill bit	Installation torque	Minimum concrete thickness	Drill hole depth	Embedment depth	Effective depth	Maximum fixture thickness	Critical spacing	Critical edge distances	Minimum spacing	Minimum edge distance
Family	Code	Size	ETE	d ₀ [mm]	T _{inst} [Nm]	h _{min} [mm]	h ₁ [mm]	h _{nom} [mm]	h _{ef} [mm]	t _{fix} [mm]	S _{cr} [mm]	C _{cr} [mm]	S _{min} [mm]	C _{min} [mm]
MTP-A4	APA408075	M8x75	✓	8	15	100	60	55	48	9	144	72	42	47
	APA408095	M8x95	✓							29				
	APA408115	M8x115	✓							49				
	APA408135	M8x135	✓							69				
	APA408165	M8x165	✓							99				
	APA410090	M10x90	✓	10	30	120	75	68	60	10	180	90	47	52
	APA410105	M10x105	✓							25				
	APA410115	M10x115	✓							35				
	APA410135	M10x135	✓							55				
	APA410155	M10x155	✓							75				
	APA410165	M10x165	✓							85				
	APA410185	M10x185	✓							105				
	APA412100	M12x100	✓	12	60	140	85	80	70	4	210	105	57	62
	APA412110	M12x110	✓							14				
	APA412120	M12x120	✓							24				
	APA412130	M12x130	✓							34				
	APA412150	M12x150	✓							54				
	APA412165	M12x165	✓							69				
	APA412180	M12x180	✓							84				
	APA412200	M12x200	✓							104				

INSTALLATION PARAMETERS			Assessed	Nominal drill bit	Installation torque	Minimum concrete thickness	Drill hole depth	Embedment depth	Effective depth	Maximum fixture thickness	Critical spacing	Critical edge distances	Minimum spacing	Minimum edge distance
Family	Code	Size	ETE	d ₀	T _{inst}	h _{min}	h ₁	h _{nom}	h _{ef}	t _{fix}	S _{cr}	C _{cr}	S _{min}	C _{min}
				[mm]	[Nm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
MTP-A4	APA416125	M16x125	✓	16	100	170	105	97	85	8	255	128	75	75
	APA416145	M16x145	✓							28				
	APA416175	M16x175	✓							58				
	APA416190	M16x190	✓							73				
	APA416220	M16x220	✓							103				
	APA420200	M20x200	✓	20	200	200	125	114	100	62	300	150	100	90
	APA420240	M20x240	✓							102				
	APA420285	M20x285	✓							147				

4. PRODUCT INSTALLATION



1. DRILLING

Check the concrete base is compacted and porosity is insignificant. Suitable for dry, wet and flooded drill holes.

Use drill in hammer mode.

Drill to the specified diameter and depth values.



2. BLOW AND CLEAN

Clean the drill holes completely of dust and fragments.

Use air pump and brush.



3. INSTALL

Insert the anchor in the hole until the red ring mark is flat with concrete surface.

Use hammer in case of need; DOMTA tool could be used alternatively.

The installation could be done through the fixture baseplate.



4. APPLY THE TORQUE

Apply nominal installation torque using a torque wrench.

Once installed it can be verified the total length of the anchor though the letter on bolt tip.

5. RESISTANCES

The resistances stated below have been determined under the following conditions:

- The load values are only valid if the installation has been carried out correctly (see installation procedure) by qualified personnel
- Isolated anchor, with no edge effects ($c \geq 1.5 \times \text{hef}$) or anchor group effects ($s \geq 3.0 \times \text{hef}$). For further information, please refer to the relevant ETA.
- C20/25 Steel Fibre Reinforced Concrete (SFRC)
- Resistance for the ultimate limit state in accordance with EN 1992-4:2018 for static or quasi-static loads. With a partial installation factor for design resistances in accordance with the relevant ETA. With a partial safety factor of 1.4 included for the recommended maximum loads.
- In the event of a combination of tensile and shear loads, moments, anchor spacings or edge distances that are less than those indicated above, the calculation must be carried out in accordance with the information set out in the relevant ETA and in accordance with the calculation method laid down in EN 1992-4:2018. We recommend that you use the calculation program INDEXcal which is available free of charge on our website: www.indexfix.com
- For structures or installations subject to exposure to the elements and/or a permanently damp indoor environment, A4 stainless steel must be used.
- The values which are underlined and in italics indicate steel failure; values in bold indicate concrete failure, while the rest indicate extraction failure.

1 kN $\approx$ 100 kg

5.1 CHARACTERISTIC RESISTANCE [kN]

General parameters					Non cracked concrete		Cracked concrete	
Family	Code	Size	Approved	Letter on head tip	Tension	Shear	Tension	Shear
					N _{Rk}	V _{Rk}	N _{Rk}	V _{Rk}
MTP-A4	APA408075	M8x75	✓	C	12,00	<u>11,90</u>	8,50	11,45
	APA408095	M8x95	✓	E				
	APA408115	M8x115	✓	G				
	APA408135	M8x135	✓	H				
	APA408165	M8x165	✓	K				
	APA410090	M10x90	✓	E	16,00	<u>18,90</u>	14,00	<u>18,90</u>
	APA410105	M10x105	✓	F				
	APA410115	M10x115	✓	G				
	APA410135	M10x135	✓	H				
	APA410155	M10x155	✓	J				
	APA410165	M10x165	✓	K				
	APA410185	M10x185	✓	L				
	APA412100	M12x100	✓	E	22,00	<u>27,40</u>	19,00	<u>27,40</u>
	APA412110	M12x110	✓	F				
	APA412120	M12x120	✓	G				
	APA412130	M12x130	✓	H				
	APA412150	M12x150	✓	I				
	APA412165	M12x165	✓	K				
	APA412180	M12x180	✓	L				
	APA412200	M12x200	✓	M				
	APA416125	M16x125	✓	G	38,55	<u>55,00</u>	26,99	53,97
	APA416145	M16x145	✓	I				
	APA416175	M16x175	✓	K				
	APA416190	M16x190	✓	L				
	APA416220	M16x220	✓	O				
	APA420200	M20x200	✓	M	49,19	98,39	34,44	68,87
	APA420240	M20x240	✓	P				
	APA420285	M20x285	✓	S				

5.2 DESIGN RESISTANCES [kN]								
General parameters					Non cracked concrete		Cracked concrete	
Family	Code	Size	Approved	Letter on head tip	Tension	Shear	Tension	Shear
					N _{Rd}	V _{Rd}	N _{Rd}	V _{Rd}
MTP-A4	APA408075	M8x75	✓	C	8,00	<u>9,52</u>	5,67	7,63
	APA408095	M8x95	✓	E				
	APA408115	M8x115	✓	G				
	APA408135	M8x135	✓	H				
	APA408165	M8x165	✓	K				
	APA410090	M10x90	✓	E	10,67	<u>15,12</u>	9,33	<u>15,12</u>
	APA410105	M10x105	✓	F				
	APA410115	M10x115	✓	G				
	APA410135	M10x135	✓	H				
	APA410165	M10x165	✓	K				
	APA410155	M10x155	✓	J				
	APA410185	M10x185	✓	L				
	APA412100	M12x100	✓	E	12,22	<u>21,92</u>	10,56	<u>21,92</u>
	APA412110	M12x110	✓	F				
	APA412120	M12x120	✓	G				
	APA412130	M12x130	✓	H				
	APA412150	M12x150	✓	I				
	APA412165	M12x165	✓	K				
	APA412180	M12x180	✓	L				
	APA412200	M12x200	✓	M				
	APA416125	M16x125	✓	G	21,42	<u>44,00</u>	14,99	35,98
	APA416145	M16x145	✓	I				
	APA416175	M16x175	✓	K				
	APA416190	M16x190	✓	L				
	APA416220	M16x220	✓	O				
	APA420200	M20x200	✓	M	27,33	65,59	19,13	45,91
	APA420240	M20x240	✓	P				
	APA420285	M20x285	✓	S				

5.3 RECOMMENDED MAXIMUM LOADS [kN]

General parameters					Non cracked concrete		Cracked concrete	
Family	Code	Size	Approved	Letter on head tip	Tension	Shear	Tension	Shear
					N _{rec}	V _{rec}	N _{rec}	V _{rec}
MTP-A4	APA408075	M8x75	✓	C	5,71	<u>6,80</u>	4,05	5,45
	APA408095	M8x95	✓	E				
	APA408115	M8x115	✓	G				
	APA408135	M8x135	✓	H				
	APA408165	M8x165	✓	K				
	APA410090	M10x90	✓	E	7,62	<u>10,80</u>	6,67	<u>10,80</u>
	APA410105	M10x105	✓	F				
	APA410115	M10x115	✓	G				
	APA410135	M10x135	✓	H				
	APA410155	M10x155	✓	J				
	APA410165	M10x165	✓	K				
	APA410185	M10x185	✓	L				
	APA412100	M12x100	✓	E	8,73	<u>15,66</u>	7,54	<u>15,66</u>
	APA412110	M12x110	✓	F				
	APA412120	M12x120	✓	G				
	APA412130	M12x130	✓	H				
	APA412150	M12x150	✓	I				
	APA412165	M12x165	✓	K				
	APA412180	M12x180	✓	L				
	APA412200	M12x200	✓	M				
	APA416125	M16x125	✓	G	15,30	<u>31,43</u>	10,71	25,70
	APA416145	M16x145	✓	I				
	APA416175	M16x175	✓	K				
	APA416190	M16x190	✓	L				
	APA416220	M16x220	✓	O				
	APA420200	M20x200	✓	M	19,52	46,85	13,66	32,80
	APA420240	M20x240	✓	P				
	APA420285	M20x285	✓	S				

6. OFFICIAL DOCUMENTATION

The following documents are available through our Sales Department or on our official website: www.indexfix.com

- European Technical Assessment ETA-12/0397 for use in concrete, according to EAD 330232-02-0601 guideline, option 1, from M8 to M20.
- Certificate VdS CEA 4001:2021-01(07) *Guidelines for sprinklers systems. Planning and installation for applications of water extinguishing systems on concrete elements* from M8 to M20.
- Declaration of Performances DoP MTP-en
- Available for INDEXcal Anchor Calculation Software