

# MTP-A4

Denomination: **MTP-A4 ANCHOR**

Codes: **MTP-A4**

Reference: **FT MTPA4-en**

Date: **17/01/20**

Revision: **0**

Page: **1 out 4**



MTP -A4



### CHARACTERISTICS

- Functioning by roughness; installation by controlled torque
- Use for medium loads.
- Easy installation.
- Use in cracked and uncracked concrete.
- Approved for seismic loads C1 and C2
- Use for static or cuasi-static loads.
- Approved for fire resistance R30 to R120
- A4 (AISI 316) stainless steel

### APPLICATIONS

- Structural fixings in cracked and uncracked concrete in outdoor conditions, including marine and industrial
- Safety fences.
- Fixings of steel beams, channels, machinery, boilers, signals, stadium seatings, façade substructures, etc.
- Fixings of wood structures to concrete.



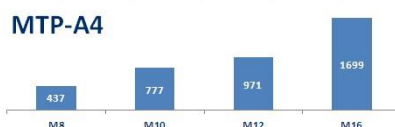
FIRE RESISTANCE



### BASE MATERIALS



### RECOMMENDED TENSION RESISTANCES IN UNCRACKED CONCRETE [kg]



### SIZES

**M8 – M16**

### DRILL CONDITION



### APPLICATION EXAMPLES



# TECHNICAL DATA SHEET

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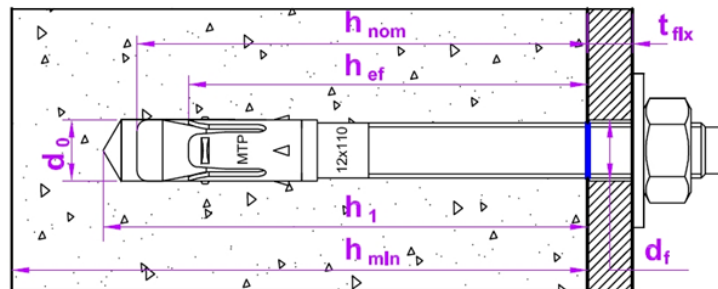
Page: **2 out 4**

ITEM	CÓDE	SIZE	PICTURE	COMPONENT	MATERIAL
1	<b>MTP-A4</b>	M8 to M16		Wedgebolt Clip Nut Washer	4 stainless steel A4 stainless steel DIN 934, A4 stainless steel DIN 125, A4 stainless steel

## 2. ACCESORIES

ITEM	CÓDE	PICTURE	DESCRIPTION
1	<b>DOMTA</b>		Tool for anchor fixing using percussion drilling machine

## 3. INSTALLATION DATA



SIZE		M8	M10	M12	M16
d <sub>0</sub> : nominal drill bit	[mm]	8	10	12	16
d <sub>f</sub> : fixture hole diameter ≤	[mm]	9	12	14	18
T <sub>ins</sub> : installation torque	[Nm]	20	40	60	120
h <sub>1</sub> : drill hole depth	[mm]	70	80	100	115
h <sub>nom</sub> : embedment depth	[mm]	54	67	81	97
h <sub>ef</sub> : effective depth	[mm]	48	60	72	86
t <sub>fix</sub> : máximum fixture thickness*	[mm]	L - 65	L - 80	L - 100	L - 120
s <sub>cr,N</sub> : critical spacing	[mm]	144	180	216	258
c <sub>cr,N</sub> : critical edge distance	[mm]	72	90	108	129
c <sub>min</sub> : minimum edge distance	[mm]	50	50	60	70
for s(edge distance) ≥	[mm]	50	110	120	130
s <sub>min</sub> : minimum spacing	[mm]	50	55	60	70
for c (spacing) ≥	[mm]	50	70	80	100
h <sub>min</sub> : minimum concrete thickness	[mm]	100	120	150	170

\* L= total anchor length

Critical distances are those where anchors in an anchor group are not influenced by one another with regard to tension load effects. For smaller distances, down to minimum distances, corresponding reduction coefficients must be applied.

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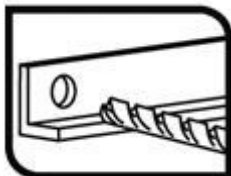
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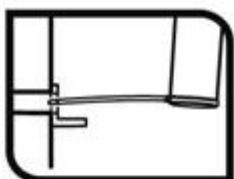
Page: **3 out 4**

## 4. PRODUCT INSTALLATION



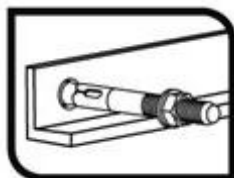
### 1. DRILLING

Check the concrete base is compact and porosity is insignificant.  
Suitable for wet, dry or flooded drill holes.  
Use drill in hammer mode.  
Drill to the specified diameter and depth values



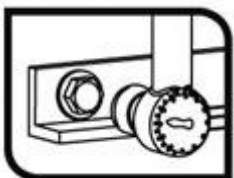
### 2. BLOW AND CLEAN

Clear the drill holes completely of dust and fragments  
Use air pump and brush.



### 3. INSTALL

Insert the anchor in the hole up to embedment depth as per installation table  
Use hammer in case of need; DOMTA tool could be used alternatively.  
The installation could be done through the fixture baseplate.



### 4. APPLY TORQUE

Apply nominal installation torque using a torque wrench

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

## 5. RESISTANCES

Characteristic resistances for C20/25 concrete for an isolated anchor (without considering anchor-to-anchor or anchor-to-edge distance effects).



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Page: **4 out 4**

Code	Size	Letter on head	Characteristic tension resistance in C20/25 concrete		Coefficient for higher concrete types			Tension partial safety factor	Characteristic shear resistance in concrete		Shear partial safety factor	
			Uncracked	Cracked	C30/37	C40/45	C50/60		Uncracked	Cracked	Uncracked	Cracked
			N <sub>Rk</sub> [kN]	N <sub>Rk</sub> [kN]	Ψ [-]	Ψ [-]	Ψ [-]	γ <sub>M</sub> [-]	V <sub>Rk</sub> [kN]	V <sub>Rk</sub> [kN]	γ <sub>M</sub> [-]	γ <sub>M</sub> [-]
APA408068	M8x68	A	9	5	1.22	1.41	1.55	1.50	11.9	12.0	1.30	1.50
APA408075	M8x75	B										
APA408090	M8x90	C										
APA408115	M8x115	D										
APA408135	M8x135	E										
APA408165	M8x165	G	16	9	1.22	1.41	1.55	1.50	18.8	18.8	1.30	1.30
APA410090	M10x90	A										
APA410105	M10x105	B										
APA410115	M10x115	C										
APA410135	M10x135	D										
APA410155	M10x155	E	20	12	1.22	1.41	1.55	1.50	27.4	27.4	1.30	1.30
APA410185	M10x185	F										
APA412110	M12x110	A										
APA412120	M12x120	B										
APA412130	M12x130	P										
APA412145	M12x145	C	35	25	1.22	1.41	1.55	1.50	51.0	57.4	1.30	1.50
APA412170	M12x170	D										
APA412200	M12x200	E										
APA416130	M16x130	A										
APA416150	M16x150	B										
APA416185	M16x185	C										
APA416220	M16x220	D										

1 kN ≈ 100 kg

A load safety factor of  $\gamma_F = 1,4$  is recommended

Design example:

Fixing a tension load of 500 kg (= 4,91 kN) in C30/37 cracked concrete using a M10 MTP-A4 anchor.

Check to be done: Design load < Design resistance

Design load = service load \* load safety factor = 4,91 \* 1,4 = 6,87 kN

Design resistance = characteristic resistance \* concrete coefficient / tension partial safety coefficient = 9 \* 1,22 / 1,5 = 7,32 kN

Check: 6,87 < 7,32 kN: anchorage is safe

For complex anchor designs we recommend our anchor design software CLOVERcal

## 6. OFFICIAL DOCUMENTATION

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

- European Technical Assessment ETA 15/0145 for use in concrete, according to ETAG 001 guideline, option 1, from M8 to M16. Approved for seismic loads C1 and C2 and for fire resistance R30 to R120
- Declaration of Performances: DoP MTPA4-en
- Certificate of constancy of performances: 1404-CPR-2520.
- CLOVERcal: anchor calculation software.