TECHNICAL DATASHEET

4tecx (Doorsteekanker RVS ETA1)

4tecx article numbers:
4050001200,4050001208,4050001216,4050001224,4050001232,4050001240,4050001248,4050001256,4050001264

MTP –A4

A4 INOX AISI 316

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.

ETA European Technical Approval

CE

FIRE RESISTANCE

INDEXcal

SEISMIC C2 & C1

BASE MATERIALS

RECOMMENDED TENSION RESISTANCES IN UNCRACKED CONCRETE [kg]

SIZES

M8 – M16

DRILL CONDITION

APPLICATION EXAMPLES

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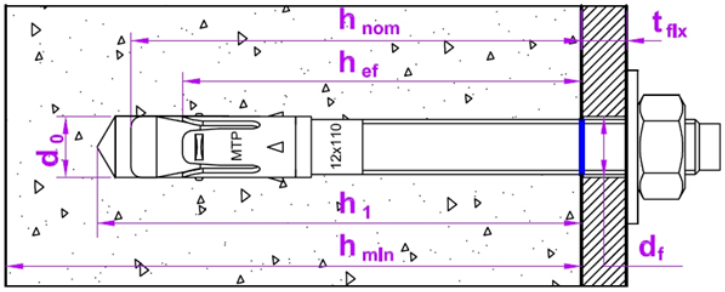
1. RANGE

ITEM	CÓDE	SIZE	PICTURE	COMPONENT	MATERIAL
1	**MTP-A4 Doorsteekanker RVS ETA1**	M8 to M16		Wedgebolt Clip Nut Washer	A4 stainless steel A4 stainless steel DIN 934, A4 stainless steel DIN 125, A4 stainless steel

2. ACCESORIES

ITEM	CÓDE	PICTURE	DESCRIPTION
1	**DOMTA**		Tool for anchor fixing using percussion drilling machine

3. INSTALLATION DATA



SIZE		M8	M10	M12	M16
d_0: nominal drill bit	[mm]	8	10	12	16
d_f: fixture hole diameter ≤	[mm]	9	12	14	18
T_{ins}: installation torque	[Nm]	20	40	60	120
h_1: drill hole depth	[mm]	70	80	100	115
h_{nom}: embedment depth	[mm]	54	67	81	97
h_{ef}: effective depth	[mm]	48	60	72	86
t_{fix}: máximum fixture thickness*	[mm]	L - 65	L - 80	L - 100	L – 120
$s_{cr,N}$: critical spacing	[mm]	144	180	216	258
$c_{cr,N}$: critical edge distance	[mm]	72	90	108	129
c_{min}: mínimum edge distance	[mm]	50	50	60	70
for s(edge distance) ≥	[mm]	50	110	120	130
s_{min}: minimum spacing	[mm]	50	55	60	70
for c (spacing) ≥	[mm]	50	70	80	100
h_{min}: mínimum 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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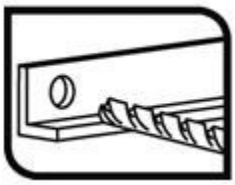
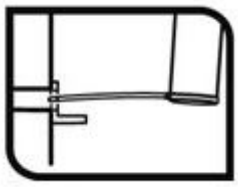
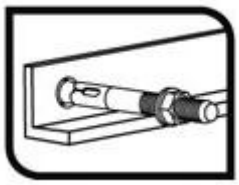
4. PRODUCT INSTALLATION



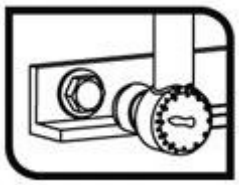
1. DRILLING
Check the concrete base is compact and porosity is insignificant.
Suitable for wet, dry or flooded drill holes.
Use drill in hammer mode.
Drill to the specified diameter and depth values



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).

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_{Rk} [kN]	N_{Rk} [kN]	Ψ [-]	Ψ [-]	Ψ [-]	γ_M [-]	V_{Rk} [kN]	V_{Rk} [kN]	γ_M [-]	γ_M [-]
APA408068	M8x68	A	9	5	1.22	1.41	1.55	1.50	11.9	12.0	1.30	1.50
4050001200	M8x75	B										
4050001208	M8x90	C										
APA408115	M8x115	D										
4050001216	M8x135	E										
APA408165	M8x165	G										
4050001224	M10x90	A	16	9	1.22	1.41	1.55	1.50	18.8	18.8	1.30	1.30
APA410105	M10x105	B										
4050001232	M10x115	C										
4050001240	M10x135	D										
APA410155	M10x155	E										
APA410185	M10x185	F										
4050001248	M12x110	A	20	12	1.22	1.41	1.55	1.50	27.4	27.4	1.30	1.30
4050001256	M12x120	B										
APA412130	M12x130	P										
APA412145	M12x145	C										
APA412170	M12x170	D										
APA412200	M12x200	E										
4050001264	M16x130	A	35	25	1.22	1.41	1.55	1.50	51.0	57.4	1.30	1.50
APA416150	M16x150	B										
APA416185	M16x185	C										
APA416220	M16x220	D										

1 KN ≈ 100 kg

A load safety factor of γ_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

6. OFFICIAL DOCUMENTATION

The following documents are available through our Sales Department or on our official website: www.4tecx.com

- 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.