TECHNICAL DATASHEET

4tecx Doorsteekanker Verzinkt ETA 1

4tecx article numbers:
4050001100,4050001101,4050001108,4050001116,4050001124,4050001132,4050001140,4050001148,4050001156, 4050001164

MTP

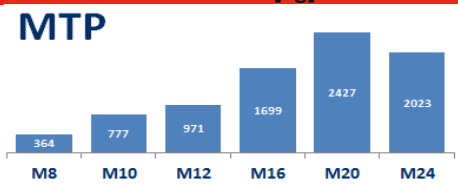
MTP-G

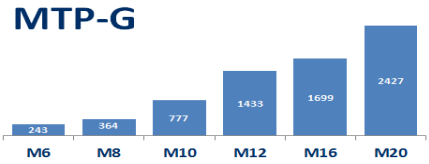
MTP- X (Doorsteekanker Verzinkt ETA 1)

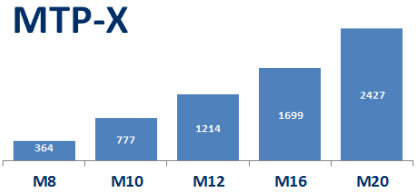
CHARACTERISTICS

- Functioning by roughness; installation by controlled torque.
- Use for medium loads.
- Easy installation.
- Use in cracked and uncracked concrete.
- Use for seismic loads.
- Use for static or cuasi-static loads.
- Approved for fire resistance R30 to R120.
- Versions in galvanized carbon steel and sherardized.

RECOMMENDED TENSION RESISTANCES IN UNCRACKED CONCRETE [kg]







BASE MATERIALS

DRILL CONDITIONS

APPLICATION EXAMPLES

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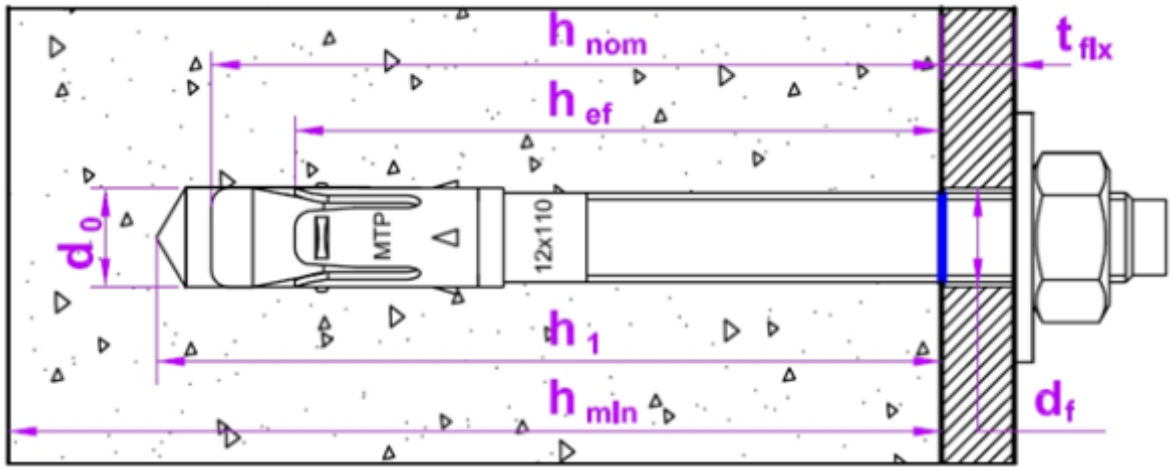
1. RANGE

ITEM	CODE	SIZES	PICTURES	COMPONENT	MATERIAL
1	**MTP**	M8 a M24		Wedgebolt Clip Nut Washer	Carbon steel, galvanized ≥ 5 µm A4 stainless steel DIN 934, galvanized ≥ 5 µm DIN 125 o DIN 9021, cincada ≥ 5 µm
2	**MTP-G**	M6 a M20		Wedgebolt Clip Nut Washer	Carbon steel, sherardized ≥ 40 µm A4 stainless steel DIN 934, sherardized ≥ 40 µm DIN 125 o DIN 9021, sherardized ≥ 40 µm
3	**MTP-X Doorsteekanker Verzinkt ETA 1**	M6 a M20		Wedgebolt Clip Nut Washer	Carbon steel, galvanized ≥ 5 µm Carbon steel, sherardized ≥ 15 µm DIN 934, galvanized ≥ 5 µm DIN 125 o DIN 9021, galvanized ≥ 5 µm

2. ACCESORIES

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



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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	ETA	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	AP08050	M8x50		8	20	100	40	37	30	2	144	72	50	50
	AP08075	M8x75	✓				60	55	48	9				
	AP08095	M8x95	✓							29				
	AP08115	M8x115	✓							49				
	AP10090	M10x90	✓	10	40	120	75	68	60	10	180	90	60	60
	AP10105	M10x105	✓							25				
	AP10115	M10x115	✓							35				
	AP10135	M10x135	✓							55				
	AP10165	M10x165	✓							85				
	AP10185	M10x185	✓							105				
	AP12080	M12x80		12	60	100	65	60	50	4	210	105	70	70
	AP12100	M12x100	✓			140	85	80	70	4				
	AP12110	M12x110	✓							14				
	AP12120	M12x120	✓							24				
	AP12130	M12x130	✓							34				
	AP12150	M12x150	✓							54				
	AP12180	M12x180	✓							84				
	AP12200	M12x200	✓							104				
	AP16145	M16x145	✓	16	100	170	105	97	85	28	255	128	85	85

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	ETA	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	AP16175	M16x175	✓	16	100	170	105	97	85	58	255	128	85	85
	AP16220	M16x220	✓							103				
	AP16250	M16x250	✓							133				
	AP20170	M20x170	✓	20	200	200	125	114	100	32	300	150	100	100
	AP20200	M20x200	✓							62				
	AP24205	M24x205	✓	24	250	250	155	143	125	35	375	188	125	125
	AP24235	M24x235	✓							65				
MTP-G	APG06060	M6x60		6	7	100	50	46	40	10	120	60	40	40
	APG06070	M6x70								20				
	APG06100	M6x100								50				
	APG08050	M8x50		8	15	100	40	37	30	2	144	72	50	50
	APG08060	M8x60					60	55	48	12				
	APG08075	M8x75	✓							9				
	APG08095	M8x95	✓							29				
	APG08115	M8x115	✓							49				
	APG10070	M10x70		10	40	100	60	53	45	5	180	90	60	60
	APG10090	M10x90	✓			120	75	68	60	10				
	APG10105	M10x105	✓							25				
	APG10115	M10x115	✓							35				

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Family	Code	Size	ETA	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-G	APG10135	M10x135	✓	10	40	120	75	68	60	55	180	90	60	60
	APG10165	M10x165	✓							85				
	APG10185	M10x185	✓							105				
	APG12080	M12x80		12	60	100	65	60	50	4	210	105	70	70
	APG12110	M12x110	✓			140	85	80	70	14				
	APG12130	M12x130	✓							34				
	APG12150	M12x150	✓							54				
	APG12180	M12x180	✓							84				
	APG12200	M12x200	✓							104				
	APG16125	M16x125	✓	16	100	170	105	97	85	8	255	128	128	128
	APG16145	M16x145	✓							28				
	APG16175	M16x175	✓							58				
	APG16220	M16x220	✓							103				
	APG20170	M20x170	✓	20	200	200	125	114	100	32	300	150	150	150
	APG20200	M20x200	✓							62				
MTP-X	APX08050	M8x50		8	15	100	40	37	30	2	144	72	50	50
Door-Steek-anker Verzinkt ETA 1	4050001100	M8x75	✓				60	55	48	9				
	4050001101	M8x80	✓							14				
	APX08095	M8x95	✓							29				
	4050001108	M8x115	✓							49				

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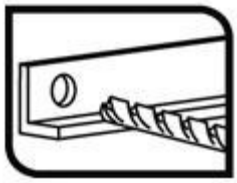
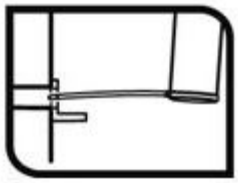
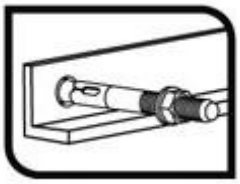
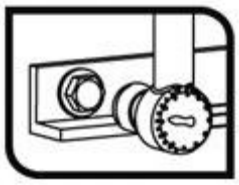
INSTALLATION PARAMETERS			Assessed	Nominal drill bit	Installation torque	Minimum concrete thickness	Drill hole depth	Embedment depth	Effective depth	Maximum fixture thickness	Critical spacing	Critical edge distances	Minimum spacing	Minimum edge distance
Family	Code	Size	ETA	d_0	T_{inst}	h_{min}	h_1	h_{nom}	h_{ef}	t_{fix}	S_{cr}	C_{cr}	S_{min}	C_{min}
				[mm]	[Nm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
MTP-X Door-Steek-anker Verzinkt ETA 1	4050001116	M10x90		10	40	100	60	53	45	5	180	90	60	60
	4050001124	M10x105	✓			120	75	68	60	25				
	4050001132	M10x115	✓							35				
	APX10135	M10x135	✓							55				
	APX10165	M10x165	✓							85				
	APX10185	M10x185	✓							105				
	APX12080	M12x80		12	60	100	65	60	50	4	210	105	70	70
	APX12100	M12x100	✓			140	85	80	70	4				
	4050001140	M12x110	✓							14				
	4050001148	M12x120	✓							24				
	4050001156	M12x130	✓							34				
	APX12150	M12x150	✓							54				
	APX12180	M12x180	✓							84				
	APX12200	M12x200	✓							104				
	APX12220	M12x220	✓							124				
	APX12255	M12x250	✓							159				
	APX16145	M16x145	✓	16	100	170	105	97	85	28	255	128	128	128
	4050001164	M16x175	✓							58				
	APX16220	M16x220	✓							103				
	APX16250	M16x250	✓							133				
	APX20170	M20x170	✓	20	200	200	125	114	100	32	300	150	150	150
	APX20200	M20x200	✓							62				

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 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 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

Family	Code	Size	ETA assessed	Letter on head tip	Tension resistance in C20/25 concrete		Coefficient for higher concrete resistances			Tension partial safety coefficient	Shear resistance		Shear partial safety coefficient	
					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 [-]
MTP	AP08050	M8x50		A	4,5	3,2	1,22	1,41	1,55	1,8	8,3	5,9	1,5	1,5
	AP08075	M8x75	✓	C	9,0	5,0					11,0	12,0	1,25	
	AP08095	M8x95	✓	E										
	AP08115	M8x115	✓	G										
	AP10090	M10x90	✓	E	16,0	9,0	1,16	1,31	1,41	1,5	17,4	17,4	1,25	1,25
	AP10105	M10x105	✓	F										
	AP10115	M10x115	✓	G										
	AP10135	M10x135	✓	H										
	AP10165	M10x165	✓	K										
	AP10185	M10x185	✓	L										
	AP12080	M12x80		D	12,0	8,0	1,22	1,41	1,55	1,5	25,3	25,4	1,25	1,5
	AP12100	M12x100	✓	E	20,0	12,0						25,3		1,25
	AP12110	M12x110	✓	F										
	AP12120	M12x120	✓	G										
	AP12130	M12x130	✓	H										
	AP12150	M12x150	✓	I										
	AP12180	M12x180	✓	L										
	AP12200	M12x200	✓	M										
	AP16145	M16x145	✓	I	35,0	25,0	1,22	1,41	1,55	1,5	47,1	56,4	1,25	1,5
	AP16175	M16x175	✓	K										
	AP16220	M16x220	✓	O										
	AP16250	M16x250	✓	Q										

Family	Code	Size	ETA assessed	Letter on head tip	Tension resistance in C20/25 concrete		Coefficient for higher concrete resistances			Tension partial safety coefficient	Shear resistance		Shear partial safety coefficient	
					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 [-]
MTP	AP20170	M20x170	✓	K	50,0	30,0	1,16	1,31	1,41	1,5	73,1	72,0	1,25	1,5
	AP20200	M20x200	✓	M										
	AP24205	M24x205	✓	N	50,0	30,0				1,8	84,7	100,6	1,25	1,5
	AP24235	M24x235	✓	P										
MTP-G	APG06060	M6X60		B	6,0	--	1,22	1,41	1,55	1,8	6,0	--	1,25	--
	APG06070	M6X70		C										
	APG06100	M6X100		E										
	APG08050	M8x50		A	4,5	3,2	1,22	1,41	1,55	1,8	8,3	5,9	1,5	1,5
	APG08060	M8X60		B										
	APG08075	M8x75	✓	C	9,0	6,0					11,0	12,0	1,25	
	APG08095	M8x95	✓	E										
	APG08115	M8x115	✓	G										
	APG10070	M10x70		C	6,7	4,8	1,16	1,31	1,41	1,5	17,4	17,4	1,25	1,25
	APG10090	M10x90	✓	E	16,0	9,0								
	APG10105	M10x105	✓	F										
	APG10115	M10x115	✓	G										
	APG10135	M10x135	✓	H										
	APG10165	M10x165	✓	K										
	APG10185	M10x185	✓	L										
	APG12080	M12x80		D	12,0	8,0	1,22	1,41	1,55	1,5	25,3	25,4	1,25	1,5
	APG12100	M12x100	✓	E	30,0	16,0						25,3		1,25
	APG12110	M12x110	✓	F										
	APG12130	M12x130	✓	H										

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Family	Code	Size	ETA assessed	Letter on head tip	Tension resistance in C20/25 concrete		Coefficient for higher concrete resistances			Tension partial safety coefficient	Shear resistance		Shear partial safety coefficient	
					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 [-]
MTP-G	APG12150	M12x150	✓	I	30,0	16,0	1,22	1,41	1,55	1,5	25,3	25,3	1,25	1,25
	APG12180	M12x180	✓	L										
	APG12200	M12x200	✓	M										
	APG16125	M16X125	✓	G	35,0	25,0	1,22	1,41	1,55	1,5	47,1	56,4	1,25	1,5
	APG16145	M16x145	✓	I										
	APG16175	M16x175	✓	K										
	APG16220	M16x220	✓	O										
	APG20170	M20x170	✓	K	50,0	30,0	1,16	1,31	1,41	1,5	73,1	72,0	1,25	1,5
	APG20200	M20x200	✓	M										
MTP-X Door-Steek-Anker Verzinkt ETA 1	APX08050	M8x50		A	4,5	3,2	1,22	1,41	1,55	1,8	8,3	5,9	1,5	1,5
	4050001100	M8x75	✓	C	9,0	6,0					11,0	12,0	1,25	
	4050001101	M8x80	✓	D										
	APX08095	M8x95	✓	E										
	4050001108	M8x115	✓	G										
	4050001116	M10x90	✓	E	16,0	9,0	1,16	1,31	1,41	1,5	17,4	17,4	1,25	1,25
	4050001124	M10x105	✓	F										
	4050001132	M10x115	✓	G										
	APX10135	M10x135	✓	H										
	APX10165	M10x165	✓	K										
	APX10185	M10x185	✓	L										

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Family		Size	ETA assessed	Letter on head tip	Tension resistance in C20/25 concrete		Coefficient for higher concrete resistances			Tension partial safety coefficient	Shear resistance		Shear partial safety coefficient	
					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 [-]
MTP-X Door-Steek-anker Verzinkt ETA 1	APX12080	M12x80	✓	D	12,0	8,0	1,22	1,41	1,55	1,5	25,3	25,4	1,25	1,5
	APX12100	M12x100	✓	E	25,0	16						25,3		1,25
	4050001140	M12x110	✓	F										
	4050001148	M12X120	✓	G										
	4050001156	M12x130	✓	H										
	APX12150	M12x150	✓	I										
	APX12180	M12x180	✓	L										
	APX12200	M12x200	✓	M										
	APX12220	M12x220	✓	O										
	APX12255	M12x255	✓	R										
	APX16145	M16x145	✓	I	35,0	25,0	1,22	1,41	1,55	1,5	47,1	56,4	1,25	1,5
	4050001164	M16x175	✓	K										
	APX16220	M16x220	✓	O										
	APX16250	M16x250	✓	Q										
	APX20170	M20x170	✓	K	50,0	30,0	1,16	1,31	1,41	1,5	73,1	72,0	1,25	1,5
	APX20200	M20x200	✓	M										

Characteristic resistances for seismic performance C1 and C2 for C20/25 concrete for an isolated anchor (without considering anchor-to-anchor or anchor-to-edge distance effects), assuming there is no gap between anchor and baseplate.

Family	Code	Size	Letter on head tip	Tension resistance in C20/25 concrete		Coefficient for higher concrete resistances			Tension partial safety coefficient		Shear resistance		Shear partial safety coefficient
				C1	C2	C30/37	C40/45	C50/60	C1	C2	C1	C2	C1 / C2
				$N_{Rk,P,seis}$ [kN]	N_{Rk} [kN]	Ψ [-]	Ψ [-]	Ψ [-]	γ_M [-]	γ_M [-]	V_{Rk} [kN]	V_{Rk} [kN]	γ_M [-]
MTP	AP10090	M10x90	E	5,3	-	1,16	1,31	1,41	1,5	-	12,2	-	1,25
	AP10105	M10x105	F										
	AP10115	M10x115	G										
	AP10135	M10x135	H										
	AP10165	M10x165	K										
	AP10185	M10x185	L										
	AP12100	M12x100	E	8,4	5,2	1,22	1,41	1,55	1,5	1,5	17,8	17,8	1,25
	AP12110	M12x110	F										
	AP12120	M12x120	G										
	AP12130	M12x130	H										
	AP12150	M12x150	I										
	AP12180	M12x180	L										
	AP12200	M12x200	M										
	AP16145	M16x145	I	17,5	8,9	1,22	1,41	1,55	1,5	1,5	33,0	33,0	1,25
	AP16175	M16x175	K										
	AP16220	M16x220	O										
	AP16250	M16x250	Q										

Family	Code	Size	Letter on head tip	Tension resistance in C20/25 concrete		Coefficient for higher concrete resistances			Tension partial safety coefficient		Shear resistance		Shear partial safety coefficient
				C1	C2	C30/37	C40/45	C50/60	C1	C2	C1	C2	C1 / C2
				$N_{Rk,P,seis}$ [kN]	N_{Rk} [kN]	Ψ [-]	Ψ [-]	Ψ [-]	γ_M [-]	γ_M [-]	V_{Rk} [kN]	V_{Rk} [kN]	γ_M [-]
Door-Steek-anker Verzinkt ETA 1	APX08050	M8x50	A	5,9	-	1,16	1,31	1,41	1,8	-	7,7	-	1,25
	4050001100	M8x75	C										
	4050001101	M8x80	D										
	APX08095	M8x95	E										
	4050001108	M8x115	G										
	4050001116	M10x90	E	8,9	3,9	1,16	1,31	1,41	1,5	-	12,2	-	1,25
	4050001124	M10x105	F										
	4050001132	M10x115	G										
	APX10135	M10x135	H										
	APX10165	M10x165	K										
	APX10185	M10x185	L										
	APX12080	M12x80	D	16,0	9,1	1,22	1,41	1,55	1,5	1,5	17,8	17,8	1,25
	APX12100	M12x100	E										
	4050001140	M12x110	F										
	4050001148	M12X120	G										
	4050001156	M12x130	H										
	APX12150	M12x150	I										
	APX12180	M12x180	L										
	APX12200	M12x200	M										
	APX12220	M12x220	O										
	APX12255	M12x255	R										

Family	Code	Size	Letter on head tip	Tension resistance in C20/25 concrete		Coefficient for higher concrete resistances			Tension partial safety coefficient		Shear resistance		Shear partial safety coefficient
				C1	C2	C30/37	C40/45	C50/60	C1	C2	C1	C2	C1 / C2
				$N_{Rk,P,seis}$ [kN]	N_{Rk} [kN]	Ψ [-]	Ψ [-]	Ψ [-]	γ_M [-]	γ_M [-]	V_{Rk} [kN]	V_{Rk} [kN]	γ_M [-]
Door-Steek-anker Verzinkt ETA 1	APX16145	M16x145	I	25,0	-	1,22	1,41	1,55	1,5	1,5	33,0	0	1,25
	4050001164	M16x175	K										
	APX16220	M16x220	O										
	APX16250	M16x250	Q										
	APX20170	M20x170	K	30,0	21,0	1,16	1,31	1,41	1,5	1,5	58,5	58,5	1,25
	APX20200	M20x200	M										

1 KN ≈ 100 kN

A load safety factor of γF = 1,4 is recommended

6. OFFICIAL DOCUMENTATION

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

- European Technical Assesment ETA-12/0397 for use in concrete, according to ETAG 001 guideline, option 1, from M8 to M24.
- Certificate of constancy of performances 1219-CPR-0053.
- Declaration of Performances DoP MTP-en.
- Declaration of Performances DoP MTP-G-en.
- Declaration of Performances DoP MTP-X-en.