TP THROUGH BOLT ANCHORS

TP Cracked Concrete Anchor - TP CCA - Option 1

Characteristics

- TP CCA is used in cracked and non-cracked concrete
- European Technical Approval (ETA) Option 1
- Approved for fire resistance R30 to R120
- Use for seismic loads
- Used for medium loads, static or quasi-static loads
- TP CCA has roughness working principle. Easy to install by using a controlled torque
- Available in galvanized carbon steel and sherardized
- Easy installation
- TP CCA is used in dry, wet or flooded drill hole conditions
- Available in variety of lengths and sizes, assembly flexibility. Size range M6 – M24

Application

- TP CCA is used in Structural applications in cracked concrete in indoor applications
- Uses to fix safety fences, sprinklers, channels, machinery, boilers, signals, steel beams, wood structures to concrete, etc.

TP CCA (Galvanized)

Item Number	Description	Size*	Approval
TP 11250	TP CCA Option 1 - Cracked Concrete	M8x50	
TP 11251	TP CCA Option 1 - Cracked Concrete	M8x75	ETA
TP 11252	TP CCA Option 1 - Cracked Concrete	M8x95	ETA
TP 11253	TP CCA Option 1 - Cracked Concrete	M8x115	ETA
TP 11254	TP CCA Option 1 - Cracked Concrete	M10x90	ETA
TP 11255	TP CCA Option 1 - Cracked Concrete	M10x105	ETA
TP 11256	TP CCA Option 1 - Cracked Concrete	M10x115	ETA
TP 11257	TP CCA Option 1 - Cracked Concrete	M10x135	ETA
TP 11258	TP CCA Option 1 - Cracked Concrete	M10x165	ETA
TP 11259	TP CCA Option 1 - Cracked Concrete	M10x185	ETA
TP 11260	TP CCA Option 1 - Cracked Concrete	M12x80	
TP 11261	TP CCA Option 1 - Cracked Concrete	M12x100	ETA
TP 11262	TP CCA Option 1 - Cracked Concrete	M12x110	ETA
TP 11263	TP CCA Option 1 - Cracked Concrete	M12x120	ETA
TP 11264	TP CCA Option 1 - Cracked Concrete	M12x130	ETA
TP 11265	TP CCA Option 1 - Cracked Concrete	M12x150	ETA
TP 11266	TP CCA Option 1 - Cracked Concrete	M12x180	ETA
TP 11267	TP CCA Option 1 - Cracked Concrete	M12x200	ETA
TP 11268	TP CCA Option 1 - Cracked Concrete	M16x145	ETA
TP 11269	TP CCA Option 1 - Cracked Concrete	M16x175	ETA
TP 11270	TP CCA Option 1 - Cracked Concrete	M16x220	ETA
TP 11271	TP CCA Option 1 - Cracked Concrete	M16x250	ETA
TP 11272	TP CCA Option 1 - Cracked Concrete	M20x170	ETA
TP 11273	TP CCA Option 1 - Cracked Concrete	M20x200	ETA
TP 11274	TP CCA Option 1 - Cracked Concrete	M24x205	ETA
TP 11275	TP CCA Option 1 - Cracked Concrete	M24x235	ETA

*(Diameter) x (Length) - mm

TP CCA-X (Galvanized)

Item Number	Description	Size*	Approval
TP 11400	TP CCA-X Option 1 - Cracked Concrete	M8x50	
TP 11401	TP CCA-X Option 1 - Cracked Concrete	M8x75	ETA
TP 11402	TP CCA-X Option 1 - Cracked Concrete	M8x95	ETA
TP 11403	TP CCA-X Option 1 - Cracked Concrete	M8x115	ETA
TP 11404	TP CCA-X Option 1 - Cracked Concrete	M10x90	ETA
TP 11405	TP CCA-X Option 1 - Cracked Concrete	M10x105	ETA
TP 11406	TP CCA-X Option 1 - Cracked Concrete	M10x115	ETA
TP 11407	TP CCA-X Option 1 - Cracked Concrete	M10x135	ETA
TP 11408	TP CCA-X Option 1 - Cracked Concrete	M10x165	ETA
TP 11409	TP CCA-X Option 1 - Cracked Concrete	M10x185	ETA
TP 11410	TP CCA-X Option 1 - Cracked Concrete	M12x80	
TP 11411	TP CCA-X Option 1 - Cracked Concrete	M12x100	ETA
TP 11412	TP CCA-X Option 1 - Cracked Concrete	M12x110	ETA
TP 11413	TP CCA-X Option 1 - Cracked Concrete	M12x120	ETA
TP 11414	TP CCA-X Option 1 - Cracked Concrete	M12x130	ETA
TP 11415	TP CCA-X Option 1 - Cracked Concrete	M12x150	ETA
TP 11416	TP CCA-X Option 1 - Cracked Concrete	M12x180	ETA
TP 11417	TP CCA-X Option 1 - Cracked Concrete	M12x200	ETA
TP 11418	TP CCA-X Option 1 - Cracked Concrete	M16x145	ETA
TP 11419	TP CCA-X Option 1 - Cracked Concrete	M16x175	ETA
TP 11420	TP CCA-X Option 1 - Cracked Concrete	M16x220	ETA
TP 11421	TP CCA-X Option 1 - Cracked Concrete	M16x250	ETA
TP 11422	TP CCA-X Option 1 - Cracked Concrete	M20x170	ETA
TP 11423	TP CCA-X Option 1 - Cracked Concrete	M20x200	ETA

*(Diameter) x (Length) - mm

Characteristic Resistance for seismic performance C1 & C2 – TP CCA

Item Number	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
		NRk,P,seis	NRk [kN]	Ψ [-]	Ψ [-]	Ψ [-]	γM [-]	γM [-]	VRk [kN]	VRk [kN]	γM [-]
TP 11254	E	5.30	-	1.16	1.31	1.41	1.50	-	12.20	-	1.25
TP 11255	F										
TP 11256	G										
TP 11257	H										
TP 11258	K										
TP 11259	L										
TP 11261	E	8.40	5.20	1.22	1.41	1.55	1.50	1.50	17.80	17.80	1.25
TP 11262	F										
TP 11263	G										
TP 11264	H										
TP 11265	I										
TP 11266	L										
TP 11267	M										
TP 11268	I	17.50	8.90	1.22	1.41	1.55	1.50	1.50	33.00	33.00	1.25
TP 11269	K										
TP 11270	O										
TP 11271	Q										

Calculation example

Fixing a tension load of 500 kg (= 4.91 kN) in C30/37 cracked concrete using a TP CCA M10 anchor.

Calculation:A load safety factor of γF = 1.4 is recommended
Verification to be performed: 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 *1.16 / 1.5 = 6.96 kN

Verification: 6.87 < 6.96 kN

Result: The fixing is safe.

Installation Parameters – TP CCA-X

Item Number	Drill bit diameter	Torque	Minimum concrete thickness	Depth of drill hole ≥	Installation depth	Effective anchorage depth	Thickness of fixture ≤	Critical spacing	Critical edge distance	Minimum allowable spacing	Minimum allowable edge distance
	do	Tinst	hmin	h1	hnom	hef	tfix	Scr	Ccr	Smin	Cmin
	(mm)	[Nm]	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)
TP 11400	8	15	100	40	37	30	2	144	72	50	50
TP 11401				60	55	48	9				
TP 11402							29				
TP 11403							49				
TP 11404	10	40	100	60	53	45	5	180	90	60	60
TP 11405			120	75	68	60	25				
TP 11406							35				
TP 11407							55				
TP 11408							85				
TP 11409							105				
TP 11410	12	60	100	65	60	50	4	210	105	70	70
TP 11411			140	85	80	70	4				
TP 11412							14				
TP 11413							24				
TP 11414							34				
TP 11415							54				
TP 11416							84				
TP 11417							104				
TP 11418	16	100	170	105	97	85	28	255	128	128	128
TP 11419							58				
TP 11420							103				
TP 11421							133				
TP 11422	20	200	200	125	114	100	32	300	150	150	150
TP 11423							62				

Anchor Material

No.	Designation	TP CCA	TP CCA-G	TP CCA-X
1	Anchor Body	Carbon steel, galvanized ≥ 5 µm	Carbon steel, sherardized ≥ 40 µm	Carbon steel, galvanized ≥ 5 µm
2	Expansion Clip	A4 stainless steel	A4 stainless steel	Carbon steel, sherardized ≥ 40 µm
3	Nut	DIN 934, galvanized ≥ 5 µm	DIN 934, sherardized ≥ 40 µm	DIN 934, galvanized ≥ 5 µm
4	Washer	DIN 125, DIN 9021, galvanized ≥ 5 µm	DIN 125, DIN 9021, sherardized ≥ 40 µm	DIN 125, DIN 9021, galvanized ≥ 5 µm

Installation Procedure

- Check the concrete base is compact and porosity is insignificant. Drill to the specified diameter and depth values.
  Note: Use drill in hammer mode
- Clean the drill holes completely with an air pump and brush to clear all the dust and fragments
- With the help of a hammer, insert the anchor in the hole until the red ring mark is flat with concrete surface.
  The installation could be done through the fixture baseplate
- 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