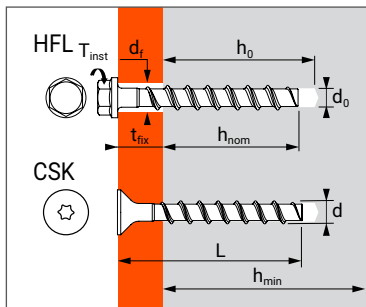


# TAPCON XTREM LT A4



Concrete screw anchor for use in cracked and non-cracked concrete and seismic performance category C1



## CHARACTERISTICS



## TECHNICAL DATA

VERSION	RANGE	Minimum anchorage depth				Maximum anchorage depth				Thread $\emptyset$	Drilling $\emptyset$	Total anchor length	Tighten torque	Code		
		Embed. depth	Max. thick. of part to be fixed	Drilling depth	Min. thick. of base material	Embed. depth	Max. thick. of part to be fixed	Drilling depth	Min. thick. of base material							
		(mm) $h_{nom,1}$	(mm) $t_{fix}$	(mm) $h_0$	(mm) $h_{min}$	(mm) $h_{nom,2}$	(mm) $t_{fix}$	(mm) $h_0$	(mm) $h_{min}$	(mm) $d$	(mm) $d_0$	(mm) $L$	(Nm) $T_{inst}$			
HFL	6X50/15	35	15	45	80	45	5	55	80	7,6	6	50	10	058651		
	6X60/25-5		25				60					058652				
	8X70/25-5		25				70					058655				
	8X80/35-15	45	35	55	80	65	15	75	120			10,5	8	80	20	058656
	10X90/35-5	55	35	65	100	85	5	95	130			12,5	10	90	40	058657
	10X100/45-15		45				100							058658		
10X120/65-35	65		120				058659									
CSK	8X80/35-15	45	35	55	80	65	15	75	120	10,5	8			80	20	058653
	10X90/35-5	45	35	65	100	85	5	95	130	12,5	10			90	40	058654

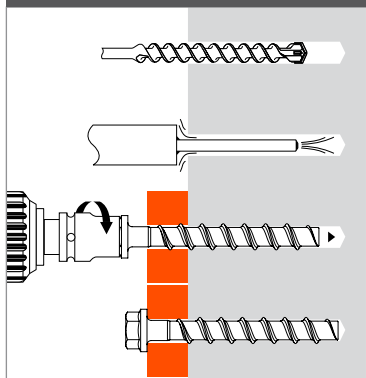
## APPLICATION

- Channel, cable tray
- Brackets
- E-Clips, cowhorn
- TRH clip, rod hanging
- Trunking
- Push-pull bars
- Formwork / shuttering
- Safety barriers
- Stadium seats

## ANCHOR MECHANICAL PROPERTIES

SIZE		$\emptyset 6$	$\emptyset 8$	$\emptyset 10$
$A_s$	[mm <sup>2</sup> ]	20,4	36,3	60,8
$W_{el}$	[mm <sup>3</sup> ]	13,0	30,8	66,9
$M^0_{RK,s}$	[Nm]	10,9	26,0	56,0
$M$	[Nm]	5,0	13,0	28,0
$SW$	[mm]	13	13	15

## INSTALLATION





# TAPCON XTREM LT A4

## MINIMUM THICKNESS OF CONCRETE, CHARACTERISTIC & MINIMUM DISTANCES FOR SPACING, EDGE

SIZE		Ø6	Ø6	Ø8	Ø8	Ø10	Ø10
Embedment depth	$h_{nom}$ [mm]	35 <sup>(1)</sup>	45	45	65	55	85
Minimum thickness of base material	$h_{min}$ [mm]	80	80	80	120	100	130
Characteristic edge and spacing distance for full anchor capacity	$C_{cr} \geq$ [mm]	37,5	51,0	48,0	73,5	60,0	97,5
	$S_{cr} \geq$ [mm]	75	102	96	147	120	195
Minimum distances for cracked and non-cracked concrete	$C_{min}$ [mm]	35	35	35	35	40	40
	$S \geq$ [mm]	35	35	35	35	40	40
	$S_{min}$ [mm]	35	35	35	35	40	40
	$C \geq$ [mm]	35	35	35	35	40	40

## CHARACTERISTIC RESISTANCES [kN]

Characteristic resistances are shown as informative, and have to be used by application of safety factors.

### TENSILE

#### NON-CRACKED CONCRETE - C20/25

SIZE	Ø6	Ø8	Ø10
$h_{nom,1}$ [mm]	35 <sup>(1)</sup>	45	55
$N_{Rk,p}$ [kN]	3,5	9,0	11,0
$h_{nom,2}$ [mm]	45	65	85
$N_{Rk,p}$ [kN]	4,0	17,0	25,0

#### CRACKED CONCRETE - C20/25

SIZE	Ø6	Ø8	Ø10
$h_{nom,1}$ [mm]	35 <sup>(1)</sup>	45	55
$N_{Rk,p}$ [kN]	2,5	3,0	6,0
$h_{nom,2}$ [mm]	45	65	85
$N_{Rk,p}$ [kN]	1,5	8,0	17,0

### SHEAR

#### CRACKED AND NON-CRACKED CONCRETE - C20/25 to C50/60

SIZE	Ø6	Ø8	Ø10
$h_{nom,1}$ [mm]	35 <sup>(1)</sup>	45	55
$V_{Rk,s}$ [kN]	<u>7,0</u>	<u>13,5</u>	<u>22,5</u>
$h_{nom,2}$ [mm]	45	65	85
$V_{Rk,s}$ [kN]	<u>7,0</u>	<u>17,0</u>	<u>34,0</u>

## RECOMMENDED LOADS OF ONE ANCHOR WITHOUT INFLUENCE OF SPACING & CONCRETE EDGE [kN]

Recommended values are determined from performances given in the ETA, and are guaranteed for spacing  $\geq S_{cr}$  and edge distance  $\geq C_{cr}$ .

### TENSILE

#### NON-CRACKED CONCRETE - C20/25

SIZE	Ø6	Ø8	Ø10
$h_{nom,1}$ [mm]	35 <sup>(1)</sup>	45	55
$N_{Rec}$ [kN]	1,7	4,3	5,2
$h_{nom,2}$ [mm]	45	65	85
$N_{Rec}$ [kN]	1,9	8,1	11,9

#### CRACKED CONCRETE - C20/25

SIZE	Ø6	Ø8	Ø10
$h_{nom,1}$ [mm]	35 <sup>(1)</sup>	45	55
$N_{Rec}$ [kN]	1,2	1,4	2,9
$h_{nom,2}$ [mm]	45	65	85
$N_{Rec}$ [kN]	0,7	3,8	8,1

$$N_{Rec} = \min [N_{Rd,p}; N_{Rd,c}; N_{Rd,s}] / \gamma_F; \gamma_F = 1,4$$

### SHEAR

#### CRACKED AND NON-CRACKED CONCRETE - C20/25 to C50/60

SIZE	Ø6	Ø8	Ø10
$h_{nom,1}$ [mm]	35 <sup>(1)</sup>	45	55
$V_{Rec}$ [kN]	<u>4,0</u>	<u>7,7</u>	<u>12,9</u>
$h_{nom,2}$ [mm]	45	65	85
$V_{Rec}$ [kN]	<u>4,0</u>	<u>9,7</u>	<u>19,4</u>

$$V_{Rec} = V_{Rd,s} / \gamma_F; \gamma_F = 1,4$$

<sup>(1)</sup> Only for statically indeterminate non-structural systems (multiple use)

**Nota:** The values indicated *in italics and underlined* correspond to steel failure

# TAPCON XTREM LT A4



i-Expert Software

Design resistances for static, seismic and fire loads are determined from performances given in the ETA, and are guaranteed for spacing  $\geq S_{cr}$  and edge distance  $\geq C_{cr}$ . For project with reduced spacing and edge distance, we recommend to use SPIT i-Expert software to design your project according to EN 1992-4.

## DESIGN RESISTANCE FOR STATIC LOADS IN NON CRACKED CONCRETE [kN]

TENSILE			
SIZE	Ø6	Ø8	Ø10
$h_{nom,1}$ [mm]	35 <sup>(1)</sup>	45	55
$N_{Rd,uncr}$ [kN]	C20/25	2,3	7,3
	C40/50	3,3	10,4
$h_{nom,2}$ [mm]	45	65	85
$N_{Rd,uncr}$ [kN]	C20/25	2,7	11,3
	C40/50	3,8	23,6

Distances  $S_{cr}$  and  $C_{cr}$  must be fulfilled

$$N_{Rd,uncr} = \min[N_{Rk,p,uncr} / \gamma_{Mc}; N_{Rk,s} / \gamma_{Ms,N}]$$

$$\gamma_{Mc} = 1,5; \gamma_{Ms,N} = 1,5$$

SHEAR			
SIZE	Ø6	Ø8	Ø10
$h_{nom,1}$ [mm]	35 <sup>(1)</sup>	45	55
$V_{Rd,s}$ [kN] $\geq$ C20/25	<u>5,6</u>	<u>10,8</u>	<u>18,0</u>
$h_{nom,2}$ [mm]	45	65	85
$V_{Rd,s}$ [kN] $\geq$ C20/25	<u>5,6</u>	<u>13,6</u>	<u>27,2</u>

$$V_{Rd,s} = V_{Rk,s} / \gamma_{Ms,V}$$

$$\gamma_{Ms,V} = 1,25$$

## DESIGN RESISTANCE FOR STATIC LOADS IN CRACKED CONCRETE [kN]

TENSILE			
SIZE	Ø6	Ø8	Ø10
$h_{nom,1}$ [mm]	35 <sup>(1)</sup>	45	55
$N_{Rd,cr}$ [kN]	C20/25	1,7	4,0
	C40/50	2,4	5,7
$h_{nom,2}$ [mm]	45	65	85
$N_{Rd,cr}$ [kN]	C20/25	1,0	11,3
	C40/50	1,4	16,0

Distances  $S_{cr}$  and  $C_{cr}$  must be fulfilled

$$N_{Rd,cr} = \min[N_{Rk,p,cr} / \gamma_{Mc}; N_{Rk,s} / \gamma_{Ms,N}]$$

$$\gamma_{Mc} = 1,5; \gamma_{Ms,N} = 1,5$$

SHEAR			
SIZE	Ø6	Ø8	Ø10
$h_{nom,1}$ [mm]	35 <sup>(1)</sup>	45	55
$V_{Rd,s}$ [kN] $\geq$ C20/25	<u>5,6</u>	<u>10,8</u>	<u>18,0</u>
$h_{nom,2}$ [mm]	45	65	85
$V_{Rd,s}$ [kN] $\geq$ C20/25	<u>5,6</u>	<u>13,6</u>	<u>27,2</u>

$$V_{Rd,s} = V_{Rk,s} / \gamma_{Ms,V}$$

$$\gamma_{Ms,V} = 1,25$$

## DESIGN RESISTANCE FOR SEISMIC LOADS CATEGORY C1 [kN]

TENSILE			
SIZE	Ø6	Ø8	Ø10
$h_{nom,1}$ [mm]	-	45	55
$N_{Rd,C1}$ [kN]	C20/25	-	4,0
	C40/50	-	5,7
$h_{nom,2}$ [mm]	45	65	85
$N_{Rd,C1}$ [kN]	C20/25	1,0	11,3
	C40/50	1,4	16,0

Distances  $S_{cr}$  and  $C_{cr}$  must be fulfilled

$$N_{Rd,C1} = \min[N_{Rk,p,eq,C1} / \gamma_{Mc}; N_{Rk,s,eq,C1} / \gamma_{Ms,N}]$$

$$\gamma_{Mc} = 1,5; \gamma_{Ms,N} = 1,5$$

SHEAR			
SIZE	Ø6	Ø8	Ø10
$h_{nom,1}$ [mm]	-	45	55
$h_{nom,2}$ [mm]	45	65	85
$V_{Rd,s,C1}$ [kN] $\geq$ C20/25	<u>2,8</u>	<u>8,0</u>	<u>11,2</u>

$$V_{Rd,s,C1} = V_{Rk,s,eq,C1} / \gamma_{Ms,V}$$

$$\gamma_{Ms,V} = 1,25$$

## DESIGN RESISTANCE FOR FIRE EXPOSURE [kN]

TENSILE			
SIZE	Ø6	Ø8	Ø10
$h_{nom,2}$ [mm]	45	65	85
$N_{Rd,fi}$ R30 [kN]	0,9	2,4	4,4
$N_{Rd,fi}$ R60 [kN]	0,8	1,7	3,3
$N_{Rd,fi}$ R90 [kN]	0,6	1,1	2,3
$N_{Rd,fi}$ R120 [kN]	0,4	0,7	1,7

$$N_{Rd,fi} = N_{Rk,s,fi} / \gamma_{M,fi}$$

$$\gamma_{M,fi} = 1,0$$

SHEAR			
SIZE	Ø6	Ø8	Ø10
$h_{nom,2}$ [mm]	45	65	85
$V_{Rd,fi}$ R30 [kN]	0,9	2,4	4,4
$V_{Rd,fi}$ R60 [kN]	0,8	1,7	3,3
$V_{Rd,fi}$ R90 [kN]	0,6	1,1	2,3
$V_{Rd,fi}$ R120 [kN]	0,4	0,7	1,7

$$V_{Rd,fi} = V_{Rk,s,fi} / \gamma_{M,fi}$$

$$\gamma_{M,fi} = 1,0$$

<sup>(1)</sup> Only for statically indeterminate non-structural systems (multiple use)

**Nota:** The values indicated in *italics and underlined* correspond to steel failure