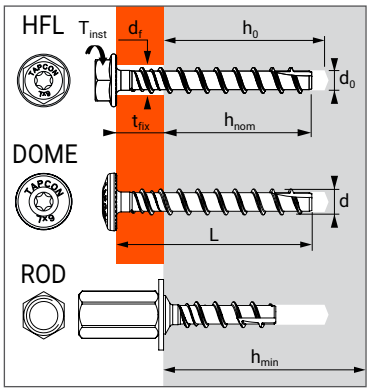
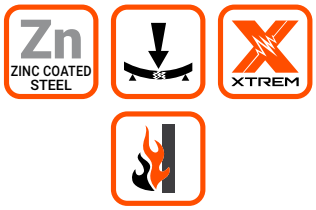
TAPCON 5 XTREM

ETA - 24/0388
ETA - 24/0389

Concrete screw anchor for use in cracked and non-cracked concrete and seismic performance category C1 & C2



CHARACTERISTICS



TECHNISCHE DATEN

VERSION	RANGE	Verankerungstiefe $h_{nom,1}$ Verank. tiefe (mm) $h_{nom,1}$	Max. Klemmstärke (mm) t_{fix}	Min. Dicke Untergrund (mm) h_{min}	Verankerungstiefe $h_{nom,2}$ Verank. tiefe (mm) $h_{nom,2}$	Max. Klemmstärke (mm) t_{fix}	Min. Dicke Untergrund (mm) h_{min}	Verankerungstiefe $h_{nom,3}$ Verank. tiefe (mm) $h_{nom,3}$	Max. Klemmstärke (mm) t_{fix}	Min. Dicke Untergrund (mm) h_{min}	Gewinde Ø (mm) d	Bohrtiefe (mm) h_0	Bohr Ø (mm) d_0	Schrauben Länge (mm) L	Code
HFL	6X40/5	35	5		-	-		-	-					40	058661
	6X50/15	35	15		40	10		-	-					50	058663
	6X60/25-5	35	25	80	40	20	80	55	5	100	7,5	h_{nom} + 10 mm	6	60	058664
	6X80/45-25	35	45		40	40		55	25					80	058665
	6X100/65-45	35	65		40	60		55	45					100	058666
	8X50/5	45	5		-	-		-	-					50	058667
	8X60/15	45	15		-	-		-	-					60	058668
	8X70/25-5	45	25	90	65	5	115	-	-	-		h_{nom} + 10 mm	8	70	058669
	8X80/35-15	45	35		65	15		-	-					80	058670
	8X100/55-35	45	55		65	35		-	-					100	058671
DOME	6X40/5	35	5	80	-	-		-	-	100	7,5	h_{nom} + 10 mm	6	40	058680
	6X60/25-5	35	25		40	20	80	55	5					60	058681
ROD	6X35/M8-M10	35	-	80	-	-	-	-	-	100	7,5	h_{nom} + 10 mm	6	35	058678
	6X55/M8-M10	-	-		-	-		55	-					55	058679

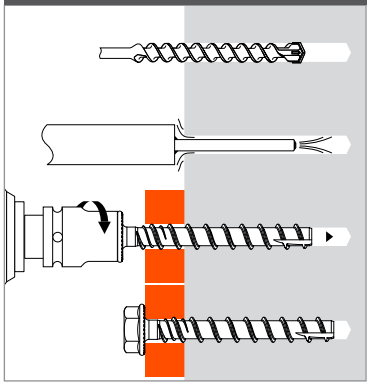
APPLICATION

- Channel, cable tray
- Brackets
- E-Clips, cowhorn
- Trunking
- Safety barriers

ANCHOR MECHANICAL PROPERTIES

SIZE			Ø6	Ø8
$M^0_{Rk,s}$	[Nm]	Characteristic bending moment	22,9	54,2
M	[Nm]	Recommended bending moment	11,0	26,1

INSTALLATION



Ø	HFL	DOME	ROD
6	SW13/TX30	TX30	SW13
8	SW15/TX40	-	-

MAX. TORQUE IMPACT SCREW DRIVER

SIZE		Ø6	Ø6	Ø6	Ø8	Ø8
h_{nom}	[mm]	35	40	55	45	65
Max. T impact	[Nm]	160	170	210	400	450

Installation with torque impact screw driver - Stop srewing when the head of the screw is in contact with the fixture.

TAPCON 5 XTREM

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

SIZE			Ø6	Ø6	Ø6	Ø8	Ø8
Embedment depth	h_{nom}	[mm]	35	40	55	45	65
Minimum thickness of base material	h_{min}	[mm]	80	80	100	90	115
Characteristic edge and spacing distances for full anchor capacity	$C_{cr} \geq$	[mm]	40,5	46	66	52,5	78
	$S_{cr} \geq$	[mm]	81	93	132	105	156
Minimum distances for cracked and non-cracked concrete	C_{min}	[mm]	35	40	40	40	50
	S_{min}	[mm]	35	40	40	40	50

CHARACTERISTIC RESISTANCES [kN]

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

----- INDIVIDUAL FASTENERS FOR STRUCTURAL SYSTEMS -----

TENSILE

NON CRACKED CONCRETE – C20/25

SIZE		Ø6	Ø6	Ø8	Ø8
h_{nom}	[mm]	40	55	45	65
$N_{Rk,p}$	[kN]	7,0	10,0	12,1	18,3

CRACKED CONCRETE– C20/25

SIZE		Ø6	Ø6	Ø8	Ø8
h_{nom}	[mm]	40	55	45	65
$N_{Rk,p}$	[kN]	2,5	5,5	4,5	11,2

SHEAR

CRACKED AND NON CRACKED CONCRETE – C20/25 to C50/60

SIZE		Ø6	Ø6	Ø8	Ø8
h_{nom}	[mm]	40	55	45	65
$V_{Rk,s}$	[kN]	*8,5*	*8,5*	*12,2*	*17,9*

----- FASTENERS FOR REDUNDANT NON-STRUCTURAL SYSTEMS -----

TENSILE

CRACKED AND NON CRACKED CONCRETE – C20/25

SIZE		Ø6	Ø6
h_{nom}	[mm]	35	55
$N_{Rk,p}$	[kN]	3,0	10,0

HOLLOW CONCRETE SLAB ≥ C30/37

SIZE		Ø6
h_{nom}	[mm]	≥ 25
$N_{Rk,p}$	[kN]	2,5

SHEAR

CRACKED AND NON CRACKED CONCRETE – C20/25 to C50/60

SIZE		Ø6	Ø6
h_{nom}	[mm]	35	55
$V_{Rk,s}$	[kN]	*3,4*	*8,5*

HOLLOW CONCRETE SLAB ≥ C30/37

SIZE		Ø6
h_{nom}	[mm]	≥ 25
$V_{Rk,s}$	[kN]	2,5

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 ≥ S_{cr} and edge distance ≥ C_{cr}.

----- INDIVIDUAL FASTENERS FOR STRUCTURAL SYSTEMS -----

TENSILE

NON CRACKED CONCRETE – C20/25

SIZE		Ø6	Ø6	Ø8	Ø8
h_{nom}	[mm]	40	55	45	65
N_{Rec}	[kN]	2,4	4,0	4,8	7,3

CRACKED CONCRETE– C20/25

SIZE		Ø6	Ø6	Ø8	Ø8
h_{nom}	[mm]	40	55	45	65
N_{Rec}	[kN]	0,9	2,2	1,8	4,4

SHEAR

CRACKED AND NON CRACKED CONCRETE – C20/25 to C50/60

SIZE		Ø6	Ø6	Ø8	Ø8
h_{nom}	[mm]	40	55	45	65
V_{Rec}	[kN]	*4,0*	*4,0*	*5,8*	*8,5*

----- FASTENERS FOR REDUNDANT NON-STRUCTURAL SYSTEMS -----

TENSILE

CRACKED AND NON CRACKED CONCRETE – C20/25

SIZE		Ø6	Ø6
h_{nom}	[mm]	35	55
N_{Rec}	[kN]	1,2	4,0

HOLLOW CONCRETE SLAB ≥ C30/37

SIZE		Ø6
h_{nom}	[mm]	≥ 25
N_{Rec}	[kN]	1,0

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

SHEAR

CRACKED AND NON CRACKED CONCRETE – C20/25 to C50/60

SIZE		Ø6	Ø6
h_{nom}	[mm]	35	55
V_{Rec}	[kN]	*1,35*	*4,0*

HOLLOW CONCRETE SLAB ≥ C30/37

SIZE		Ø6
h_{nom}	[mm]	≥ 25
V_{Rec}	[kN]	1,0

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

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

TAPCON 5 XTREM

Logiciel SPIT i-Expert

Design resistances for static, seismic and fire loads are determined from performances given in the ETA, and are guaranteed for spacing ≥ S_{cr} and edge distance ≥ 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.

----- INDIVIDUAL FASTENERS FOR STRUCTURAL SYSTEMS -----

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

TENSILE

SIZE			Ø6	Ø6	Ø8	Ø8
h_{nom}	[mm]		40	55	45	65
$N_{Rd,uncr}$	[kN]	C20/25	3,3	5,6	6,7	10,2
		C40/50	3,8	7,0	7,8	12,9

Distances S_{cr} and C_{cr} must be fulfilled ; $N_{Rd,uncr} = \min[N_{Rk,p,uncr} / \gamma_{Mc} ; N_{Rk,s} / \gamma_{Ms,N}]$
γ_{Mc} = 2,1 for h_{nom} = 40 mm ; γ_{Mc} = 1,8 for h_{nom} ≥ 45 mm ; $\gamma_{Ms,N}$ = 1,4

SHEAR

SIZE			Ø6	Ø6	Ø8	Ø8
h_{nom}	[mm]		40	55	45	65
$V_{Rd,s}$	[kN]	≥ C20/25	*5,7*	*5,7*	*8,1*	*11,9*

$V_{Rd,s} = V_{Rk,s} / \gamma_{Ms,V}$
$\gamma_{Ms,V}$ = 1,5

DESIGN RESISTANCE FOR STATIC LOADS IN CRACKED CONCRETE [kN]

TENSILE

SIZE			Ø6	Ø6	Ø8	Ø8
h_{nom}	[mm]		40	55	45	65
$N_{Rd,cr}$	[kN]	C20/25	1,2	3,1	2,5	6,2
		C40/50	1,3	3,9	3,4	7,9

Distances S_{cr} and C_{cr} must be fulfilled ; $N_{Rd,cr} = \min[N_{Rk,p,cr} / \gamma_{Mc} ; N_{Rk,s} / \gamma_{Ms,N}]$
γ_{Mc} = 2,1 for h_{nom} = 40 mm ; γ_{Mc} = 1,8 for h_{nom} ≥ 45 mm ; $\gamma_{Ms,N}$ = 1,4

SHEAR

SIZE			Ø6	Ø6	Ø8	Ø8
h_{nom}	[mm]		40	55	45	65
$V_{Rd,s}$	[kN]	≥ C20/25	*5,7*	*5,7*	*8,1*	*11,9*

$V_{Rd,s} = V_{Rk,s} / \gamma_{Ms,V}$
$\gamma_{Ms,V}$ = 1,5

DESIGN RESISTANCE FOR SEISMIC LOADS CATEGORY C1 [kN]

TENSILE

SIZE			Ø6	Ø6	Ø8
h_{nom}	[mm]		40	55	65
$N_{Rd,C1}$	[kN]	C20/25	1,0	2,4	5,6
		C40/50	1,5	3,1	7,1

Distances S_{cr} and C_{cr} must be fulfilled ; $N_{Rd,C1} = \min[N_{Rk,p,eq,C1} / \gamma_{Mc} ; N_{Rk,s,eq,C1} / \gamma_{Ms,N}]$
γ_{Mc} = 2,1 for h_{nom} = 40 mm ; γ_{Mc} = 1,8 for h_{nom} ≥ 45 mm ; $\gamma_{Ms,N}$ = 1,4

SHEAR

SIZE			Ø6	Ø6	Ø8
h_{nom}	[mm]		40	55	65
$V_{Rd,s,C1}$	[kN]	≥ C20/25	*2,9*	*4,9*	*7,2*

$V_{Rd,s,C1} = V_{Rk,s,eq,C1} / \gamma_{Ms,V}$; $\gamma_{Ms,V}$ = 1,5

DESIGN RESISTANCE FOR SEISMIC LOADS CATEGORY C2 [kN]

TENSILE

SIZE			Ø8
h_{nom}	[mm]		65
$N_{Rd,C2}$	[kN]	C20/25	1,6
		C40/50	1,8

Distances S_{cr} and C_{cr} must be fulfilled ; $N_{Rd,C2} = \min[N_{Rk,p,eq,C2} / \gamma_{Mc} ; N_{Rk,s,eq,C2} / \gamma_{Ms,N}]$
γ_{Mc} = 2,1 for h_{nom} = 40 mm ; γ_{Mc} = 1,8 for h_{nom} ≥ 45 mm ; $\gamma_{Ms,N}$ = 1,4

SHEAR

SIZE			Ø8
h_{nom}	[mm]		65
$V_{Rd,s,C2}$	[kN]	≥ C20/25	*6,1*

$V_{Rd,s,C2} = V_{Rk,s,eq,C2} / \gamma_{Ms,V}$; $\gamma_{Ms,V}$ = 1,5

----- FASTENERS FOR REDUNDANT NON-STRUCTURAL SYSTEMS -----

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

TENSILE

SIZE			Ø6	Ø6
h_{nom}	[mm]		35	55
N_{Rd}	[kN]	C20/25	1,7	5,6
		C40/50	2,2	7,0

Distances S_{cr} and C_{cr} must be fulfilled ; $N_{Rd} = \min[N_{Rk,p} / \gamma_{Mc} ; N_{Rk,s} / \gamma_{Ms,N}]$
γ_{Mc} = 1,8 ; $\gamma_{Ms,N}$ = 1,4

SHEAR

SIZE			Ø6	Ø6
h_{nom}	[mm]		35	55
$V_{Rd,s}$	[kN]	≥ C20/25	*2,25*	*5,7*

$V_{Rd,s} = V_{Rk,s} / \gamma_{Ms,V}$; $\gamma_{Ms,V}$ = 1,5

DESIGN RESISTANCE FOR STATIC LOADS IN HOLLOW CONCRETE SLAB [kN]

TENSILE

SIZE			Ø6
h_{nom}	[mm]		≥ 25
N_{Rd}	[kN]	≥ C30/37	1,4

Distances S_{cr} and C_{cr} must be fulfilled ; $N_{Rd} = F_{Rk} / \gamma_{Mc}$; γ_{Mc} = 1,8

SHEAR

SIZE			Ø6
h_{nom}	[mm]		≥ 25
$V_{Rd,s}$	[kN]	≥ C30/37	1,4

$V_{Rd,s} = F_{Rk} / \gamma_{Mc}$; γ_{Mc} = 1,8

DESIGN RESISTANCE FOR FIRE EXPOSURE [kN]

TENSILE

		Hollow slab	Concrete			
SIZE		Ø6	Ø6	Ø6	Ø8	Ø8
h_{nom}	[mm]	≥25	35-40	55	45	65
$N_{Rd,fi}$ R30	[kN]	0,72	1,0	1,5	0,5	0,5
$N_{Rd,fi}$ R60	[kN]	0,62	1,0	1,3	0,5	0,5
$N_{Rd,fi}$ R90	[kN]	0,53	0,7	0,84	0,4	0,4
$N_{Rd,fi}$ R120	[kN]	0,48	0,54	0,62	0,3	0,3

$N_{Rd,fi} = N_{Rk,s,fi} / \gamma_{M,fi}$; $\gamma_{M,fi}$ = 1,0

SHEAR

		Hollow slab	Concrete			
SIZE		Ø6	Ø6	Ø6	Ø8	Ø8
h_{nom}	[mm]	≥25	35-40	55	45	65
$V_{Rd,fi}$ R30	[kN]	0,72	1,0	1,5	0,5	0,5
$V_{Rd,fi}$ R60	[kN]	0,62	1,0	1,3	0,5	0,5
$V_{Rd,fi}$ R90	[kN]	0,53	0,7	0,84	0,4	0,4
$V_{Rd,fi}$ R120	[kN]	0,48	0,54	0,62	0,3	0,3

$V_{Rd,fi} = V_{Rk,s,fi} / \gamma_{M,fi}$; $\gamma_{M,fi}$ = 1,0

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