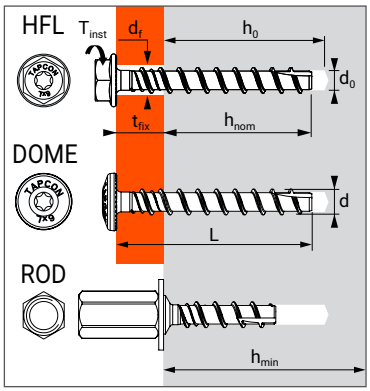
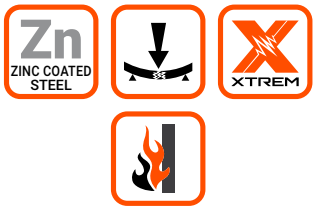
TAPCON 5 XTREM

ETA - 24/0388
ETA - 24/0389

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



CHARACTERISTICS



TECHNICAL DATA

VERSION	RANGE	Anchorage depth $h_{nom,1}$ = **35 mm**			Anchorage depth $h_{nom,2}$ = **40 mm**			Anchorage depth $h_{nom,3}$ = **55 mm**			Thread Ø	Drilling depth	Drilling Ø	Total anchor length	Code
		Embed. depth (mm) $h_{nom,1}$	Max. thick. of part to be fixed (mm) t_{fix}	Min. thick. of base material (mm) h_{min}	Embed. depth (mm) $h_{nom,2}$	Max. thick. of part to be fixed (mm) t_{fix}	Min. thick. of base material (mm) h_{min}	Embed. depth (mm) $h_{nom,3}$	Max. thick. of part to be fixed (mm) t_{fix}	Min. thick. of base material (mm) h_{min}	(mm) d	(mm) h_0	(mm) d_0	(mm) L	
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
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

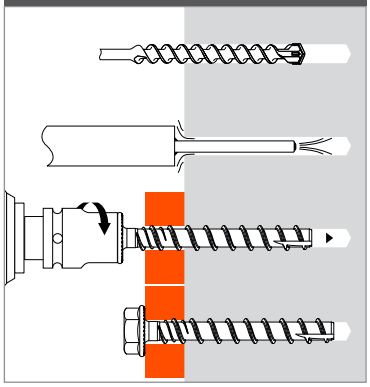
APPLICATION

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

ANCHOR MECHANICAL PROPERTIES

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

INSTALLATION



HFL	DOME	ROD
SW13/TX30	TX30	SW13

MAX. TORQUE IMPACT SCREW DRIVER

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

Installation with torque impact screw driver - Stop sewing 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
Embedment depth	h_{nom}	[mm]	35	40	55
Minimum thickness of base material	h_{min}	[mm]	80	80	100
Characteristic edge and spacing distances for full anchor capacity	$C_{cr} \geq$	[mm]	40,5	46	66
	$S_{cr} \geq$	[mm]	81	93	132
Minimum distances for cracked and non-cracked concrete	C_{min}	[mm]	35	40	40
	S_{min}	[mm]	35	40	40

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
h_{nom}	[mm]	40	55
$N_{Rk,p}$	[kN]	7,0	10,0

CRACKED CONCRETE– C20/25

SIZE		Ø6	Ø6
h_{nom}	[mm]	40	55
$N_{Rk,p}$	[kN]	2,5	5,5

SHEAR

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

SIZE		Ø6	Ø6
h_{nom}	[mm]	40	55
$V_{Rk,s}$	[kN]	*8,5*	*8,5*

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

TENSILE

CRACKED AND NON CRACKED CONCRETE – C20/25

SIZE		Ø6	Ø6
h_{nom}	[mm]	35	55
$N_{Rk,p}$	[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
h_{nom}	[mm]	40	55
N_{Rec}	[kN]	2,4	4,0

CRACKED CONCRETE– C20/25

SIZE		Ø6	Ø6
h_{nom}	[mm]	40	55
N_{Rec}	[kN]	0,9	2,2

SHEAR

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

SIZE		Ø6	Ø6
h_{nom}	[mm]	40	55
V_{Rec}	[kN]	*4,0*	*4,0*

----- 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
h_{nom}	[mm]		40	55
$N_{Rd,uncr}$	[kN]	C20/25	3,3	5,6
		C40/50	3,8	7,0

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} = 55 mm ; $\gamma_{Ms,N}$ = 1,4

SHEAR

SIZE			Ø6	Ø6
h_{nom}	[mm]		40	55
$V_{Rd,s}$	[kN]	≥ C20/25	*5,7*	*5,7*

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

$\gamma_{Ms,V}$ = 1,5

DESIGN RESISTANCE FOR STATIC LOADS IN CRACKED CONCRETE [kN]

TENSILE

SIZE			Ø6	Ø6
h_{nom}	[mm]		40	55
$N_{Rd,cr}$	[kN]	C20/25	1,2	3,1
		C40/50	1,3	3,9

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} = 55 mm ; $\gamma_{Ms,N}$ = 1,4

SHEAR

SIZE			Ø6	Ø6
h_{nom}	[mm]		40	55
$V_{Rd,s}$	[kN]	≥ C20/25	*5,7*	*5,7*

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

$\gamma_{Ms,V}$ = 1,5

DESIGN RESISTANCE FOR SEISMIC LOADS CATEGORY C1 [kN]

TENSILE

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

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} = 55 mm ; $\gamma_{Ms,N}$ = 1,4

SHEAR

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

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

$\gamma_{Ms,V}$ = 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

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

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

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

SHEAR

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

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

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

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