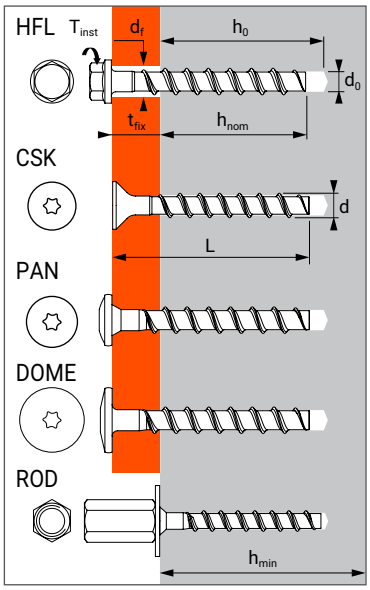
TAPCON

ETA - 16/0373
*ETA - 17/0174

Concrete screw anchor, for use in cracked and non-cracked concrete, and hollow concrete slab



TECHNICAL DATA

VERSION	RANGE	Embedment depth (mm) h_{nom}	Max. thick. of part to be fixed (mm) t_{fix}	Drilling depth (mm) h_0	Min. thick. of base material (mm) h_{min}	Thread Ø (mm) d	Drilling Ø (mm) d_0	Total anchor length (mm) L	Tighten torque (Nm) T_{inst}	Code
HFL	5X40/5	35	5	40	80	6,5	5	40	8	058726
	5X50/15		15					50		058727
	5X60/25		25					60		058728
	6X40/5	35	5	40	80	7,5	6	40	10	058729
CSK	5X40/5	35	5	40	80	6,5	5	40	8	058770
	5X60/25		25					60		058771
	6X40/5	35	5	40	80	7,5	6	40	10	058772
PAN	5X40/5	35	5	40	80	6,5	5	40	8	058779
	5X50/15		15					50		058780
	5X60/25		25					60		058781
	6X30/5*	25	3	28	80	7,0	6	28	10	058787
	6X40/5	35	5	40		7,5		40		058782
DOME	6X40/5	35	5	40	80	7,5	6	40	10	058783
	6X60/5		25					60		058784
ROD	6X35/M6-M8	35	-	40	80	7,5	6	35	10	058788
	6X35/M8-M10	35	-	40	80			35		058785
	6X55/M8-M10	55	-	60	100			55		058786

CHARACTERISTICS

Zn ZINC COATED STEEL

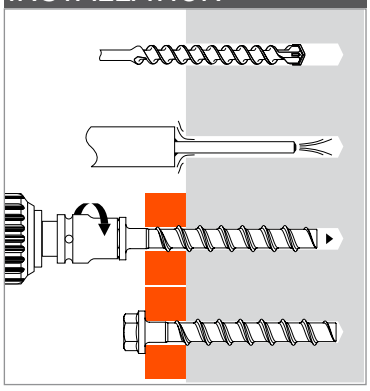
ANCHOR MECHANICAL PROPERTIES

SIZE			Ø5	Ø6
As	[mm^2]	Stressed cross-section	33,0	44,2
W_{el}	[mm^3]	Elastic section modulus	27,0	41,4
$M^0_{Rk,s}$	[Nm]	Characteristic bending moment	5,3	10,0
M	[Nm]	Recommended bending moment	7,2	5,0
SW	[mm]	Key size	10	13

APPLICATION

- Channel, cable tray
- Brackets
- E-Clips, cowhorn
- Rod hanging

INSTALLATION



TAPCON

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

SIZE			Ø5	Ø6X30	Ø6	Ø6
Embedment depth	h_{nom}	[mm]	35	25	35	55
Minimum thickness of base material	h_{min}	[mm]	80	80	80	100
Characteristic edge and spacing distances for full anchor capacity	C_{cr} ≥	[mm]	52,5	150	52,5	82,5
	S_{cr} ≥	[mm]	105	200	105	165
Minimum distances for cracked and non-cracked concrete	C_{min}	[mm]	35	150	35	40
	S ≥	[mm]				
	S_{min}	[mm]	35	200	35	40
	C ≥	[mm]				
Minimum distances for hollow concrete slab	C_{min}	[mm]	-	-	100	100
	S ≥	[mm]				
	S_{min}	[mm]	-	-	100	100
	C ≥	[mm]				

CHARACTERISTIC RESISTANCES [kN]

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

TENSILE

CRACKED AND NON-CRACKED CONCRETE – C20/25

SIZE		Ø5	Ø6X30	Ø6	Ø6
h_{nom}	[mm]	35	25	35	55
$N_{Rk,p}$	[kN]	1,5	0,9	3,0	7,5

HOLLOW CONCRETE SLAB

DIMENSIONS		Ø5	Ø6X30	Ø6	Ø6
Bottom flange thickness	[mm]	-	-	≥ 25	≥ 35
$N_{Rk,p}$	[kN]	-	-	1,0	3,0

SHEAR

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

SIZE		Ø5	Ø6X30	Ø6	Ø6
h_{nom}	[mm]	35	25	35	55
$V_{Rk,s}$	[kN]	*4,4*	*0,9*	*7,0*	*7,0*

HOLLOW CONCRETE SLAB

DIMENSIONS		Ø5	Ø6X30	Ø6	Ø6
Bottom flange thickness	[mm]	-	-	≥ 25	≥ 35
$V_{Rk,p}$	[kN]	-	-	1,0	3,0

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}.

TENSILE

CRACKED AND NON-CRACKED CONCRETE – C20/25

SIZE		Ø5	Ø6X30	Ø6	Ø6
h_{nom}	[mm]	35	25	35	55
N_{Rec}	[kN]	0,6	0,4	1,4	3,6

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

HOLLOW CONCRETE SLAB

DIMENSIONS		Ø5	Ø6X30	Ø6	Ø6
Bottom flange thickness	[mm]	-	-	≥ 25	≥ 35
N_{Rec}	[kN]	-	-	0,5	1,4

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

SHEAR

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

SIZE		Ø5	Ø6X30	Ø6	Ø6
h_{nom}	[mm]	35	25	35	55
V_{Rec}	[kN]	*2,5*	*0,4*	*4,0*	*4,0*

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

HOLLOW CONCRETE SLAB

DIMENSIONS		Ø5	Ø6X30	Ø6	Ø6
Bottom flange thickness	[mm]	-	-	≥ 25	≥ 35
V_{Rec}	[kN]	-	-	0,5	1,4

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

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

TAPCON

i-Expert Software

Design resistances for static 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.

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

TENSILE

SIZE			Ø5	Ø6X30	Ø6	Ø6
h_{nom}	[mm]		35	25	35	55
$N_{Rd,uncr}$	[kN]	C20/25	0,8	0,6	2,0	5,0
		C40/50	1,2	0,6	2,8	7,1

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			Ø5	Ø6X30	Ø6	Ø6
h_{nom}	[mm]		35	25	35	55
$V_{Rd,s}$	[kN]	≥ C20/25	*3,5*	*0,6*	*5,6*	*5,6*

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

$\gamma_{Ms,V} = 1,25$; Ø6X30: $\gamma_{Ms,V} = 1,5$

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

TENSILE

SIZE		Ø5	Ø6X30	Ø6	Ø6
Bottom flange thickness	[mm]	-	-	≥ 25	≥ 35
N_{Rd}	[kN]	-	-	0,7	2,0

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

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

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

SHEAR

SIZE		Ø5	Ø6X30	Ø6	Ø6
Bottom flange thickness	[mm]	-	-	≥ 25	≥ 35
$V_{Rd,s}$	[kN]	-	-	0,7	2,0

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

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

DESIGN RESISTANCE FOR FIRE EXPOSURE [kN]

TENSILE

SIZE		Ø5	Ø6X30	Ø6	Ø6
h_{nom}	[mm]	35	25	35	55
$N_{Rd,fi}$ R30	[kN]	-	0,27	0,75	0,90
$N_{Rd,fi}$ R60	[kN]	-	0,27	0,75	0,80
$N_{Rd,fi}$ R90	[kN]	-	0,22	0,60	0,60
$N_{Rd,fi}$ R120	[kN]	-	0,17	0,40	0,40

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

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

SHEAR

SIZE		Ø5	Ø6X30	Ø6	Ø6
h_{nom}	[mm]	35	25	35	55
$V_{Rd,fi}$ R30	[kN]	-	0,27	0,75	0,90
$V_{Rd,fi}$ R60	[kN]	-	0,27	0,75	0,80
$V_{Rd,fi}$ R90	[kN]	-	0,22	0,60	0,60
$V_{Rd,fi}$ R120	[kN]	-	0,17	0,40	0,40

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

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

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