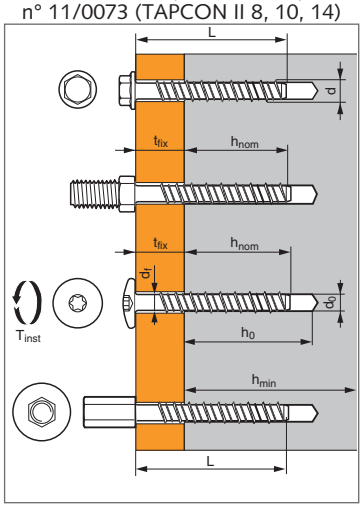
SPIT TAPCON®II

Zinc coated steel



ETA
European Technical Approval

ETA Option 1
n° 11/0069 (TAPCON II 6)
n° 11/0073 (TAPCON II 8, 10, 14)



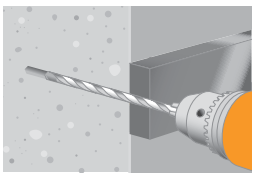
APPLICATION

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

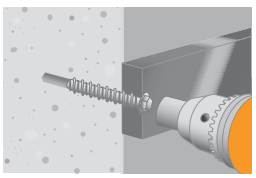
MATERIAL

- **Bolt:** Min. zinc coated steel 5 µm ; min. tensile strength: 1000 N/mm²

INSTALLATION



DRILL



SCREW

Concrete screw anchor

Technical data

	SPIT TAPCON II	Anchor diameter (mm) **d**	Drilling diameter (mm) d_o	Total anchor length (mm) **L**	**Minimum embedment** depth (mm) $h_{nom,min}$	Maximum **thickness** part to be fixed (mm) t_{fix}	Hole depth (mm) h_o	Minimum thickness base material (mm) h_{min}	Minimum **clearance** diameter (mm) d_f	Tightening torque (Nm) T_{inst}	CODE
TAPCON®II LDT	6x40/5*	7,5	6	40	35	3	45	100	9	(1)	055653
	6x60/5			60	55	5	65				055654
	8x70/5	10,5	8	70	65	5	75	120	12	(1)	055655
	8x90/25			90	65	25					055656
	10x65/15*	12,5	10	65	50	15	60	130	14	(1)	055657
	10x90/5			90	85	5	95				055658
	10x100/15			100	85	15					055659
	10x120/35			120	85	35					055661
	10x150/65			150	85	65					055662
	10x170/85			170	85	85					055663
	10x220/135			220	85	135					055664
TAPCON®II DOME	5x60/5*	6,5	5	60	55	5	65	100	8	(1)	055645
	6x60/5	7,5	6	60		5			9		055646
TAPCON®II ROD	6x55 M8	7,5	6	55	55	-	65	100	9	(1)	055666
	6x55 M10			55		-					055667
TAPCON®II STUD	14x120 M16*	16,5	14	120	60	35	70	120	18	(1)	055669
	14x165 M16	16,5	14	165	125	20	135	200	18		055671
	16x190 M18*	18	16	190	80	45	90	130	20		055672
	16x200 M18*	18	16	220	80	75	90	130	20		055673

* Do not belong to ETA

(1) Stop tightening immediately when it meets the part to be fixed

Anchor mechanical properties

Anchor Ø		**6**	**8**	**10**	**14**
Threaded part					
As (mm^2)	Stressed cross-section	19,6	36,3	60,8	128,6
W_{el} (mm^3)	Elastic section modulus	12,3	30,8	66,9	205,8
$M^0_{Rk,s}$ (Nm)	Characteristic bending moment	11,0	26,0	56,0	200,0
M (Nm)	Recommended bending moment	5,5	13,0	28,0	100,0

SPIT TAPCON®II

Zinc coated steel



The loads specified on this page allow judging the product's performances, but cannot be used for the designing.
The data given in the following pages (3/4 and 4/4) have to be applied.

Characteristic loads (N_{Rk}, V_{Rk}) en kN

Characteristic loads are derived from test results in admissible service conditions.

TENSILE

Anchor Ø	6	8	10	14
Non cracked concrete				
h_{nom}	*55*	*65*	*85*	*125*
N_{Rk}	9,0	12,0	28,3	50,5
Cracked concrete				
h_{nom}	*55*	*65*	*85*	*125*
N_{Rk}	3,0	9,0	16,0	36,0

SHEAR

Anchor Ø	6	8	10	14
V_{Rk}	7,0	18,0	34,0	64,0

Design Loads (N_{Rd}, V_{Rd}) for one anchor without edge or spacing influence in kN

$$N_{Rd} = \frac{N_{Rk}^{*}}{\gamma_{Mc}}$$

$$V_{Rd} = \frac{V_{Rk}^{*}}{\gamma_{Ms}}$$

*Derived from test results

TENSILE

Anchor Ø	6	8	10	14
Non cracked concrete				
h_{nom}	*55*	*65*	*85*	*125*
N_{Rd}	6,0	8,0	18,9	33,7
Cracked concrete				
h_{nom}	*55*	*65*	*85*	*125*
N_{Rd}	2,0	6,0	10,7	24,0

$\gamma_{Mc} = 1,5$

SHEAR

Anchor Ø	6	8	10	14
V_{Rd}	4,7	12,0	22,7	42,7

$\gamma_{Ms} = 1,5$

Recommended loads (N_{rec}, V_{rec}) for one anchor without edge or spacing influence in kN

$$N_{Rec} = \frac{N_{Rk}^{*}}{\gamma_{M}.\gamma_{F}}$$

$$V_{Rec} = \frac{V_{Rk}^{*}}{\gamma_{M}.\gamma_{F}}$$

*Derived from test results

TENSILE

Anchor Ø	6	8	10	14
Non cracked concrete				
h_{nom}	*55*	*65*	*85*	*125*
N_{Rec}	4,3	5,7	13,5	24,0
Cracked concrete				
h_{nom}	*55*	*65*	*85*	*125*
N_{Rec}	1,4	4,3	7,6	17,1

$\gamma_{Mc} = 1,5$

SHEAR

Anchor Ø	6	8	10	14
V_{Rec}	3,3	8,6	16,2	30,5

$\gamma_{Ms} = 1,5$

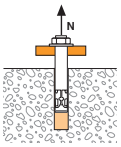
SPIT TAPCON®II

Zinc coated steel



SPIT CC - Method (values issued from ETA)

TENSILE in kN

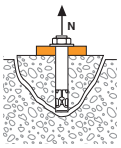


Pull-out resistance

$$N_{Rd,p} = N^{O}_{Rd,p} . f_b$$

$N^0_{Rd,p}$ Anchor Ø	Design pull-out resistance 6	8	10	14
Non cracked concrete				
h_{nom}	*55*	*65*	*85*	*125*
$N^0_{Rd,p}$ (C20/25)	6,0	8,0	-	-
Cracked concrete				
h_{nom}	*55*	*65*	*85*	*125*
$N^0_{Rd,p}$ (C20/25)	2,0	6,0	10,7	-

$\gamma_{Mc} = 1,5$

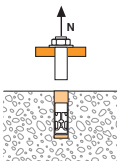


Concrete cone resistance

$$N_{Rd,c} = N^{O}_{Rd,c} . f_b . \Psi_s . \Psi_{c,N}$$

$N^0_{Rd,c}$ Anchor Ø	Design cone resistance 6	8	10	14
Non cracked concrete				
h_{nom}	*55*	*65*	*85*	*125*
$N^0_{Rd,c}$ (C20/25)	9,8	12,3	18,9	33,7
Cracked concrete				
h_{nom}	*55*	*65*	*85*	*125*
$N^0_{Rd,c}$ (C20/25)	7,0	8,7	13,5	24,0

$\gamma_{Mc} = 1,5$

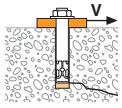


Steel resistance

$N_{Rd,s}$ Anchor Ø	Steel design tensile resistance 6	8	10	14
$N_{Rd,s}$	9,8	17,9	30,0	64,3

$\gamma_{Mc} = 1,4$

SHEAR in kN

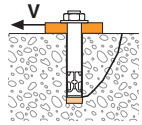


Concrete edge resistance

$$V_{Rd,c} = V^{O}_{Rd,c} . f_b . f_{\beta,V} . \Psi_{S-C,V}$$

$V^0_{Rd,c}$ Anchor Ø	Design concrete edge resistance at minimum edge distance (C_{min}) 6	8	10	14
Non cracked concrete				
h_{nom}	*55*	*65*	*85*	*125*
C_{min}	40	50	70	100
S_{min}	40	50	70	100
$V^0_{Rd,c}$ (C20/25)	1,9	3,0	5,7	11,6
Cracked concrete				
h_{nom}	*55*	*65*	*85*	*125*
C_{min}	40	50	70	100
S_{min}	40	50	70	100
$V^0_{Rd,c}$ (C20/25)	1,4	2,2	4,1	8,3

$\gamma_{Mc} = 1,5$

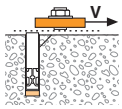


Pryout failure

$$V_{Rd,cp} = V^{0}_{Rd,cp} . f_b . \Psi_s . \Psi_{c,N}$$

$V^0_{Rd,cp}$ Anchor Ø	Design pryout failure 6	8	10	14
Non cracked concrete				
h_{nom}	*55*	*65*	*85*	*125*
$V^0_{Rd,cp}$ (C20/25)	9,8	24,5	37,8	67,3
Cracked concrete				
h_{nom}	*55*	*65*	*85*	*125*
$V^0_{Rd,cp}$ (C20/25)	7,0	17,5	26,9	48,0

$\gamma_{Mcp} = 1,5$



Steel resistance

$V_{Rd,s}$ Anchor Ø	Steel design tensile resistance 6	8	10	14
Cracked and non cracked concrete				
$V_{Rd,s}$	4,7	12,0	22,7	42,7

$\gamma_{Ms} = 1,5$

$$N_{Rd} = \min(N_{Rd,p} ; N_{Rd,c} ; N_{Rd,s})$$

$$\beta_N = N_{Sd} / N_{Rd} \leq 1$$

$$V_{Rd} = \min(V_{Rd,c} ; V_{Rd,s})$$

$$\beta_V = V_{Sd} / V_{Rd} \leq 1$$

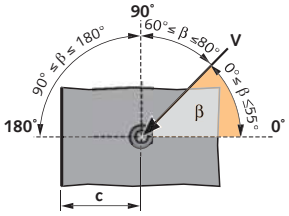
$$\beta_N + \beta_V \leq 1,2$$

f_B INFLUENCE OF CONCRETE

Concrete class	f_B	Concrete class	f_B
C25/30	1,1	C40/50	1,41
C30/37	1,22	C45/55	1,48
C35/45	1,34	C50/60	1,55

$f_{\beta,V}$ INFLUENCE OF SHEAR LOADING DIRECTION

Angle β [°]	$f_{\beta,V}$
0 to 55	1
60	1,1
70	1,2
80	1,5
90 to 180	2



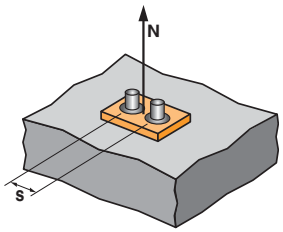
SPIT TAPCON®II

Zinc coated steel



SPIT CC - Method (values issued from ETA)

Ψ_s INFLUENCE OF SPACING FOR CONCRETE CONE RESISTANCE IN TENSILE LOAD

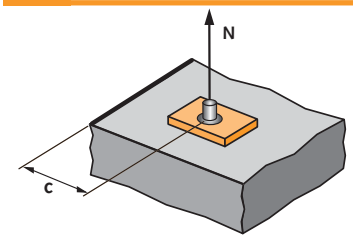


$$\Psi_S = 0{,}5 + \frac{s}{6.h_{ef}}$$

S_{min} < S < $S_{cr,N}$
$S_{cr,N}$ = 3.h_{ef}
Ψ_S must be used for each spacing influenced the anchors group.

SPACING S	Factor Ψ_s Cracked and non cracked concrete			
Anchor Ø	**6**	**8**	**10**	**14**
40	0,65			
50	0,69	0,66		
70	0,77	0,73	0,67	
100	0,88	0,83	0,75	0,67
135	1,00	0,94	0,83	0,73
155		1,00	0,88	0,76
205			1,00	0,84
250				0,92
300				1,00

$\Psi_{c,N}$ INFLUENCE OF EDGE FOR CONCRETE CONE RESISTANCE IN TENSILE LOAD

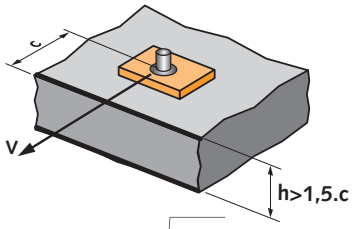


$$\Psi_{c,N} = 0{,}48 + 0{,}27.\frac{c}{h_{ef}}$$

C_{min} < C < $C_{cr,N}$
$C_{cr,N}$ = 1,5.h_{ef}
$\Psi_{c,N}$ must be used for each distance influenced the anchors group.

EDGE C	Factor $\Psi_{c,N}$ Cracked and non cracked concrete			
Anchor Ø	**6**	**8**	**10**	**14**
40	0,71			
50	0,82	0,74		
66	1,00	0,89	0,74	
70		0,93	0,76	
77		1,00	0,81	
100			1,00	0,75
125				0,87
150				1,00

$\Psi_{s\text{-}c,V}$ INFLUENCE OF SPACING AND EDGE DISTANCE FOR CONCRETE EDGE RESISTANCE IN SHEAR LOAD

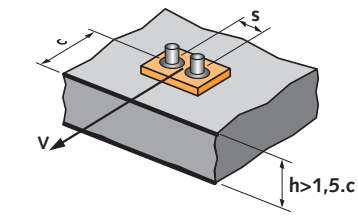


$$\Psi_{s-c,V} = \frac{c}{c_{min}} \cdot \sqrt{\frac{c}{c_{min}}}$$

For single anchor fastening

Coefficient $\Psi_{s\text{-}c,V}$ Cracked and non cracked concrete

$\frac{C}{C_{min}}$	1,0	1,2	1,4	1,6	1,8	2,0	2,2	2,4	2,6	2,8	3,0	3,2
$\Psi_{s\text{-}c,V}$	1,00	1,31	1,66	2,02	2,41	2,83	3,26	3,72	4,19	4,69	5,20	5,72

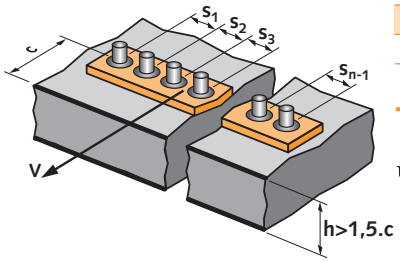


$$\Psi_{s-c,V} = \frac{3.c + s}{6.c_{min}} \cdot \sqrt{\frac{c}{c_{min}}}$$

For 2 anchors fastening

Coefficient $\Psi_{s\text{-}c,V}$ Cracked and non cracked concrete

$\frac{s}{C_{min}}$ \ $\frac{C}{C_{min}}$	1,0	1,2	1,4	1,6	1,8	2,0	2,2	2,4	2,6	2,8	3,0	3,2
1,0	0,67	0,84	1,03	1,22	1,43	1,65	1,88	2,12	2,36	2,62	2,89	3,16
1,5	0,75	0,93	1,12	1,33	1,54	1,77	2,00	2,25	2,50	2,76	3,03	3,31
2,0	0,83	1,02	1,22	1,43	1,65	1,89	2,12	2,38	2,63	2,90	3,18	3,46
2,5	0,92	1,11	1,32	1,54	1,77	2,00	2,25	2,50	2,77	3,04	3,32	3,61
3,0	1,00	1,20	1,42	1,64	1,88	2,12	2,37	2,63	2,90	3,18	3,46	3,76
3,5		1,30	1,52	1,75	1,99	2,24	2,50	2,76	3,04	3,32	3,61	3,91
4,0			1,62	1,86	2,10	2,36	2,62	2,89	3,17	3,46	3,75	4,05
4,5				1,96	2,21	2,47	2,74	3,02	3,31	3,60	3,90	4,20
5,0					2,33	2,59	2,87	3,15	3,44	3,74	4,04	4,35
5,5						2,71	2,99	3,28	3,71	4,02	4,33	4,65
6,0						2,83	3,11	3,41	3,71	4,02	4,33	4,65



For other case of fastenings

$$\Psi_{s-c,V} = \frac{3.c + s_1 + s_2 + s_3 + \ldots + s_{n-1}}{3.n.c_{min}} \cdot \sqrt{\frac{c}{c_{min}}}$$

SPIT TAPCON®III

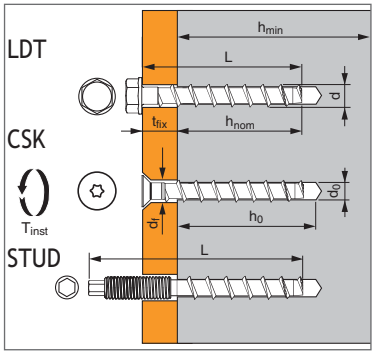
Stainless steel



ETA
European Technical Approval

ETA Option 1
n° 11/0073

Concrete screw anchor



Technical data

SPIT TAPCON III A4		Anchor diameter (mm) d	Drilling diameter (mm) d_o	Total anchor length (mm) L	Minimum embedment depth (mm) $h_{nom,min}$	Maximum thickness part to be fixed (mm) t_{fix}	Hole depth (mm) h_o	Minimum thickness base material (mm) h_{min}	Minimum clearance diameter (mm) d_f	Tightening torque (Nm) T_{inst}	CODE
CSK	8x80/15	10,5	8	80	65	15	75	120	12	(1)	055674
LDT	8x80/15	10,5	8	80	65	15	75	120	12	(1)	055676
	10x100/15	12,5	10	100	85	15	95	130	14		055677
STUD	10x140 M12	12,5	10	140	85	30	95	130	14	(1)	055678
	10x160 M12	12,5	10	160	85	50	95	130	14		055679

(1) Stop tightening immediately when it meets the part to be fixed

APPLICATION

- Channel, cable tray
- Brackets
- E-Clips, cowhorn
- TRH clip, rod hanging
- Trunking
- Push-pull bars
- Formwork / shutterings

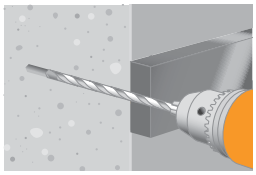
MATERIAL

- **Bolt:** Min. zinc coated steel 5 µm ; min. tensile strength: 1000 N/mm²

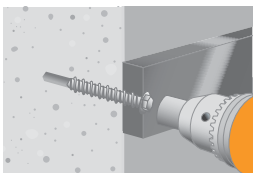
Anchor mechanical properties

Anchor Ø		8	10
Threaded part			
As (mm²)	Stressed cross-section	36,3	60,8
W_{el} (mm³)	Elastic section modulus	30,8	66,9
$M^0_{Rk,s}$ (Nm)	Characteristic bending moment	29,0	64,0
M (Nm)	Recommended bending moment	14,5	32,0

INSTALLATION



DRILL



SCREW

SPIT TAPCON®III

Stainless steel



The loads specified on this page allow judging the product's performances, but cannot be used for the designing.
The data given in the following pages (3/4 and 4/4) have to be applied.

Characteristic loads (N_{Rk}, V_{Rk}) en kN

Characteristic loads are derived from test results in admissible service conditions.

TENSILE

Anchor Ø	8	10
Non cracked concrete		
h_{nom}	*65*	*85*
N_{Rk}	12,0	28,3
Cracked concrete		
h_{nom}	*65*	*85*
N_{Rk}	9,0	16,0

SHEAR

Anchor Ø	8	10
V_{Rk}	21,0	40,0

Design Loads (N_{Rd}, V_{Rd}) for one anchor without edge or spacing influence in kN

$$N_{Rd} = \frac{N_{Rk}^{*}}{\gamma_{Mc}}$$

$$V_{Rd} = \frac{V_{Rk}^{*}}{\gamma_{Ms}}$$

*Derived from test results

TENSILE

Anchor Ø	8	10
Non cracked concrete		
h_{nom}	*65*	*85*
N_{Rd}	8,0	18,9
Cracked concrete		
h_{nom}	*65*	*85*
N_{Rd}	6,0	10,7

γ_{Mc} = 1,5

SHEAR

Anchor Ø	8	10
V_{Rd}	14,0	26,7

γ_{Ms} = 1,5

Recommended loads (N_{rec}, V_{rec}) for one anchor without edge or spacing influence in kN

$$N_{Rec} = \frac{N_{Rk}^{*}}{\gamma_{M}.\gamma_{F}}$$

$$V_{Rec} = \frac{V_{Rk}^{*}}{\gamma_{M}.\gamma_{F}}$$

*Derived from test results

TENSILE

Anchor Ø	8	10
Non cracked concrete		
h_{nom}	*65*	*85*
N_{Rec}	5,7	13,5
Cracked concrete		
h_{nom}	*65*	*85*
N_{Rec}	4,3	7,6

γ_{Mc} = 1,5

SHEAR

Anchor Ø	8	10
V_{Rec}	10,0	19,0

γ_{Ms} = 1,5

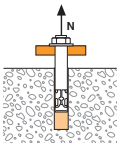
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TENSILE in kN

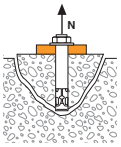


Pull-out resistance

$$N_{Rd,p} = N^{O}_{Rd,p} . f_b$$

$N^0_{Rd,p}$ Anchor Ø	Design pull-out resistance 8	10
Non cracked concrete		
h_{nom}	*65*	*85*
$N^0_{Rd,p}$ (C20/25)	8,0	-
Cracked concrete		
h_{nom}	*65*	*85*
$N^0_{Rd,p}$ (C20/25)	6,0	10,7

$\gamma_{Mc} = 1,5$

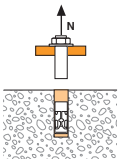


Concrete cone resistance

$$N_{Rd,c} = N^{O}_{Rd,c} . f_b . \Psi_s . \Psi_{c,N}$$

$N^0_{Rd,c}$ Anchor Ø	Design cone resistance 8	10
Non cracked concrete		
h_{nom}	*65*	*85*
$N^0_{Rd,c}$ (C20/25)	12,3	18,9
Cracked concrete		
h_{nom}	*65*	*85*
$N^0_{Rd,c}$ (C20/25)	8,7	13,5

$\gamma_{Mc} = 1,5$

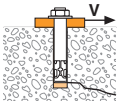


Steel resistance

$N_{Rd,s}$ Anchor Ø	Steel design tensile resistance 8	10
$N_{Rd,s}$	20,7	34,3

$\gamma_{Ms} = 1,4$

SHEAR in kN

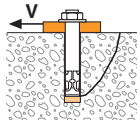


Concrete edge resistance

$$V_{Rd,c} = V^{O}_{Rd,c} . f_b . f_{\beta,V} . \Psi_{S-C,V}$$

$V^0_{Rd,c}$ Anchor Ø	Design concrete edge resistance at minimum edge distance (C_{min}) 8	10
Non cracked concrete		
h_{nom}	*65*	*85*
C_{min}	50	70
S_{min}	50	70
$V^0_{Rd,c}$ (C20/25)	3,0	5,7
Cracked concrete		
h_{nom}	*65*	*85*
C_{min}	50	70
S_{min}	50	70
$V^0_{Rd,c}$ (C20/25)	2,2	4,1

$\gamma_{Mc} = 1,5$

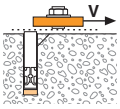


Pryout failure

$$V_{Rd,cp} = V^{0}_{Rd,cp} . f_b . \Psi_s . \Psi_{c,N}$$

$V^0_{Rd,cp}$ Anchor Ø	Design pryout failure 8	10
Non cracked concrete		
h_{nom}	*65*	*85*
$V^0_{Rd,cp}$ (C20/25)	24,5	37,8
Cracked concrete		
h_{nom}	*65*	*85*
$V^0_{Rd,cp}$ (C20/25)	17,5	26,9

$\gamma_{Mcp} = 1,5$



Steel resistance

$V_{Rd,s}$ Anchor Ø	Steel design tensile resistance 8	10
Cracked and non cracked concrete		
$V_{Rd,s}$	14,0	26,7

$\gamma_{Ms} = 1,5$

$$N_{Rd} = \min(N_{Rd,p} ; N_{Rd,c} ; N_{Rd,s})$$

$$\beta_N = N_{Sd} / N_{Rd} \leq 1$$

$$V_{Rd} = \min(V_{Rd,c} ; V_{Rd,s})$$

$$\beta_V = V_{Sd} / V_{Rd} \leq 1$$

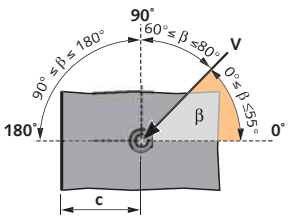
$$\beta_N + \beta_V \leq 1,2$$

f_B INFLUENCE OF CONCRETE

Concrete class	f_B	Concrete class	f_B
C25/30	1,1	C40/50	1,41
C30/37	1,22	C45/55	1,48
C35/45	1,34	C50/60	1,55

$f_{\beta,V}$ INFLUENCE OF SHEAR LOADING DIRECTION

Angle β [°]	$f_{\beta,V}$
0 to 55	1
60	1,1
70	1,2
80	1,5
90 to 180	2



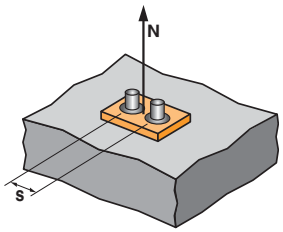
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Ψ_s INFLUENCE OF SPACING FOR CONCRETE CONE RESISTANCE IN TENSILE LOAD

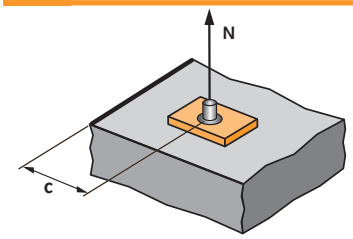


$$\Psi_S = 0{,}5 + \frac{s}{6.h_{ef}}$$

S_{min} < S < $S_{cr,N}$
$S_{cr,N}$ = 3.h_{ef}
Ψ_S must be used for each spacing influenced the anchors group.

SPACING S	Factor Ψ_s Cracked and non cracked concrete	
Anchor Ø	**8**	**10**
50	0,66	
70	0,73	0,67
100	0,83	0,75
135	0,94	0,83
155	1,00	0,88
205		1,00

$\Psi_{c,N}$ INFLUENCE OF EDGE FOR CONCRETE CONE RESISTANCE IN TENSILE LOAD

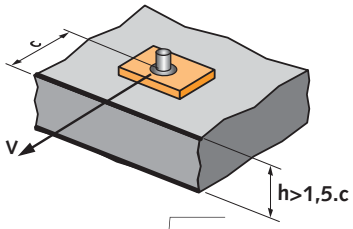


$$\Psi_{c,N} = 0{,}48 + 0{,}27.\frac{c}{h_{ef}}$$

C_{min} < C < $C_{cr,N}$
$C_{cr,N}$ = 1,5.h_{ef}
$\Psi_{c,N}$ must be used for each distance influenced the anchors group.

EDGE C	Factor $\Psi_{c,N}$ Cracked and non cracked concrete	
Anchor Ø	**8**	**10**
50	0,74	
66	0,89	0,74
70	0,93	0,76
77	1,00	0,81
100		1,00

$\Psi_{s-c,V}$ INFLUENCE OF SPACING AND EDGE DISTANCE FOR CONCRETE EDGE RESISTANCE IN SHEAR LOAD

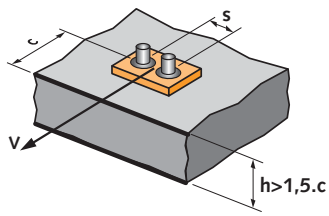


$$\Psi_{s-c,V} = \frac{c}{c_{min}} \cdot \sqrt{\frac{c}{c_{min}}}$$

For single anchor fastening

Factor $\Psi_{s-c,V}$ Cracked and non cracked concrete

$\frac{C}{C_{min}}$	1,0	1,2	1,4	1,6	1,8	2,0	2,2	2,4	2,6	2,8	3,0	3,2
$\Psi_{s-c,V}$	1,00	1,31	1,66	2,02	2,41	2,83	3,26	3,72	4,19	4,69	5,20	5,72

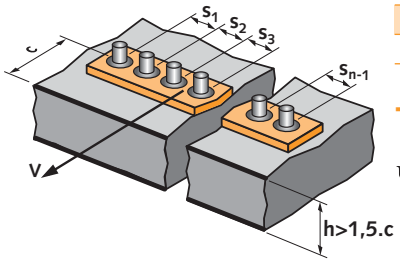


$$\Psi_{s-c,V} = \frac{3.c + s}{6.c_{min}} \cdot \sqrt{\frac{c}{c_{min}}}$$

For 2 anchors fastening

Factor $\Psi_{s-c,V}$ Cracked and non cracked concrete

$\frac{s}{C_{min}}$ \ $\frac{C}{C_{min}}$	1,0	1,2	1,4	1,6	1,8	2,0	2,2	2,4	2,6	2,8	3,0	3,2
1,0	0,67	0,84	1,03	1,22	1,43	1,65	1,88	2,12	2,36	2,62	2,89	3,16
1,5	0,75	0,93	1,12	1,33	1,54	1,77	2,00	2,25	2,50	2,76	3,03	3,31
2,0	0,83	1,02	1,22	1,43	1,65	1,89	2,12	2,38	2,63	2,90	3,18	3,46
2,5	0,92	1,11	1,32	1,54	1,77	2,00	2,25	2,50	2,77	3,04	3,32	3,61
3,0	1,00	1,20	1,42	1,64	1,88	2,12	2,37	2,63	2,90	3,18	3,46	3,76
3,5		1,30	1,52	1,75	1,99	2,24	2,50	2,76	3,04	3,32	3,61	3,91
4,0			1,62	1,86	2,10	2,36	2,62	2,89	3,17	3,46	3,75	4,05
4,5				1,96	2,21	2,47	2,74	3,02	3,31	3,60	3,90	4,20
5,0					2,33	2,59	2,87	3,15	3,44	3,74	4,04	4,35
5,5						2,71	2,99	3,28	3,71	4,02	4,33	4,65
6,0						2,83	3,11	3,41	3,71	4,02	4,33	4,65



For other case of fastenings

$$\Psi_{s-c,V} = \frac{3.c + s_1 + s_2 + s_3 + \ldots + s_{n-1}}{3.n.c_{min}} \cdot \sqrt{\frac{c}{c_{min}}}$$