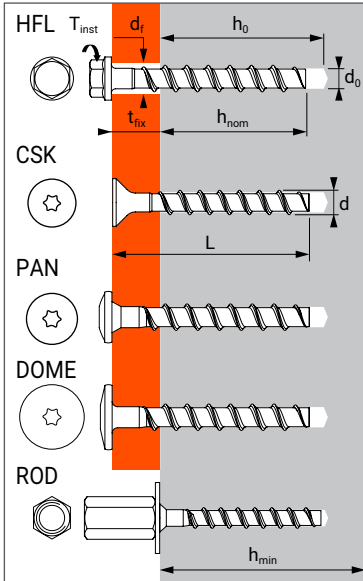




Concrete screw anchor, for use in cracked and non-cracked concrete, and hollow concrete slab



## TECHNICAL DATA

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

## CHARACTERISTICS



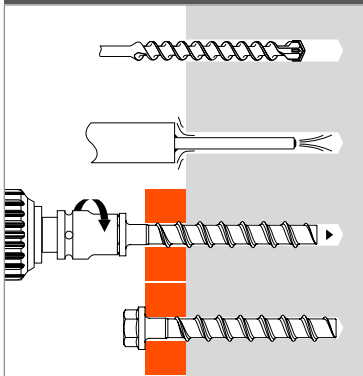
## ANCHOR MECHANICAL PROPERTIES

| SIZE                           |  | $\emptyset 5$ | $\emptyset 6$ |
|--------------------------------|--|---------------|---------------|
| As                             | [mm <sup>2</sup> ] Stressed cross-section  | 33,0          | 44,2          |
| W <sub>el</sub>                | [mm <sup>3</sup> ] Elastic section modulus | 27,0          | 41,4          |
| M <sup>0</sup> <sub>Rk,s</sub> | [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, CHARACTERISTIC & 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 | $C_{cr} \geq$ | [mm] | 52,5 | 150   | 52,5 | 82,5 |
|  | $S_{cr} \geq$ | [mm] | 105  | 200   | 105  | 165  |
| Minimum distances for cracked and non-cracked concrete             | $C_{min}$     | [mm] | 35   | 150   | 35   | 40   |
|  | $S \geq$      | [mm] |      |       |      |      |
|  | $S_{min}$     | [mm] | 35   | 200   | 35   | 40   |
|  | $C \geq$      | [mm] |      |       |      |      |
| Minimum distances for hollow concrete slab                         | $C_{min}$     | [mm] | -    | -     | 100  | 100  |
|  | $S \geq$      | [mm] |      |       |      |      |
|  | $S_{min}$     | [mm] | -    | -     | 100  | 100  |
|  | $C \geq$      | [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] | -  | -     | $\geq 25$ | $\geq 35$ |
| $N_{Rk,p}$              | [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] | <u>4,4</u> | <u>0,9</u> | <u>7,0</u> | <u>7,0</u> |

#### HOLLOW CONCRETE SLAB

| DIMENSIONS              |      | Ø5 | Ø6X30 | Ø6        | Ø6        |
|-------------------------|------|----|-------|-----------|-----------|
| Bottom flange thickness | [mm] | -  | -     | $\geq 25$ | $\geq 35$ |
| $V_{Rk,p}$              | [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  $\geq S_{cr}$  and edge distance  $\geq C_{cr}$ .

### 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 |

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

#### HOLLOW CONCRETE SLAB

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

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

### SHEAR

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

| SIZE      |      | Ø5         | Ø6X30      | Ø6         | Ø6         |
|-----------|------|------------|------------|------------|------------|
| $h_{nom}$ | [mm] | 35         | 25         | 35         | 55         |
| $V_{Rec}$ | [kN] | <u>2,5</u> | <u>0,4</u> | <u>4,0</u> | <u>4,0</u> |

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

#### HOLLOW CONCRETE SLAB

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

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

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



Design resistances for static 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 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] | <u>3,5</u> | <u>0,6</u> | <u>5,6</u> | <u>5,6</u> |

$V_{Rd,s} = V_{Rk,s} / \gamma_{Ms,V}$   
 $\gamma_{Ms,V} = 1,25; \text{Ø6X30: } \gamma_{Ms,V} = 1,5$

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

| TENSILE                 |      |    |       |           |           |
|-------------------------|------|----|-------|-----------|-----------|
| SIZE                    |      | Ø5 | Ø6X30 | Ø6        | Ø6        |
| Bottom flange thickness | [mm] | -  | -     | $\geq 25$ | $\geq 35$ |
| $N_{Rd}$                | [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] | -  | -     | $\geq 25$ | $\geq 35$ |
| $V_{Rd,s}$              | [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   |
| $N_{Rd,fi}$ | [kN] |    |       |      |      |
|             | R30  | -  | 0,27  | 0,75 | 0,90 |
|             | R60  | -  | 0,27  | 0,75 | 0,80 |
|             | R90  | -  | 0,22  | 0,60 | 0,60 |
|             | R120 | -  | 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   |
| $V_{Rd,fi}$ | [kN] |    |       |      |      |
|             | R30  | -  | 0,27  | 0,75 | 0,90 |
|             | R60  | -  | 0,27  | 0,75 | 0,80 |
|             | R90  | -  | 0,22  | 0,60 | 0,60 |
|             | R120 | -  | 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