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## European Technical Assessment

**ETA-22/0413**  
of 25. 1. 2024

*English version prepared by ZAG*

### General Part

**Technical Assessment Body issuing the  
European Technical Assessment**

**ZAG**

**Trade name of the construction product**

**Sormat Concrete Screw Anchor  
S-CSA A4 / EJOT Concrete Screw  
Anchor JC6**

**Product family to which the construction  
product belongs**

**33: Concrete screw of sizes 6, 8 and 10  
for use in cracked and non-cracked  
concrete**

**Manufacturer**

**EJOT SORMAT OY  
Vähäkorventie 10  
21250 Masku, Finland  
[www.ejot.fi](http://www.ejot.fi)**

**Manufacturing plant**

**EJOT Production Plants**

**This European Technical Assessment  
contains**

13 pages including 3 annexes, which form  
an integral part of the document

**This European Technical Assessment is  
issued in accordance with Regulation (EU)  
No 305/2011, on the basis of**

EAD 330232-01-0601,  
edition December 2019

**This Assessment replaces**

ETA-22/0413 issued on 23.3.2023

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## **Specific part**

### **1 Technical description of the product**

The Sormat Concrete Screw Anchor S-CSA A4 / EJOT Concrete Screw Anchor JC6 is a concrete screw of sizes 6, 8 and 10 made of stainless steel. The fastener is screwed into a predrilled cylindrical hole. The special thread of the anchor cuts an internal thread into the member while setting. The anchorage is characterised by mechanical interlock in the special thread.

For the installed anchor see Figure given in Annex A (1/2).

### **2 Specification of the intended use(s) in accordance with the applicable European Assessment Document (hereinafter EAD)**

The performances given in Chapter 3 are only valid if the anchor is used in compliance with the specifications and conditions given in Annex B.

The provisions made in this European Technical Assessment are based on an assumed working life of the anchor of 50 years. The indications given on the working life cannot be interpreted as a guarantee given by the manufacturer, but are to be regarded only as a means for choosing the right products in relation to the expected economically reasonable working life of the works.

### **3 Performance of the product and references to the methods used for its assessment**

#### **3.1 Mechanical resistance and stability (BWR 1)**

The basic work requirements for mechanical resistance and stability are listed in Annexes C (1/5), C (2/5) and C (5/5).

#### **3.2 Safety in case of fire (BWR 2)**

The basic work requirements for safety in case of fire are listed in Annexes C (3/5) and C (4/5).

Regarding to reaction to fire product is specified in class A1 according to EN 13501-1.

#### **3.3 General aspects relating to fitness for use**

Durability and serviceability are only ensured if specifications of intended use according to Annex B (1/3) are kept.

**4 Assessment and verification of constancy of performance (hereinafter AVCP) system applied, with reference to its legal base**

According to the decision 96/582/EC of the European Commission<sup>1</sup> the system of assessment and verification of constancy of performance (see Annex V to regulation (EU) No 305/2011) 1 applies.

**5 Technical details necessary for the implementation of the AVCP system, as provided for on the applicable EAD**

Technical details necessary for the implementation of the AVCP system are laid down in chapter 3 of EAD 330232-01-0601.

Issued in Ljubljana on 25. 1. 2024

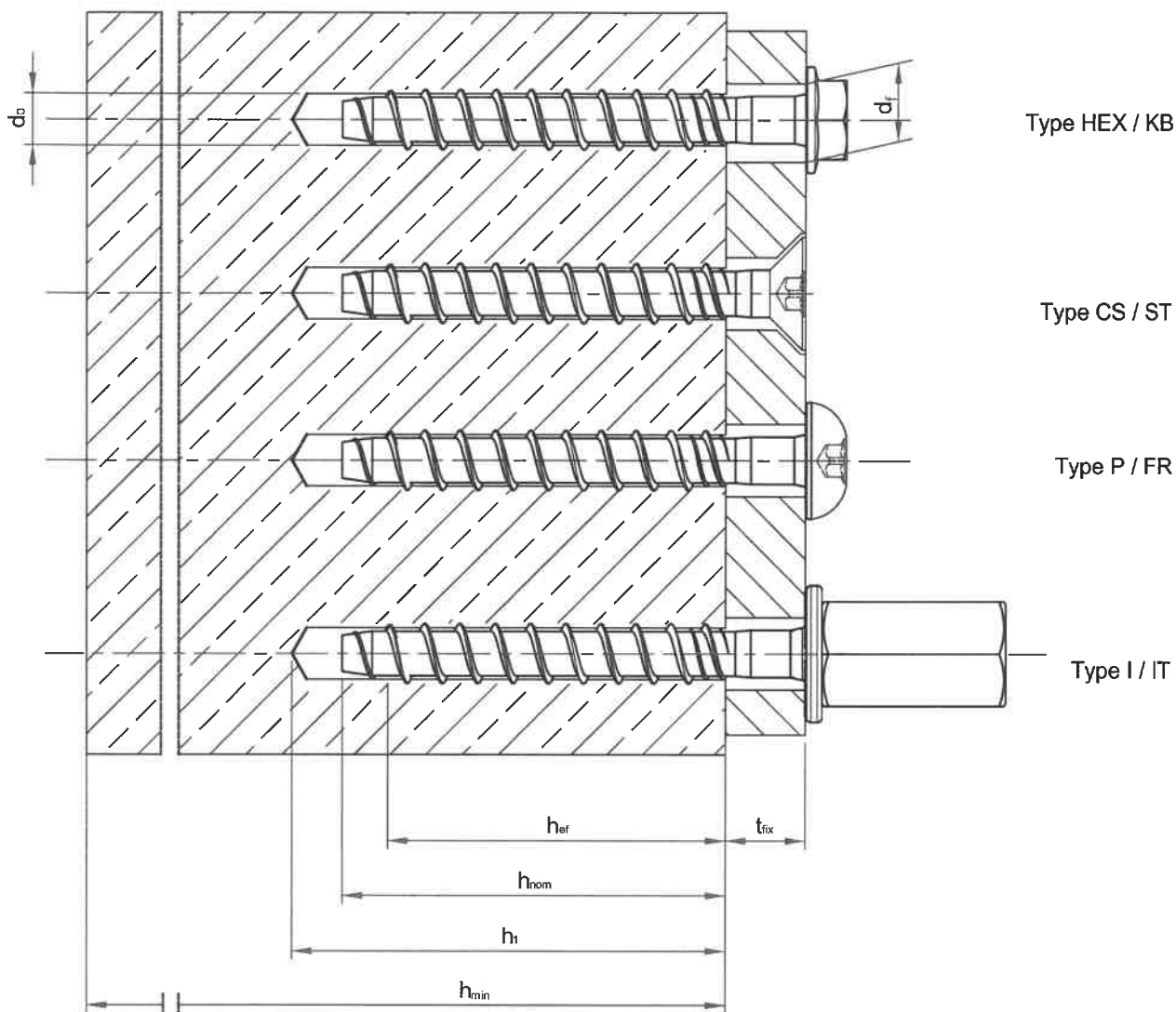
Signed by:

Franc Capuder, M.Sc.  
Head of Service of TAB

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<sup>1</sup> Official Journal of the European Communities L 254 of 8.10.1996

**Sormat Concrete Screw Anchor S-CSA A4 /  
EJOT Concrete Screw Anchor JC6  
after installation**



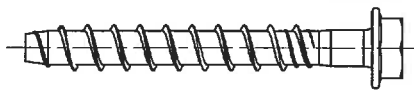
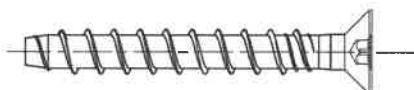
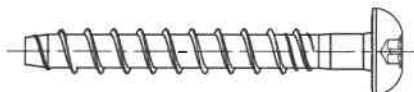
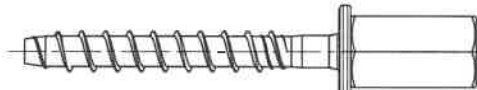
- $d_0$  = Drill hole diameter
- $h_{nom}$  = Nominal embedment depth
- $h_1$  = Drill hole depth
- $h_{min}$  = Minimum concrete member thickness
- $t_{fix}$  = Fixture thickness
- $d_f$  = Clearance hole diameter in fixture

**Sormat Concrete Screw Anchor S-CSA A4 /  
EJOT Concrete Screw Anchor JC6**

**Product description**  
Installation condition

**Annex A (1/2)**

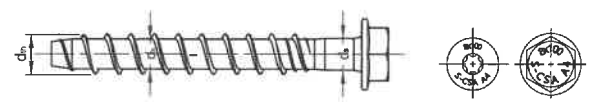
**Table A1: Materials and Types**

| Material  |                       |  |   |
|---|-----------------------|--|---|
| Tip: hardened steel<br>Shaft and head: stainless steel (A4 grade) |                       |  |   |
| Part  | Designation           | Description  | Design  |
| 1   | S-CSA A4 HEX / JC6 KB | Hexagonal head version with or without combined washer |   |
| 2   | S-CSA A4 CS / JC6 ST  | Countersunk head version with T-drive                  |   |
| 3   | S-CSA A4 P / JC6 FR   | Pan head version with T-drive                          |   |
| 4   | S-CSA A4 I / JC6 IT   | Internal thread version with hexagonal drive           |  |

**Table A2: Anchor dimensions and head marking**

| S-CSA A4 / JC6        |                          |       |       |       |  |
|-----------------------|--------------------------|-------|-------|-------|--|
| Anchor size           |                          | 6     | 8     | 10    |  |
| Nominal diameter      | $d_{nom}$ [mm]           | 6     | 8     | 10    |  |
| Thread outer diameter | $d_{th}$ [mm]            | 7,45  | 9,90  | 11,9  |  |
| Core diameter         | $d_k$ [mm]               | 5,55  | 7,35  | 9,30  |  |
| Shaft diameter        | $d_s$ [mm]               | 5,90  | 7,85  | 9,67  |  |
| Stressed section      | $A_s$ [mm <sup>2</sup> ] | 24,19 | 42,43 | 67,93 |  |

**Marking:** Identifying mark: S  
Anchor identity: CSA A4  
Nominal diameter:  $d_{nom}$   
Screw length: L  
**Example: S-CSA A4 8x100 / JC6 8x100**



**Sormat Concrete Screw Anchor S-CSA A4 /  
EJOT Concrete Screw Anchor JC6**

**Product description**  
Materials, types and dimensions

**Annex A (2/2)**

## Specifications of intended use

### Anchorage subjected to:

- Static and quasi static load,
- fire exposure.

### Base materials:

- Cracked and non-cracked concrete.
- Reinforced and unreinforced normal weight concrete of strength class C20/25 at minimum and C50/60 at maximum according to EN 206:2013+A1:2016.

### Use conditions (Environmental conditions):

- The anchor may be used in concrete subject to dry internal conditions and also in concrete subject to external atmospheric exposure (including industrial and marine environment), or exposure in permanently damp internal conditions, if no particular aggressive conditions exist.

### Design:

- Anchorages are designed under the responsibility of an engineer experienced in anchorages and concrete work.
- Anchorages under static and quasi-static actions are designed in accordance with EN 1992-4:2018.
- For application with resistance under fire exposure the anchorages are designed in accordance with the method given in EN 1992-4:2018.
- Verifiable calculation notes and drawings are prepared taking into account of the load to be anchored. The position of the anchor is indicated on the design drawings (e.g. position of the anchor relative to reinforcement or to supports, etc.).

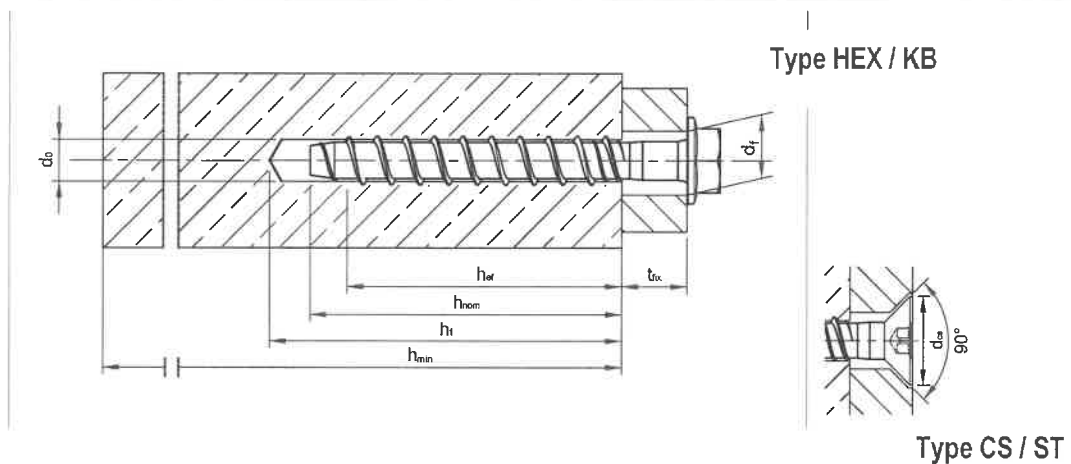
### Installation:

- Anchor installation carried out by appropriately qualified personnel and under the supervision of the person responsible for technical matters on the site.
- Use of the anchor only as supplied by the manufacturer without exchanging the components of an anchor.
- Anchor installation in accordance with the manufacturer's specifications and drawings using the appropriate tools.
- Checks before placing the anchor to ensure that the strength class of the concrete in which the anchor is to be placed is in the range given and is not lower than that of the concrete to which the characteristic loads apply for.
- Check of concrete being well compacted, e.g. without significant voids.
- Cleaning of the hole of drilling dust.
- Anchor installation ensuring the specified embedment depth.
- Keeping of the edge distance and spacing to the specified values without minus tolerances.
- Positioning of the drill holes without damaging the reinforcement.
- In case of aborted hole, drilling of new hole at a minimum distance of twice the depth of the aborted hole, or smaller distance provided the aborted drill hole is filled with high strength non-shrinkage mortar. No shear or oblique tension loads are allowed in the direction of a not filled aborted hole.
- Observe the maximum installation torque given in Annex B(2/3).

**Sormat Concrete Screw Anchor S-CSA A4 /  
EJOT Concrete Screw Anchor JC6**

**Intended use  
Specifications**

**Annex B (1/3)**



**Table B1:** Installation data

| Sormat Concrete Screw Anchor<br>S-CSA A4 /<br>EJOT Concrete Screw Anchor<br>JC6 |                         | Anchor size       |      |           |      |           |      |
|---|-------------------------|-------------------|------|-----------|------|-----------|------|
|   |                         | S-CSA A4 /<br>JC6 |      |           |      |           |      |
|   |                         | 6-1               | 6-2  | 8-1       | 8-2  | 10-1      | 10-2 |
| Nominal embedment depth   | $h_{nom}$ [mm]          | 45                | 55   | 50        | 65   | 55        | 85   |
| Drill hole diameter   | $d_0$ [mm]              | 6                 |      | 8         |      | 10        |      |
| Cutting diameter at the upper tolerance limit (maximum diameter bit)            | $d_{cut,max} \leq$ [mm] | 6,4               |      | 8,45      |      | 10,45     |      |
| Depth of drilled hole to deepest point  | $h_1 \geq$ [mm]         | 55                | 65   | 60        | 75   | 65        | 95   |
| Effective anchorage depth   | $h_{ef}$ [mm]           | 34                | 42,5 | 35,8      | 48,5 | 39,1      | 64,6 |
| Diameter of clearance hole in the fixture                                       | $d_f$ [mm]              | $\leq 9$          |      | $\leq 12$ |      | $\leq 14$ |      |
| Maximum installation torque   | $T_{inst} \leq$ [Nm]    | 14                |      | 40        |      | 75        |      |
| Max installation torque for impact screw driver                                 | $T_{SD}$ [Nm]           | 90                |      | 290       |      | 360       |      |

**Table B2:** Minimum thickness of concrete member, spacing and edge distance

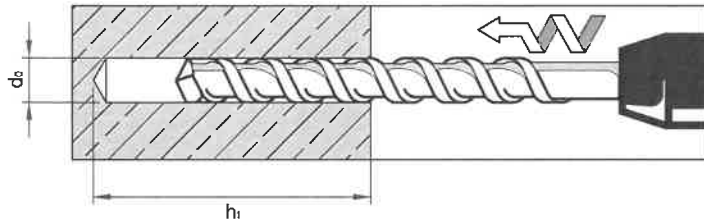
| Sormat Concrete Screw Anchor<br>S-CSA A4 /<br>EJOT Concrete Screw Anchor<br>JC6 |                | Anchor size       |     |     |     |      |      |
|---|----------------|-------------------|-----|-----|-----|------|------|
|   |                | S-CSA A4 /<br>JC6 |     |     |     |      |      |
|   |                | 6-1               | 6-2 | 8-1 | 8-2 | 10-1 | 10-2 |
| Minimum thickness of concrete member  | $h_{min}$ [mm] | 80                | 100 | 100 | 100 | 100  | 130  |
| Minimum spacing   | $s_{min}$ [mm] | 35                | 35  | 35  | 35  | 40   | 40   |
| Minimum edge distance   | $c_{min}$ [mm] | 35                | 35  | 35  | 35  | 40   | 40   |

**Sormat Concrete Screw Anchor S-CSA A4 /  
EJOT Concrete Screw Anchor JC6**

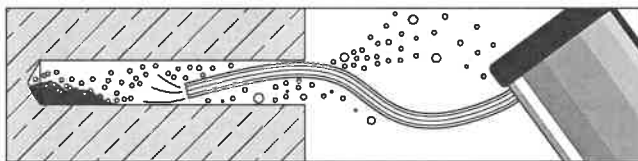
**Intended use**  
Installation data

**Annex B (2/3)**

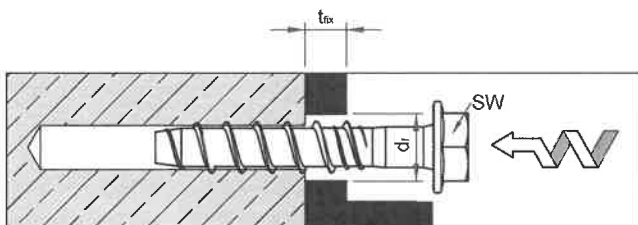
## Installation instructions



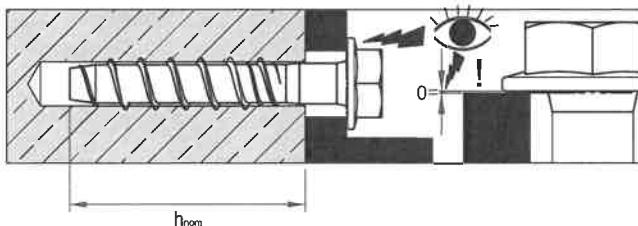
Make a cylindrical hole



Clean the hole



Install the screw anchor by impact screwdriver or torque wrench



Ensure that the screw anchor head fully rests without any gap on the fixture and is not damaged

**Sormat Concrete Screw Anchor S-CSA A4 /  
EJOT Concrete Screw Anchor JC6**

**Intended use**  
Installation instructions

**Annex B (3/3)**



**Table C1:** Characteristic resistances under tension loads in case of static and quasi-static loading for design according to **EN 1992-4:2018**

| Sormat Concrete Screw Anchor S-CSA A4 /<br>EJOT Concrete Screw Anchor JC6 |                     |        | Anchor size       |       |       |       |       |       |
|---|---------------------|--------|-------------------|-------|-------|-------|-------|-------|
|   |                     |        | S-CSA A4 /<br>JC6 |       |       |       |       |       |
|   |                     |        | 6-1               | 6-2   | 8-1   | 8-2   | 10-1  | 10-2  |
| <b>Steel failure</b>  |                     |        |                   |       |       |       |       |       |
| Characteristic resistance   | $N_{Rk,s}$          | [kN]   | 19,4              |       | 33,9  |       | 47,9  |       |
| Partial safety factor   | $\gamma_{Ms}^{1)}$  | [-]    | 1,4               |       |       |       |       |       |
| <b>Pull-out failure</b>   |                     |        |                   |       |       |       |       |       |
| Characteristic resistance in <b>cracked</b> concrete C20/25               | $N_{Rk,p}$          | [kN]   | 2,5               | 3,5   | 3,0   | 8,5   | 2,5   | 9,0   |
| Characteristic resistance in <b>non-cracked</b> concrete C20/25           | $N_{Rk,p}$          | [kN]   | 6,0               | 9,5   | 8,5   | 16,6  | 11,0  | 25,4  |
| Increasing factor for $N_{Rk,p}$  | $\Psi_C$            | C25/30 | 1,118             | 1,080 | 1,090 | 1,104 | 1,065 | 1,067 |
|   |                     | C30/37 | 1,224             | 1,152 | 1,172 | 1,198 | 1,125 | 1,127 |
|   |                     | C35/45 | 1,323             | 1,218 | 1,247 | 1,285 | 1,179 | 1,182 |
|   |                     | C40/50 | 1,414             | 1,280 | 1,316 | 1,366 | 1,230 | 1,234 |
|   |                     | C45/55 | 1,500             | 1,338 | 1,382 | 1,441 | 1,277 | 1,282 |
|   |                     | C50/60 | 1,581             | 1,393 | 1,444 | 1,513 | 1,322 | 1,328 |
| Partial safety factor   | $\gamma_{inst}$     | [-]    | 1,0               |       |       |       |       |       |
|   | $\gamma_{Mp}^{1)}$  | [-]    | 1,5 <sup>2)</sup> |       |       |       |       |       |
| <b>Concrete cone and splitting failure</b>                                |                     |        |                   |       |       |       |       |       |
| Effective anchorage depth   | $h_{ef}$            | [mm]   | 34,0              | 42,5  | 35,8  | 48,5  | 39,1  | 64,6  |
| Factor for cracked concrete   | $k_{cr}$            | [-]    | 7,7               |       |       |       |       |       |
| Factor for non-cracked concrete   | $k_{ucr}$           | [-]    | 11,0              |       |       |       |       |       |
| Spacing   | $s_{cr,N}$          | [mm]   | 102,0             | 127,5 | 107,4 | 145,5 | 117,3 | 193,8 |
| Edge distance   | $c_{cr,N}$          | [mm]   | 51,0              | 63,8  | 53,7  | 72,8  | 58,7  | 96,9  |
| Spacing ( splitting )   | $s_{cr,sp}$         | [mm]   | 136,0             | 127,5 | 121,7 | 165   | 195,5 | 184,5 |
| Edge distance ( splitting )   | $c_{cr,sp}$         | [mm]   | 68,0              | 63,8  | 60,9  | 82,5  | 97,8  | 92,3  |
| Partial safety factor   | $\gamma_{Msp}^{1)}$ | [-]    | 1,5 <sup>2)</sup> |       |       |       |       |       |

<sup>1)</sup> In absence of other national regulations

<sup>2)</sup> The installation safety factor of  $\gamma_{inst} = 1,0$  is included

**Sormat Concrete Screw Anchor S-CSA A4 /  
EJOT Concrete Screw Anchor JC6**

**Performance**  
Characteristic resistance under tension loads

**Annex C(1/5)**

**Table C2:** Characteristic resistances under shear loads in case of static and quasi-static loading for design according to **EN 1992-4:2018**

| Sormat Concrete Screw Anchor S-CSA A4/<br>EJOT Concrete Screw Anchor JC6 |                    |       | Anchor size       |      |      |      |      |      |
|--|--------------------|-------|-------------------|------|------|------|------|------|
|  |                    |       | S-CSA A4 /<br>JC6 |      |      |      |      |      |
|  |                    |       | 6-1               | 6-2  | 8-1  | 8-2  | 10-1 | 10-2 |
| <b>Steel failure without lever arm</b>                                   |                    |       |                   |      |      |      |      |      |
| Characteristic resistance  | $V_{Rk,s}$         | [kN]  | 14,3              |      | 24,3 |      | 29,4 |      |
| Partial safety factor  | $\gamma_{Ms}^{1)}$ | [ - ] | 1,5               |      |      |      |      |      |
| Factor for considering ductility   | $k_7$              | [ - ] | 1,0               |      |      |      |      |      |
| <b>Steel failure with lever arm</b>                                      |                    |       |                   |      |      |      |      |      |
| Characteristic resistance  | $M_{Rk,s}^0$       | [Nm]  | 19,4              |      | 45,6 |      | 75,1 |      |
| Partial safety factor  | $\gamma_{Ms}^{1)}$ | [ - ] | 1,5               |      |      |      |      |      |
| <b>Concrete pryout failure</b>   |                    |       |                   |      |      |      |      |      |
| k-factor   | $k_8$              | [ - ] | 2,5               |      | 2,9  |      | 3,3  |      |
| Partial safety factor  | $\gamma_{Mc}^{1)}$ | [ - ] | 1,5               |      |      |      |      |      |
| <b>Concrete edge failure</b>   |                    |       |                   |      |      |      |      |      |
| Effective length of anchor under shear load                              | $l_f$              | [mm]  | 34,0              | 42,5 | 35,8 | 48,5 | 39,1 | 64,6 |
| Outside diameter of anchor   | $d_{nom}$          | [mm]  | 6                 |      | 8    |      | 10   |      |
| Partial safety factor  | $\gamma_{Mc}^{1)}$ | [ - ] | 1,5               |      |      |      |      |      |

<sup>1)</sup>In absence of other national regulations

**Sormat Concrete Screw Anchor S-CSA A4 /  
EJOT Concrete Screw Anchor JC6**

**Performance**

Characteristic resistance under shear loads

**Annex C(2/5)**

**Table C3:** Characteristic resistances under tension loads in case of fire exposure for design according to **EN 1992-4:2018**

| Sormat Concrete Screw Anchor S-CSA A4/<br>EJOT Concrete Screw Anchor JC6 |               |      | Anchor size   |       |       |       |       |       |
|--|---------------|------|---|-------|-------|-------|-------|-------|
|  |               |      | S-CSA A4 /<br>JC6   |       |       |       |       |       |
|  |               |      | 6-1   | 6-2   | 8-1   | 8-2   | 10-1  | 10-2  |
| <b>Steel failure</b>   |               |      |   |       |       |       |       |       |
| Characteristic resistance<br>$N_{Rk,s,fi}$                               | R30           | [kN] | 0,24  |       | 0,85  |       | 1,70  |       |
|  | R60           | [kN] | 0,22  |       | 0,68  |       | 1,36  |       |
|  | R90           | [kN] | 0,17  |       | 0,51  |       | 1,09  |       |
|  | R120          | [kN] | 0,12  |       | 0,42  |       | 0,95  |       |
| <b>Pull-out failure</b>  |               |      |   |       |       |       |       |       |
| Characteristic resistance<br>$N_{Rk,p,fi}$                               | R30           | [kN] | 0,63  | 0,88  | 0,75  | 2,13  | 2,75  | 5,50  |
|  | R60           | [kN] | 0,63  | 0,88  | 0,75  | 2,13  | 2,75  | 5,50  |
|  | R90           | [kN] | 0,63  | 0,88  | 0,75  | 2,13  | 2,75  | 5,50  |
|  | R120          | [kN] | 0,50  | 0,50  | 0,60  | 1,70  | 2,20  | 4,40  |
| <b>Concrete cone and splitting failure <sup>1)</sup></b>                 |               |      |   |       |       |       |       |       |
| Characteristic resistance<br>$N^0_{Rk,c,fi}$                             | R30           | [kN] | 1,66  | 2,90  | 1,89  | 2,82  | 2,35  | 8,19  |
|  | R60           | [kN] | 1,66  | 2,90  | 1,89  | 2,82  | 2,35  | 8,19  |
|  | R90           | [kN] | 1,66  | 2,90  | 1,89  | 2,82  | 2,35  | 8,19  |
|  | R120          | [kN] | 1,33  | 2,32  | 1,51  | 2,26  | 1,88  | 6,55  |
| Spacing  | $s_{cr,N,fi}$ | [mm] | 102   | 127,5 | 107,4 | 145,5 | 117,3 | 193,8 |
|  | $s_{min}$     | [mm] | 35  | 35    | 35    | 35    | 40    | 40    |
| Edge distance  | $c_{cr,N,fi}$ | [mm] | 51  | 63,8  | 53,7  | 72,8  | 58,7  | 96,9  |
|  | $c_{min}$     | [mm] | Fire attack from one side: $c_{min} = 2 \times h_{ef}$<br>Fire attack from more than one side:<br>$c_{min} \geq 300 \text{ mm and } \geq 2 \times h_{ef}$ |       |       |       |       |       |

<sup>1)</sup> As a rule, splitting failure can be neglected when cracked concrete and reinforcement is assumed. Design under fire exposure is performed according to the design method given in EN 1992-4. Under fire exposure usually cracked concrete is assumed. The design equations are given in EN 1992-4. In the absence of other national regulations the partial safety factor for resistance under fire exposure  $\gamma_{M,fi} = 1,0$  is recommended.

**Sormat Concrete Screw Anchor S-CSA A4 /  
EJOT Concrete Screw Anchor JC6**

**Performance**  
Characteristic tension resistance under fire exposure

**Annex C(3/5)**

**Table C4:** Characteristic resistances under shear loads in case of fire exposure for design according to **EN 1992-4:2018**

| Sormat Concrete Screw Anchor S-CSA A4/<br>EJOT Concrete Screw Anchor JC6  |       |      | Anchor size   |      |      |      |      |       |
|---|-------|------|---|------|------|------|------|-------|
|   |       |      | S-CSA A4 /<br>JC6   |      |      |      |      |       |
|   |       |      | 6-1   | 6-2  | 8-1  | 8-2  | 10-1 | 10-2  |
| <b>Steel failure without lever arm</b>  |       |      |   |      |      |      |      |       |
| Characteristic resistance<br>$V_{Rk,s,fi}$  | R30   | [kN] | 0,24  |      | 0,85 |      | 1,70 |       |
|   | R60   | [kN] | 0,22  |      | 0,68 |      | 1,36 |       |
|   | R90   | [kN] | 0,17  |      | 0,51 |      | 1,09 |       |
|   | R120  | [kN] | 0,12  |      | 0,42 |      | 0,95 |       |
| <b>Steel failure with lever arm</b>   |       |      |   |      |      |      |      |       |
| Characteristic resistance<br>$M^0_{Rk,s,fi}$  | R30   | [Nm] | 0,20  |      | 1,14 |      | 2,66 |       |
|   | R60   | [Nm] | 0,18  |      | 0,91 |      | 2,13 |       |
|   | R90   | [Nm] | 0,14  |      | 0,68 |      | 1,70 |       |
|   | R120  | [Nm] | 0,10  |      | 0,47 |      | 1,49 |       |
| <b>Concrete pryout failure</b>  |       |      |   |      |      |      |      |       |
| k-factor  | $k_8$ | [-]  | 2,51  |      | 2,94 |      | 3,29 |       |
| Characteristic resistance<br>$V_{Rk,cp,fi}$   | R30   | [kN] | 4,17  | 7,28 | 5,56 | 8,29 | 7,73 | 26,95 |
|   | R60   | [kN] | 4,17  | 7,28 | 5,56 | 8,29 | 7,73 | 26,95 |
|   | R90   | [kN] | 4,17  | 7,28 | 5,56 | 8,29 | 7,73 | 26,95 |
|   | R120  | [kN] | 3,34  | 5,82 | 4,44 | 6,64 | 6,19 | 21,55 |
| <b>Concrete edge failure</b>  |       |      |   |      |      |      |      |       |
| The initial value $V^0_{Rk,c,fi}$ of the characteristic resistance in concrete C20/25 to C50/60 under fire exposure may be determined by: |       |      | $V^0_{Rk,c,fi} = 0,25 \times V^0_{Rk,c} \quad (\leq R90) \quad V^0_{Rk,c,fi} = 0,20 \times V^0_{Rk,c} \quad (R120)$   |      |      |      |      |       |
|   |       |      | with $V^0_{Rk,c}$ initial value of the characteristic resistance in cracked concrete C20/25 under normal temperature. |      |      |      |      |       |

Design under fire exposure is performed according to the design method given in EN 1992-4.

Under fire exposure usually cracked concrete is assumed. The design equations are given in EN 1992-4.

EN 1992-4 covers design for fire exposure from one side. For fire attack from more than one side the edge distance must be increased to  $c_{min} \geq 300$  mm and  $\geq 2 \times h_{ef}$ .

In the absence of other national regulations the partial safety factor for resistance under fire exposure  $\gamma_{M,fi} = 1,0$  is recommended.

**Sormat Concrete Screw Anchor S-CSA A4 /  
EJOT Concrete Screw Anchor JC6**

**Performance**

Characteristic shear resistance under fire exposure

**Annex C(4/5)**

**Table C5: Displacements under tension loads for static and quasi-static loading**

| Sormat Concrete Screw Anchor S-CSA A4<br>EJOT Concrete Screw Anchor JC6 |                          |             | Anchor size    |            |            |             |            |             |
|---|--------------------------|-------------|----------------|------------|------------|-------------|------------|-------------|
|   |                          |             | S-CSA A4 / JC6 |            |            |             |            |             |
|   |                          |             | 6-1            | 6-2        | 8-1        | 8-2         | 10-1       | 10-2        |
| Cracked C20/25  | <b>N</b>                 | <b>[kN]</b> | <b>1,2</b>     | <b>1,7</b> | <b>1,4</b> | <b>4,0</b>  | <b>1,2</b> | <b>4,3</b>  |
|   | $\bar{\delta}_{N0}$      | [mm]        | 0,117          | 0,094      | 0,087      | 0,234       | 0,050      | 0,261       |
|   | $\bar{\delta}_{N\infty}$ | [mm]        | 0,253          | 0,386      | 0,898      | 0,687       | 1,575      | 0,842       |
| Cracked C50/60  | <b>N</b>                 | <b>[kN]</b> | <b>1,9</b>     | <b>2,3</b> | <b>2,1</b> | <b>6,1</b>  | <b>1,6</b> | <b>5,7</b>  |
|   | $\bar{\delta}_{N0}$      | [mm]        | 0,166          | 0,103      | 0,114      | 0,242       | 0,068      | 0,252       |
|   | $\bar{\delta}_{N\infty}$ | [mm]        | 0,253          | 0,386      | 0,898      | 0,687       | 1,575      | 0,842       |
| Non-cracked C20/25  | <b>N</b>                 | <b>[kN]</b> | <b>2,9</b>     | <b>4,5</b> | <b>4,1</b> | <b>7,9</b>  | <b>5,2</b> | <b>12,1</b> |
|   | $\bar{\delta}_{N0}$      | [mm]        | 0,123          | 0,154      | 0,156      | 0,144       | 0,217      | 0,165       |
|   | $\bar{\delta}_{N\infty}$ | [mm]        | 0,253          | 0,386      | 0,898      | 0,687       | 1,575      | 0,842       |
| Non-cracked C50/60  | <b>N</b>                 | <b>[kN]</b> | <b>4,5</b>     | <b>6,3</b> | <b>5,8</b> | <b>12,0</b> | <b>6,9</b> | <b>16,1</b> |
|   | $\bar{\delta}_{N0}$      | [mm]        | 0,131          | 0,171      | 0,110      | 0,376       | 0,104      | 0,261       |
|   | $\bar{\delta}_{N\infty}$ | [mm]        | 0,253          | 0,386      | 0,898      | 0,687       | 1,575      | 0,842       |

**Table C6: Displacements under shear loads for static and quasi-static loading**

| Sormat Concrete Screw Anchor S-CSA A4 /<br>EJOT Concrete Screw Anchor JC6 |                          |             | Anchor size    |     |             |     |             |      |
|---|--------------------------|-------------|----------------|-----|-------------|-----|-------------|------|
|   |                          |             | S-CSA A4 / JC6 |     |             |     |             |      |
|   |                          |             | 6-1            | 6-2 | 8-1         | 8-2 | 10-1        | 10-2 |
| Cracked and non-cracked<br>concrete<br>C20/25 - C50/60                    | <b>V</b>                 | <b>[kN]</b> | <b>6,8</b>     |     | <b>11,6</b> |     | <b>14,0</b> |      |
|   | $\bar{\delta}_{V0}$      | [mm]        | 1,090          |     | 1,251       |     | 1,740       |      |
|   | $\bar{\delta}_{V\infty}$ | [mm]        | 1,635          |     | 1,877       |     | 2,610       |      |

**Sormat Concrete Screw Anchor S-CSA A4 /  
EJOT Concrete Screw Anchor JC6**

**Performance**  
Displacements under tension and shear loads

**Annex C(5/5)**