



## UITVOERINGEN

- elektrolytisch verzinkt staal
- roestvast staal

## BOUWMATERIALEN

### Goedgekeurd voor:

- Geperforeerde baksteen
- Cellenbeton
- Holle bouwsteen van licht beton
- Geperforeerde kalkzandsteen
- Thermische isolatieblokken
- Volle bouwsteen van normaal- en lichtbeton
- Volle baksteen
- Volle kalkzandsteen
- Beton C12/15

### Tevens geschikt voor:

- Natuursteen met hoge dichtheid
- Gipsblokken

## GOEDKEURINGEN



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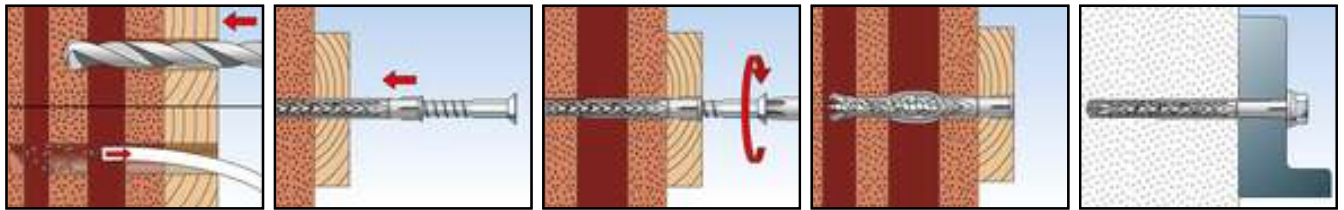


## TOEPASSINGEN

- Gevel-, plafond en dakconstructies van hout en metaal
- Facade substructures under compression load (e.g. distance installation without a wall bracket)
- Ramen
- Hekwerken en deuren
- Kledingkasten
- Hangende keukenkasten
- Rachelwerk
- Beams
- TV consoles
- Wall covering
- Metal brackets
- Metal supports
- Kabelkanalen
- Cable trays

## TOEPASSINGEN

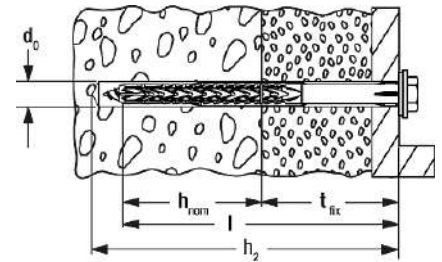
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## TECHNISCHE GEGEVENS



Constructie-/ kozijnplug SXRL-FUS



Elektrolytisch verzinkt

| Artikelnaam       | Art.-Nr. | DIBt goedkeuring | Goed-keuring | Boordiameter<br>$d_0$<br>[mm] | Pluglengte<br>$l$<br>[mm] | Min. boorgatdiepte bij doorsteekmontage<br>$h_2$<br>[mm] | Nuttige lengte bij verankering diepte 50 mm<br>[mm] | Nuttige lengte bij verankering diepte 70 mm<br>$t_{fix}$<br>[mm] | Nuttige lengte bij verankering diepte 90 mm<br>$t_{fix}$<br>[mm] |
|-------------------|----------|------------------|--------------|-------------------------------|---------------------------|--|---|--|--|
| SXRL 8 x 60 FUS   | 540127   |                  | ■            | 8                             | 60                        | 70   | 10  |  |  |
| SXRL 8 x 80 FUS   | 540129   |                  | ■            | 8                             | 80                        | 90   | 30  | 10   |  |
| SXRL 8 x 100 FUS  | 540130   |                  | ■            | 8                             | 100                       | 110  | 50  | 30   | 10   |
| SXRL 8 x 120 FUS  | 540131   |                  | ■            | 8                             | 120                       | 130  | 70  | 50   | 30   |
| SXRL 8 x 140 FUS  | 540133   |                  | ■            | 8                             | 140                       | 150  | 90  | 70   | 50   |
| SXRL 8 x 160 FUS  | 540134   |                  | ■            | 8                             | 160                       | 170  | 110   | 90   | 70   |
| SXRL 10 x 80 FUS  | 522719   |                  | ■            | 10                            | 80                        | 90   | 30  | 10   |  |
| SXRL 10 x 100 FUS | 522720   |                  | ■            | 10                            | 100                       | 110  | 50  | 30   | 10   |
| SXRL 10 x 120 FUS | 522721   |                  | ■            | 10                            | 120                       | 130  | 70  | 50   | 30   |
| SXRL 10 x 140 FUS | 522723   |                  | ■            | 10                            | 140                       | 150  | 90  | 70   | 50   |
| SXRL 10 x 160 FUS | 522724   |                  | ■            | 10                            | 160                       | 170  | 110   | 90   | 70   |
| SXRL 10 x 180 FUS | 522725   |                  | ■            | 10                            | 180                       | 190  | 130   | 110  | 90   |
| SXRL 10 x 200 FUS | 522726   |                  | ■            | 10                            | 200                       | 210  | 150   | 130  | 110  |
| SXRL 10 x 230 FUS | 522727   |                  | ■            | 10                            | 230                       | 240  | 180   | 160  | 140  |
| SXRL 10 x 260 FUS | 522728   |                  | ■            | 10                            | 260                       | 270  | 210   | 190  | 170  |
| SXRL 10 x 290 FUS | 522729   |                  | ■            | 10                            | 290                       | 300  | 240   | 220  | 200  |
| SXRL 14 x 80 FUS  | 530946   |                  | ■            | 14                            | 80                        | 95   |   | 10   |  |
| SXRL 14 x 100 FUS | 530947   |                  | ■            | 14                            | 100                       | 115  |   | 30   | 10   |
| SXRL 14 x 120 FUS | 530948   |                  | ■            | 14                            | 120                       | 135  |   | 50   | 30   |
| SXRL 14 x 140 FUS | 530949   |                  | ■            | 14                            | 140                       | 155  |   | 70   | 50   |
| SXRL 14 x 160 FUS | 530950   |                  | ■            | 14                            | 160                       | 175  |   | 90   | 70   |
| SXRL 14 x 180 FUS | 530951   |                  | ■            | 14                            | 180                       | 195  |   | 110  | 90   |
| SXRL 14 x 200 FUS | 530952   |                  | ■            | 14                            | 200                       | 215  |   | 130  | 110  |
| SXRL 14 x 230 FUS | 530953   |                  | ■            | 14                            | 230                       | 245  |   | 160  | 140  |
| SXRL 14 x 260 FUS | 530954   |                  | ■            | 14                            | 260                       | 275  |   | 190  | 170  |

## Roestvast staal A4, corrosieweerstandsklasse III

| Artikelnaam          | Art.-Nr. | DIBt goedkeuring | Goed-keuring | Boordiameter<br>$d_0$<br>[mm] | Pluglengte<br>$l$<br>[mm] | Min. boorgatdiepte bij doorsteekmontage<br>$h_2$<br>[mm] | Nuttige lengte bij verankering sdiepte 50 mm<br>[mm] | Nuttige lengte bij verankering sdiepte 70 mm<br>$t_{fix}$<br>[mm] | Nuttige lengte bij verankering sdiepte 90 mm<br>$t_{fix}$<br>[mm] |
|----------------------|----------|------------------|--------------|-------------------------------|---------------------------|--|--|---|---|
| SXRL 8 x 60 FUS A4   | 540135   |                  | ■            | 8                             | 60                        | 70   | 10   |   |   |
| SXRL 8 x 80 FUS A4   | 540136   |                  | ■            | 8                             | 80                        | 90   | 30   | 10  |   |
| SXRL 8 x 100 FUS A4  | 540137   |                  | ■            | 8                             | 100                       | 110  | 50   | 30  | 10  |
| SXRL 10 x 80 FUS A4  | 522730   |                  | ■            | 10                            | 80                        | 90   | 30   | 10  |   |
| SXRL 10 x 100 FUS A4 | 522731   |                  | ■            | 10                            | 100                       | 110  | 50   | 30  | 10  |
| SXRL 10 x 120 FUS A4 | 522732   |                  | ■            | 10                            | 120                       | 130  | 70   | 50  | 30  |
| SXRL 10 x 140 FUS A4 | 522733   |                  | ■            | 10                            | 140                       | 150  | 90   | 70  | 50  |
| SXRL 10 x 160 FUS A4 | 522734   |                  | ■            | 10                            | 160                       | 170  | 110  | 90  | 70  |
| SXRL 10 x 180 FUS A4 | 522735   |                  | ■            | 10                            | 180                       | 190  | 130  | 110   | 90  |
| SXRL 10 x 200 FUS A4 | 522736   |                  | ■            | 10                            | 200                       | 210  | 150  | 130   | 110   |
| SXRL 10 x 230 FUS A4 | 522737   |                  | ■            | 10                            | 230                       | 240  | 180  | 160   | 140   |
| SXRL 10 x 260 FUS A4 | 522738   |                  | ■            | 10                            | 260                       | 270  | 210  | 190   | 170   |
| SXRL 10 x 290 FUS A4 | 522739   |                  | ■            | 10                            | 290                       | 300  | 240  | 220   | 200   |
| SXRL 14 x 80 FUS A4  | 530955   |                  | ■            | 14                            | 80                        | 95   |  | 10  |   |
| SXRL 14 x 100 FUS A4 | 530956   |                  | ■            | 14                            | 100                       | 115  |  | 30  | 10  |
| SXRL 14 x 120 FUS A4 | 530957   |                  | ■            | 14                            | 120                       | 135  |  | 50  | 30  |
| SXRL 14 x 140 FUS A4 | 530958   |                  | ■            | 14                            | 140                       | 155  |  | 70  | 50  |
| SXRL 14 x 160 FUS A4 | 530959   |                  | ■            | 14                            | 160                       | 175  |  | 90  | 70  |
| SXRL 14 x 180 FUS A4 | 530960   |                  | ■            | 14                            | 180                       | 195  |  | 110   | 90  |
| SXRL 14 x 200 FUS A4 | 530961   |                  | ■            | 14                            | 200                       | 215  |  | 130   | 110   |
| SXRL 14 x 230 FUS A4 | 530962   |                  | ■            | 14                            | 230                       | 245  |  | 160   | 140   |
| SXRL 14 x 260 FUS A4 | 530963   |                  | ■            | 14                            | 260                       | 275  |  | 190   | 170   |

## LOADS

### Frame fixing SXRL<sup>3)</sup>

Highest recommended loads<sup>1)</sup> for a single anchor as part of a multiple fixing of non-structural systems.  
The given loads are valid for wood screws with the specified diameter.

| Type   |  |  | SXRL 8 |      |      |
|--|--|--|--------|------|------|
| Anchorage depth  | $h_{ef}$ [mm]  |  | 50     | 70   | 90   |
| Diameter of the wood screw   | $\emptyset$ [mm]                                       |  | 6,0    | 6,0  | 6,0  |
| Min. edge distance concrete  | $a_r$ [mm]   |  | 60     | 80   | 100  |
| <b>Recommended loads in the respective base material <math>F_{rec}</math><sup>2)</sup></b> |  |  |        |      |      |
| Concrete   | $\geq C20/25$ [kN]                                     |  | 0,60   | 1,00 | 1,00 |
| Solid brick  | $\geq Mz 12$ [kN]                                      |  | 0,45   | 0,60 | 0,60 |
| Solid sand-lime brick  | $\geq KS 12$ [kN]                                      |  | 0,40   | 0,50 | 0,50 |
| Vertically perforated brick  | $\geq Hlz 12$ ( $\rho \geq 1,0 \text{ kg/dm}^3$ ) [kN] |  | 0,15   | 0,15 | 0,15 |
| Perforated sand-lime brick   | $\geq KSL 12$ [kN]                                     |  | 0,10   | 0,40 | 0,40 |
| Aerated concrete   | AAC 2 [kN]   |  | -      | 0,10 | 0,10 |
| Aerated concrete   | AAC 4 [kN]   |  | -      | 0,15 | 0,20 |

<sup>1)</sup> Required safety factors are considered.

<sup>2)</sup> Valid for tensile load, shear load and oblique load under any angle.

<sup>3)</sup> Valid for zinc coated screws and for screws made of stainless steel. For exterior use of the zinc coated screws measures against incoming humidity have to be taken.

## LOADS

### Frame fixing SXRL<sup>4)</sup>

Highest permissible loads<sup>1)2)</sup> of a single anchor as part of a multiple fixing of non-structural systems. For the design the complete assessment ETA-07/0121 has to be considered.

| Product   |   | SXRL |                                     |      |      |                                      |      |                                      |                                      |      |
|---|---|------|-------------------------------------|------|------|--------------------------------------|------|--------------------------------------|--------------------------------------|------|
| Anchor diameter   | [mm]  | Ø 8  |                                     |      | Ø 10 |                                      |      | Ø 14                                 |                                      |      |
| Anchorage depth   | $h_{nom}$ [mm]  | 50   | 70                                  | 90   | 50   | 70                                   | 90   | 70                                   | 90                                   |      |
| <b>Anchorage in concrete <math>\geq</math> C12/15</b>   |   |      |                                     |      |      |                                      |      |                                      |                                      |      |
| Permissible tensile load  | [kN]  | 1,59 | 1,98                                |      | 1,98 | 2,58                                 |      | 3,37                                 |                                      |      |
| Permissible shear load  | Zinc-plated steel [kN]  | 4,23 |                                     |      | 5,98 |                                      |      | 12,40                                |                                      |      |
|   | Stainless steel A4 [kN]   | 3,93 |                                     |      | 5,98 |                                      |      | 11,63                                |                                      |      |
| Minimum member thickness  | $h_{min}$ [mm]  | 80   | 100                                 | 120  | 100  |                                      | 120  | 110                                  | 130                                  |      |
| Characteristic edge distance  | $c_{cr,N}$ [mm]   | 85   |                                     |      | 140  |                                      |      | 140                                  |                                      |      |
| Characteristic spacing  | $a$ resp. $s_{cr,N}$ [mm]   | 90   | 105                                 |      | 120  |                                      |      | 135                                  |                                      |      |
| Minimum spacing   | $s_{min}$ [mm]  | 85   |                                     |      | 70   |                                      |      | 85                                   |                                      |      |
| with an edge distance   | $c \geq$ [mm]   | 85   |                                     |      | 140  |                                      |      | 140                                  |                                      |      |
| Minimum edge distance   | $c_{min}$ [mm]  | 85   |                                     |      | 70   |                                      |      | 85                                   |                                      |      |
| with a spacing  | $s \geq$ [mm]   | 85   |                                     |      | 175  |                                      |      | 175                                  |                                      |      |
| <b>Anchorage in narrow concrete members (<math>h \geq 40</math> mm) made of concrete <math>\geq</math> C12/15, e.g. weather shells of triple-skin outer wall panels</b> |   |      |                                     |      |      |                                      |      |                                      |                                      |      |
| Permissible tensile load  | [kN]  | -    |                                     |      | 0,99 | -                                    |      | -                                    |                                      |      |
| Permissible shear load  | [kN]  | -    |                                     |      | 5,98 | -                                    |      | -                                    |                                      |      |
| Permissible tensile load  | [kN]  | -    |                                     |      | 1,39 | -                                    |      | -                                    |                                      |      |
| Permissible shear load  | [kN]  | -    |                                     |      | 5,98 | -                                    |      | -                                    |                                      |      |
| <b>Anchorage in masonry</b>   |   |      |                                     |      |      |                                      |      |                                      |                                      |      |
| Permissible load <sup>3)</sup> in solid brick   | $\geq$ Mz 12 a. $\geq$ NF [kN]  | 0,57 | 0,71                                | 0,57 | 1,14 | -                                    |      | 0,86                                 |                                      |      |
|   | $\geq$ Mz 20 a. $\geq$ NF [kN]  | 0,86 | 1,14                                | 1,00 | 1,14 | -                                    |      | 1,14                                 |                                      |      |
| Permissible load <sup>3)</sup> in solid sand-lime brick   | $\geq$ KS 10 a. $\geq$ NF [kN]  | 0,57 |                                     |      | 0,57 | 0,71                                 | -    |                                      | 0,86                                 |      |
|   | $\geq$ KS 20 a. $\geq$ NF [kN]  | 0,71 | 0,86                                | 1,00 |      | -                                    |      | 1,29                                 |                                      |      |
| Permissible load <sup>3)</sup> in lightweight concrete block  | $\geq$ V 2; $\rho \geq 1,2$ kg/dm <sup>3</sup> [kN]   | 0,11 | 0,26                                | 0,11 |      | -                                    |      | 0,26                                 |                                      |      |
|   | $\geq$ V 6; $\rho \geq 1,6$ kg/dm <sup>3</sup> [kN]   | 0,34 | 0,57                                | 0,57 | 1,29 | -                                    |      | 0,57                                 |                                      |      |
| Permissible load <sup>3)5)</sup> in vertically perforated brick (e.g. Poroton)  | $\geq$ HLz 10; $\rho \geq 1,0$ kg/dm <sup>3</sup> [kN]  | 0,17 |                                     |      | -    | 0,21                                 | -    |                                      | 0,57                                 | 0,71 |
|   | $\geq$ KSL 6 [kN]   | -    |                                     |      | -    | 0,21                                 | -    |                                      | 0,26                                 | 0,34 |
| Permissible load <sup>3)</sup> in perforated sand-lime brick  | $\geq$ KSL 12 [kN]  | 0,34 | 0,43                                |      | -    | 0,71                                 | -    |                                      | 0,43                                 | 0,71 |
|   | $\geq$ HBL 2 [kN]   | 0,43 | 0,57                                | 0,43 | 0,57 | 0,71                                 | -    |                                      | 0,34                                 | 0,21 |
| Permissible load <sup>3)5)</sup> hollow lightweight concrete blocks   | $\geq$ HBL 6 [kN]   | 0,43 | 0,71                                | 0,43 | 0,71 | 0,43                                 | -    |                                      | 0,57                                 | -    |
|   | Permissible load <sup>3)5)</sup> in ceilings made of vertically perforated bricks $f_b \geq 10$ N/mm <sup>2</sup> ; $\rho \geq 0,7$ kg/dm <sup>3</sup> [kN] | -    |                                     |      | -    | 0,57                                 | -    |                                      | -                                    |      |
| Minimum member thickness  | $h_{min}$ [mm]  | 115  |                                     |      | 110  |                                      |      | 115                                  |                                      |      |
| Minimum spacing (single anchor)   | $a_{min}$ [mm]  | 250  |                                     |      | 250  |                                      |      | 250                                  |                                      |      |
| Minimum spacing (anchor group)  | $s_{min}$ [mm]  | 100  |                                     |      | 100  |                                      |      | 100                                  |                                      |      |
| Minimum edge distance (anchor group)  | $c_{min}$ [mm]  | 100  |                                     |      | 100  |                                      |      | 100                                  |                                      |      |
| <b>Anchorage in aerated concrete</b>  |   |      |                                     |      |      |                                      |      |                                      |                                      |      |
| Permissible load <sup>3)</sup> in aerated concrete  | 2 N/mm <sup>2</sup> [kN]  | -    | 0,14                                | 0,21 | -    | 0,18                                 | 0,21 | 0,32                                 | 0,43                                 |      |
|   | 4 N/mm <sup>2</sup> [kN]  | -    | 0,32                                | 0,43 | -    | 0,43                                 | 0,54 | 0,89                                 | 1,07                                 |      |
|   | 6 N/mm <sup>2</sup> [kN]  | -    | 0,54                                | 0,71 | -    | 0,71                                 | 0,89 | 1,43                                 | 1,79                                 |      |
| Minimum member thickness  | $h_{min}$ [mm]  | -    | 175                                 |      | -    | 100                                  | 120  | 175 <sup>6)</sup> /300 <sup>7)</sup> |                                      |      |
| Minimum spacing (single anchor)   | $a_{min}$ [mm]  | -    | 250                                 |      | -    | 250                                  |      | 250                                  |                                      |      |
| Minimum spacing (anchor group)  | $s_{min}$ [mm]  | -    | 80 <sup>6)</sup> /110 <sup>8)</sup> |      | -    | 100 <sup>6)</sup> /120 <sup>8)</sup> |      | 80                                   | 100 <sup>6)</sup> /125 <sup>7)</sup> |      |
| Minimum edge distance (anchor group)  | $c_{min}$ [mm]  | -    | 90 <sup>6)</sup> /110 <sup>8)</sup> |      | -    | 120                                  | 120  | 120 <sup>6)</sup> /150 <sup>7)</sup> |                                      |      |

<sup>1)</sup> The required partial safety factors for material resistance as well as a partial safety factor for load actions  $\gamma_L = 1,4$  are considered.

As a single anchor counts e.g. an anchor with a minimum spacing  $a$  according to table B4.1 resp. table B4.2 of the assessment.

<sup>2)</sup> Valid for temperatures in the substrate up to +50 °C (resp. short term up to +80 °C). For long term temperatures up to +30 °C higher permissible loads may be possible.

<sup>3)</sup> Valid for tensile load, shear load and oblique load under any angle. For combinations of tensile loads, shear loads and bending moments see assessment.

<sup>4)</sup> Valid for zinc coated screws and for screws made of stainless steel. For exterior use of the zinc coated screws measures against incoming humidity according to assessment have to be taken.

<sup>5)</sup> Rotary drilling.