

## The efficient with short expansion element



5 Frame fixings / Stand-off installation

### VERSIONS

- Zinc-plated steel
- Stainless steel
- Hot-dip galvanized steel

### BUILDING MATERIALS

- Approved for:**
- Concrete  $\geq$  C12/15
  - Vertically perforated brick
  - Hollow blocks made from lightweight concrete
  - Perforated sand-lime brick
  - Solid sand-lime brick
  - Aerated concrete
  - Solid block made from lightweight and normal weight concrete
  - Solid brick
  - Thermal insulation blocks
- Also suitable for:**
- Natural stone with dense structure
  - Solid panel made from gypsum

### CERTIFICATES



### ADVANTAGES

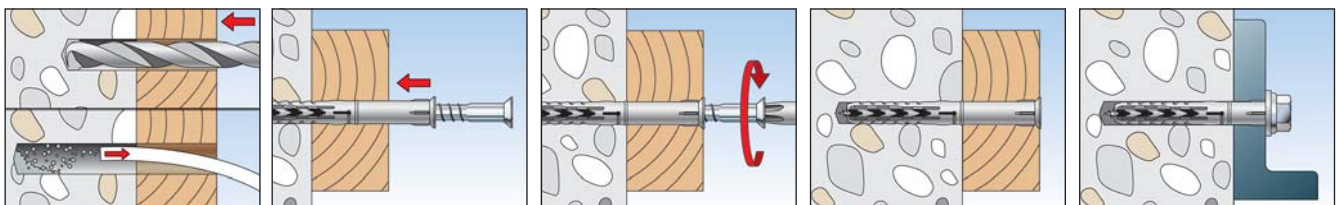
- The special functioning allows for use in solid and hollow building materials with an anchorage depth of just 50 mm, ensuring an economical fixing.
- The ETA assessment covers use in a range of solid and hollow building materials, and guarantees a secure fixing.
- The specially developed combination of plugs and screws ensures the very best handling. The plug has a noticeable hold, making installation more convenient.
- The extensive range with diameters of 6, 8 and 10 mm, usable lengths up to 210 mm.

### APPLICATIONS

- Façade, ceiling and roof substructures made of wood and metal
- Windows
- Gates and doors
- Wardrobes
- Kitchen hanging cabinets
- Squared timbers
- Beams
- TV consoles
- Wall covering
- Metal brackets
- Metal supports
- Cable ducts
- Cable trays

### FUNCTIONING

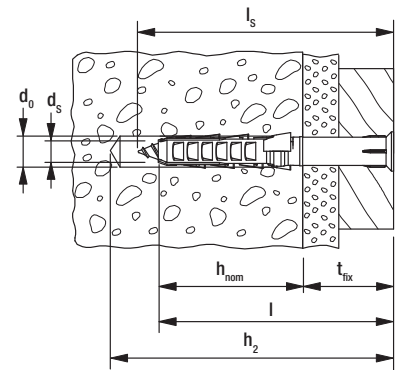
- The SXR is suitable for push-through installation.
- The SXR expands in solid building materials. In hollow building materials the loads are transmitted to the substrate webs.
- With vertically perforated bricks, only use rotary drilling (no impact drilling).
- SXR-T with countersunk head screw is recommended for the installation of timber constructions; in the case of metal constructions, use SXR-FUS with a wide sleeve rim and a moulded washer on the screw, which also features an integrated hexagon socket.



## TECHNICAL DATA



SXR - without screw

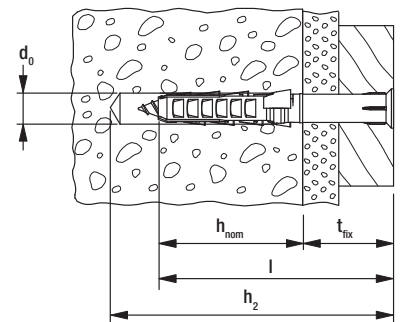


| Item        | Art.-No. | Drill hole diameter<br>$d_0$<br>[mm] | Min. drill hole depth for through fixings<br>$h_2$<br>[mm] | Min. anchorage depth<br>$h_{nom}$<br>[mm] | Anchor length<br>$l$<br>[mm] | Screw diameter<br>$d_s$<br>[mm] | Min. screw length<br>$l_s$<br>[mm] | Max. fixture thickness<br>$t_{fix}$<br>[mm] | Sales unit<br>[pcs] |
|-------------|----------|--------------------------------------|--|---|------------------------------|---------------------------------|------------------------------------|---|---------------------|
| SXR 6 x 35  | 503228   | 6                                    | 45   | 30  | 35                           | 4,5                             | 40                                 | 5   | 100                 |
| SXR 6 x 50  | 503229   | 6                                    | 60   | 30  | 50                           | 4,5                             | 55                                 | 20  | 100                 |
| SXR 6 x 60  | 503230   | 6                                    | 70   | 30  | 60                           | 4,5                             | 65                                 | 30  | 100                 |
| SXR 8 x 60  | 506194   | 8                                    | 70   | 50  | 60                           | 5,5 - 6,0                       | 65                                 | 10  | 100                 |
| SXR 8 x 80  | 506196   | 8                                    | 90   | 50  | 80                           | 5,5 - 6,0                       | 85                                 | 30  | 100                 |
| SXR 8 x 100 | 506198   | 8                                    | 110  | 50  | 100                          | 5,5 - 6,0                       | 125                                | 50  | 100                 |
| SXR 8 x 120 | 506199   | 8                                    | 130  | 50  | 120                          | 5,5 - 6,0                       | 105                                | 70  | 100                 |

## TECHNICAL DATA



SXR-Z - with zinc-plated countersunk head screw with cross drive PZ



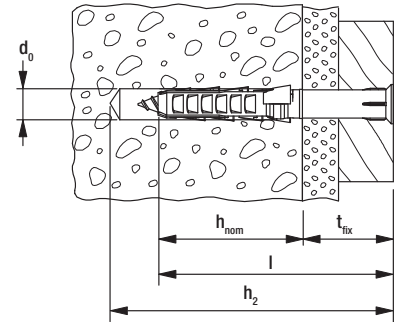
| Item         | Art.-No.             | Drill hole diameter<br>$d_0$<br>[mm] | Min. drill hole depth for through fixings<br>$h_2$<br>[mm] | Min. anchorage depth<br>$h_{nom}$<br>[mm] | Anchor length<br>$l$<br>[mm] | Max. fixture thickness<br>$t_{fix}$<br>[mm] | Drive | Sales unit<br>[pcs] |
|--------------|----------------------|--------------------------------------|--|---|------------------------------|---|-------|---------------------|
| SXR 6 x 60 Z | 503233 <sup>1)</sup> | 6                                    | 70   | 30  | 60                           | 30  | PZ2   | 50                  |

1) not pre-assembled

## TECHNICAL DATA



**SXR-T** - with fisher countersunk head safety screw



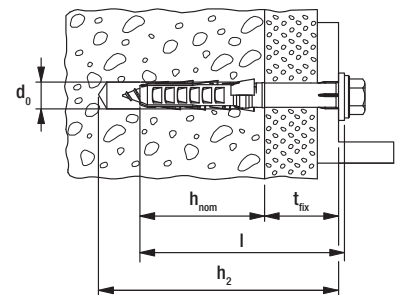
5 Frame fixings / Stand-off installation

|                       | Zinc-plated steel | Stainless steel | Hot-dip galvanised steel | Approval | Drill hole diameter | Min. drill hole depth for through fixings | Min. anchorage depth | Anchor length | Max. fixture thickness | Drive | Sales unit |
|-----------------------|-------------------|-----------------|--------------------------|----------|---------------------|---|----------------------|---------------|------------------------|-------|------------|
|                       | Art.-No.          | Art.-No.        | Art.-No.                 | ETA      | $d_0$ [mm]          | $h_2$ [mm]                                | $h_{nom}$ [mm]       | $l$ [mm]      | $t_{fix}$ [mm]         |       | [pcs]      |
| Item                  | gvz               | A4              | hdg                      |          |                     |   |                      |               |                        |       |            |
| <b>SXR 8 x 60 T</b>   | 502999            | —               | —                        | ■        | 8                   | 70  | 50                   | 60            | 10                     | T30   | 50         |
| <b>SXR 8 x 80 T</b>   | 503000            | —               | —                        | ■        | 8                   | 90  | 50                   | 80            | 30                     | T30   | 50         |
| <b>SXR 8 x 100 T</b>  | 503001            | —               | —                        | ■        | 8                   | 110                                       | 50                   | 100           | 50                     | T30   | 50         |
| <b>SXR 8 x 120 T</b>  | 503002            | —               | —                        | ■        | 8                   | 130                                       | 50                   | 120           | 70                     | T30   | 50         |
| <b>SXR 10 x 80 T</b>  | 046263            | 046272          | —                        | ■        | 10                  | 90  | 50                   | 80            | 30                     | T40   | 50         |
| <b>SXR 10 x 100 T</b> | 046264            | 046274          | —                        | ■        | 10                  | 110                                       | 50                   | 100           | 50                     | T40   | 50         |
| <b>SXR 10 x 100 T</b> | —                 | —               | 509534                   | —        | 10                  | 110                                       | 50                   | 100           | 50                     | T40   | 50         |
| <b>SXR 10 x 120 T</b> | 046265            | 046278          | —                        | ■        | 10                  | 130                                       | 50                   | 120           | 70                     | T40   | 50         |
| <b>SXR 10 x 120 T</b> | —                 | —               | 509535                   | —        | 10                  | 130                                       | 50                   | 120           | 70                     | T40   | 50         |
| <b>SXR 10 x 140 T</b> | 046266            | 046279          | —                        | ■        | 10                  | 150                                       | 50                   | 140           | 90                     | T40   | 50         |
| <b>SXR 10 x 140 T</b> | —                 | —               | 509536                   | —        | 10                  | 150                                       | 50                   | 140           | 90                     | T40   | 50         |
| <b>SXR 10 x 160 T</b> | 046267            | 046283          | —                        | ■        | 10                  | 170                                       | 50                   | 160           | 110                    | T40   | 50         |
| <b>SXR 10 x 180 T</b> | 046268            | 046285          | —                        | ■        | 10                  | 190                                       | 50                   | 180           | 130                    | T40   | 50         |
| <b>SXR 10 x 200 T</b> | 046269            | 046286          | —                        | ■        | 10                  | 210                                       | 50                   | 200           | 150                    | T40   | 50         |
| <b>SXR 10 x 230 T</b> | 046270            | 046287          | —                        | ■        | 10                  | 240                                       | 50                   | 230           | 180                    | T40   | 50         |
| <b>SXR 10 x 260 T</b> | 046271            | 046288          | —                        | ■        | 10                  | 270                                       | 50                   | 260           | 210                    | T40   | 50         |

## TECHNICAL DATA



**SXR-FUS** - with fisher hexagon head safety screw, moulded washer and integrated T40 bit recess



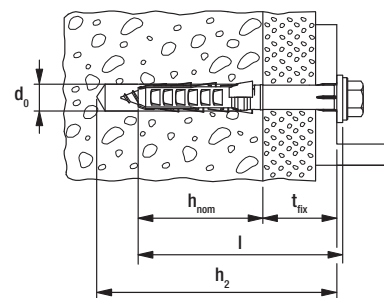
|                         | Zinc-plated steel    | Stainless steel | Hot-dip galvanised steel | Approval | Drill hole diameter | Min. drill hole depth for through fixings | Min. anchorage depth | Anchor length | Max. fixture thickness | Drive    | Sales unit |
|-------------------------|----------------------|-----------------|--------------------------|----------|---------------------|---|----------------------|---------------|------------------------|----------|------------|
|                         | Art.-No.             | Art.-No.        | Art.-No.                 | ETA      | $d_0$ [mm]          | $h_2$ [mm]                                | $h_{nom}$ [mm]       | $l$ [mm]      | $t_{fix}$ [mm]         |          | [pcs]      |
| Item                    | gvz                  | A4              | hdg                      |          |                     |   |                      |               |                        |          |            |
| <b>SXR 10 x 52 FUS</b>  | 502456 <sup>1)</sup> | —               | —                        | ■        | 10                  | 62  | 50                   | 52            | 2                      | T40/SW13 | 50         |
| <b>SXR 10 x 60 FUS</b>  | 046329               | 046339          | —                        | ■        | 10                  | 70  | 50                   | 60            | 10                     | T40/SW13 | 50         |
| <b>SXR 10 x 60 FUS</b>  | —                    | —               | 509537                   | —        | 10                  | 70  | 50                   | 60            | 10                     | T40/SW13 | 50         |
| <b>SXR 10 x 80 FUS</b>  | 046330               | 046340          | —                        | ■        | 10                  | 90  | 50                   | 80            | 30                     | T40/SW13 | 50         |
| <b>SXR 10 x 80 FUS</b>  | —                    | —               | 509538                   | —        | 10                  | 90  | 50                   | 80            | 30                     | T40/SW13 | 50         |
| <b>SXR 10 x 100 FUS</b> | 046331               | 046342          | —                        | ■        | 10                  | 110                                       | 50                   | 100           | 50                     | T40/SW13 | 50         |
| <b>SXR 10 x 100 FUS</b> | —                    | —               | 509539                   | —        | 10                  | 110                                       | 50                   | 100           | 50                     | T40/SW13 | 50         |
| <b>SXR 10 x 120 FUS</b> | 046332               | 046343          | —                        | ■        | 10                  | 130                                       | 50                   | 120           | 70                     | T40/SW13 | 50         |
| <b>SXR 10 x 140 FUS</b> | 046333               | 046344          | —                        | ■        | 10                  | 150                                       | 50                   | 140           | 90                     | T40/SW13 | 50         |
| <b>SXR 10 x 140 FUS</b> | —                    | —               | 509540                   | —        | 10                  | 150                                       | 50                   | 140           | 90                     | T40/SW13 | 50         |

1) not pre-assembled

## TECHNICAL DATA



**SXR-FUS** - with fischer hexagon head safety screw, moulded washer and integrated T40 bit recess



|                         | Zinc-plated steel | Stainless steel | Hot-dip galvanized steel | Approval | Drill hole diameter | Min. drill hole depth for through fixings | Min. anchorage depth | Anchor length | Max. fixture thickness | Drive    | Sales unit |
|-------------------------|-------------------|-----------------|--------------------------|----------|---------------------|---|----------------------|---------------|------------------------|----------|------------|
|                         | Art.-No.          | Art.-No.        | Art.-No.                 | ETA      | $d_0$<br>[mm]       | $h_2$<br>[mm]                             | $h_{nom}$<br>[mm]    | $l$<br>[mm]   | $t_{fix}$<br>[mm]      |          | [pcs]      |
| Item                    | gvz               | A4              | hdg                      |          |                     |   |                      |               |                        |          |            |
| <b>SXR 10 x 160 FUS</b> | <b>046334</b>     | <b>046345</b>   | —                        | ■        | 10                  | 170                                       | 50                   | 160           | 110                    | T40/SW13 | 50         |
| <b>SXR 10 x 180 FUS</b> | <b>046335</b>     | <b>046361</b>   | —                        | ■        | 10                  | 190                                       | 50                   | 180           | 130                    | T40/SW13 | 50         |
| <b>SXR 10 x 200 FUS</b> | <b>046336</b>     | <b>046362</b>   | —                        | ■        | 10                  | 210                                       | 50                   | 200           | 150                    | T40/SW13 | 50         |
| <b>SXR 10 x 230 FUS</b> | <b>046337</b>     | <b>046363</b>   | —                        | ■        | 10                  | 240                                       | 50                   | 230           | 180                    | T40/SW13 | 50         |
| <b>SXR 10 x 260 FUS</b> | <b>046338</b>     | <b>046364</b>   | —                        | ■        | 10                  | 270                                       | 50                   | 260           | 210                    | T40/SW13 | 50         |

1) not pre-assembled

## ACCESSORIES



Cover cap **ADT**

| Item             | Art.-No.      | Colour     | Cap    | Match                                       | Sales unit |
|------------------|---------------|------------|--------|---|------------|
|                  |               |            | [Ø mm] |   | [pcs]      |
| <b>ADT 15 W</b>  | <b>060326</b> | white      | 15     | Safety screw with integrated bit recess T40 | 100        |
| <b>ADT 15 DB</b> | <b>060329</b> | dark brown | 15     | Safety screw with integrated bit recess T40 | 100        |
| <b>ADT 18 W</b>  | <b>060334</b> | white      | 18     | Safety screw with integrated bit recess T40 | 100        |
| <b>ADT 18 DB</b> | <b>060337</b> | dark brown | 18     | Safety screw with integrated bit recess T40 | 100        |

## ACCESSORIES



Washer **U**

| Item                                | Art.-No.      | External-Ø  | Hole-Ø      | Thickness   | Matching anchor type    | Sales unit |
|-------------------------------------|---------------|-------------|-------------|-------------|-------------------------|------------|
|                                     |               | $d$<br>[mm] | $D$<br>[mm] | $s$<br>[mm] |                         | [pcs]      |
| <b>U 11,5 x 21 x 1,5 DIN 522 A2</b> | <b>010026</b> | 21          | 11.5        | 1.5         | SXR 10, SXRL 10, FUR 10 | 500        |

## ACCESSORIES



Aircrete hole punch **GBS**

| Item                | Art.-No.         | Drill hole      | Min. drill hole depth for through fixings | Match                                 | Sales unit |
|---------------------|------------------|-----------------|---|---------------------------------------|------------|
|                     |                  | $d_0$<br>[Ø mm] | $h_2$<br>[mm]                             |                                       | [pcs]      |
| <b>GBS 10 x 80</b>  | <b>050590</b> 1) | 9               | 85  | SXR 10 x 52, SXR 10 x 60, SXR 10 x 80 | 1          |
| <b>GBS 10 x 100</b> | <b>050591</b> 1) | 9               | 105                                       | SXR 10 x 100                          | 1          |
| <b>GBS 10 x 135</b> | <b>050593</b> 1) | 9               | 140                                       | SXR 10 x 120                          | 1          |
| <b>GBS 10 x 160</b> | <b>050594</b> 1) | 9               | 165                                       | SXR 10 x 140, SXR 10 x 160            | 1          |
| <b>GBS 10 x 185</b> | <b>050595</b> 1) | 9               | 190                                       | SXR 10 x 180                          | 1          |
| <b>GBS 10 x 230</b> | <b>050596</b> 1) | 9               | 235                                       | SXR 10 x 200, SXR 10 x 230            | 1          |

1) According to the ETA, the aircrete hole punch GBS must be used for drill-hole production in aerated concrete PB < 4N/mm<sup>2</sup>.

## LOADS

### Frame fixing SXR<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   |   | SXR  |      |  |
|---|---|------|------|--|
| Anchor diameter   | [mm]  | Ø 8  | Ø 10 |  |
| Anchorage depth   | $h_{nom}$ [mm]                                    | 50   | 50   |  |
| <b>Anchorage in concrete <math>\geq</math> C12/15</b>   |   |      |      |  |
| Permissible tensile load  | [kN]  | 0,99 | 1,79 |  |
| Permissible shear load  | Zinc-plated steel                                 | [kN] | 4,23 |  |
|   | Stainless steel A4                                | [kN] | 3,93 |  |
| Minimum member thickness  | $h_{min}$ [mm]                                    | 100  | 100  |  |
| Characteristic edge distance  | $c_{cr,N}$ [mm]                                   | 70   | 140  |  |
| Characteristic spacing  | $a$ resp. $s_{cr,N}$ [mm]                         | 70   | 100  |  |
| Minimum spacing   | $s_{min}$ [mm]                                    | 70   | 70   |  |
| with an edge distance   | $c \geq$ [mm]                                     | 70   | 210  |  |
| Minimum edge distance   | $c_{min}$ [mm]                                    | 70   | 85   |  |
| with a spacing  | $s \geq$ [mm]                                     | 70   | 100  |  |
| <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]  | -    | 1,19 |  |
| 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 |  |
|   | $\geq$ Mz 20 a. $\geq$ NF                         | [kN] | 0,71 |  |
| Permissible load <sup>3)</sup> in solid sand-lime brick   | $\geq$ KS 10 a. $\geq$ NF                         | [kN] | 0,57 |  |
|   | $\geq$ KS 20 a. $\geq$ NF                         | [kN] | 0,71 |  |
| Permissible load <sup>3)</sup> in lightweight concrete block  | $\geq$ V 2; $\rho \geq 1,2$ kg/dm <sup>3</sup>    | [kN] | 0,26 |  |
|   | $\geq$ V 6; $\rho \geq 1,6$ kg/dm <sup>3</sup>    | [kN] | 0,26 |  |
| 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 |  |
| Permissible load <sup>3)</sup> in perforated sand-lime brick  | $\geq$ KSL 6                                      | [kN] | 0,26 |  |
|   | $\geq$ KSL 12                                     | [kN] | 0,57 |  |
| Permissible load <sup>3)5)</sup> in hollow lightweight concrete blocks  | $\geq$ HBL 2                                      | [kN] | -    |  |
|   | $\geq$ HBL 6                                      | [kN] | 0,43 |  |
| Minimum member thickness  | $h_{min}$ [mm]                                    | 100  | 100  |  |
| Minimum spacing (single anchor)   | $a_{min}$ [mm]                                    | 250  | 250  |  |
| Minimum spacing (anchor group)  | $s_{min}$ [mm]                                    | 100  | 100  |  |
| Minimum edge distance (anchor group)  | $c_{min}$ [mm]                                    | 100  | 100  |  |
| <b>Anchorage in aerated concrete</b>  |   |      |      |  |
| Permissible load <sup>3)</sup> in aerated concrete  | $2$ N/mm <sup>2</sup>                             | [kN] | -    |  |
|   | $4$ N/mm <sup>2</sup>                             | [kN] | -    |  |
|   | $6$ N/mm <sup>2</sup>                             | [kN] | -    |  |
| Minimum member thickness  | $h_{min}$ [mm]                                    | -    | 100  |  |
| Minimum spacing (single anchor)   | $a_{min}$ [mm]                                    | -    | 250  |  |
| Minimum spacing (anchor group)  | $s_{min}$ [mm]                                    | -    | 400  |  |
| Minimum edge distance (anchor group)  | $c_{min}$ [mm]                                    | -    | 100  |  |

<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.

<sup>6)</sup> Drill holes to be made with aerated concrete hole punch.

## LOADS

### Frame fixing SXR<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   |  | SXR 6 | SXR 8 |
|--|--|-------|-------|
| Anchorage depth  | $h_{nom}$ [mm]   | 30    | 50    |
| Screw diameter   | $\emptyset$ [mm]                                       | 4,5   | 6,0   |
| Min. edge distance concrete  | $a_r$ [mm]   | 50    | 60    |
| <b>Recommended loads in the respective base material <math>F_{rec}</math><sup>2)</sup></b> |  |       |       |
| Concrete   | $\geq C20/25$ [kN]                                     | 0,25  | 0,40  |
| Solid brick  | $\geq Mz 12$ [kN]                                      | 0,20  | 0,30  |
| Solid sand-lime brick  | $\geq KS 12$ [kN]                                      | 0,20  | 0,30  |
| Vertically perforated brick  | $\geq Hlz 12$ ( $\rho \geq 1,0 \text{ kg/dm}^3$ ) [kN] | 0,10  | 0,10  |
| Perforated sand-lime brick   | $\geq KSL 12$ [kN]                                     | 0,20  | 0,30  |

<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.