## Loads

### Permissible loads \(^{1}\) in kN for a single anchor

<table>
<thead>
<tr>
<th>Anchor type</th>
<th>Anchorage depth</th>
<th>Aircrete blocks</th>
<th>Non-cracked aircrete panels</th>
<th>Cracked aircrete panels (wall, ceiling and roof panels)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>(wall, ceiling and roof panels)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>3.3</td>
<td>4.4</td>
</tr>
<tr>
<td>Minimum compressive strength (f_b) [N/mm(^2)]</td>
<td>2</td>
<td>4</td>
<td>3.3</td>
<td>4.4</td>
</tr>
</tbody>
</table>

**Injection system FIS V**

- **FIS V in conical drill hole (ETA-10/0383), with cone drill PBB, valid for temperature range -40 °C to +80 °C and dry masonry (d/d)**

### M8, M10 and M12

<table>
<thead>
<tr>
<th>Anchorage depth</th>
<th>Aircrete blocks</th>
<th>Non-cracked aircrete panels</th>
<th>Cracked aircrete panels (wall, ceiling and roof panels)</th>
</tr>
</thead>
<tbody>
<tr>
<td>75</td>
<td>0.71 (0.89)(^{2})</td>
<td>1.07 (1.61)(^{2})</td>
<td></td>
</tr>
</tbody>
</table>

**For anchorage in non-cracked aircrete panels, the values from the aircrete blocks column can be used as "recommended loads".**

### FIS E 11x85 M6, FIS E 11x85 M8

<table>
<thead>
<tr>
<th>Anchorage depth</th>
<th>Aircrete blocks</th>
<th>Non-cracked aircrete panels</th>
<th>Cracked aircrete panels (wall, ceiling and roof panels)</th>
</tr>
</thead>
<tbody>
<tr>
<td>85</td>
<td>0.71 (0.89)(^{2})</td>
<td>1.07 (1.61)(^{2})</td>
<td></td>
</tr>
</tbody>
</table>

When dimensioning, observe the approval certificate ETA-10/0383 in its entirety. Permissible edge distances and spacing and the minimum member thickness \(h_{\text{min}}\) should be taken from the approval.

### Injection system FIS V

- **FIS V in cylindrical drill hole (ETA-10/0383), valid for temperature range -40 °C to +80 °C and dry masonry (d/d)**

#### M6

<table>
<thead>
<tr>
<th>Anchorage depth</th>
<th>Aircrete blocks</th>
<th>Non-cracked aircrete panels</th>
<th>Cracked aircrete panels (wall, ceiling and roof panels)</th>
</tr>
</thead>
<tbody>
<tr>
<td>70</td>
<td>0.40 (0.43)(^{2})</td>
<td>0.89 (0.89)(^{2})</td>
<td></td>
</tr>
</tbody>
</table>

When dimensioning, observe the approval certificate ETA-12/0456 in its entirety. Permissible edge distances and spacing and the minimum member thickness \(h_{\text{min}}\) should be taken from the approval.

### Aircrete anchor FPX1 (ETA-12/0456)

<table>
<thead>
<tr>
<th>Anchor type</th>
<th>Anchorage depth</th>
<th>Aircrete blocks</th>
<th>Non-cracked aircrete panels</th>
<th>Cracked aircrete panels (wall, ceiling and roof panels)</th>
</tr>
</thead>
<tbody>
<tr>
<td>M6 - M12</td>
<td>70</td>
<td>0.40 (0.43)(^{2})</td>
<td>0.89 (0.89)(^{2})</td>
<td></td>
</tr>
</tbody>
</table>

When dimensioning, observe the approval certificate ETA-12/0456 in its entirety. Permissible edge distances and spacing and the minimum member thickness \(h_{\text{min}}\) should be taken from the approval.

### Frame fixing SXRL 10 (ETA-07/0121), SXRL 14 (ETA-14/0297)

<table>
<thead>
<tr>
<th>Anchor type</th>
<th>Anchorage depth</th>
<th>Aircrete blocks</th>
<th>Non-cracked aircrete panels</th>
<th>Cracked aircrete panels (wall, ceiling and roof panels)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SXRL 10</td>
<td>70</td>
<td>0.27 (0.27)(^{2})</td>
<td>0.71 (0.71)(^{2})</td>
<td></td>
</tr>
</tbody>
</table>

When dimensioning, observe the approval certificates ETA-07/0121 and ETA-14/0297 in their entirety. Permissible edge distances and spacing and the minimum member thickness \(h_{\text{min}}\) should be taken from the approval.

### Aircrete anchor GB with fischer safety screw (Z-21.2-123)

<table>
<thead>
<tr>
<th>Anchor type</th>
<th>Anchorage depth</th>
<th>Aircrete blocks</th>
<th>Non-cracked aircrete panels</th>
<th>Cracked aircrete panels (wall, ceiling and roof panels)</th>
</tr>
</thead>
<tbody>
<tr>
<td>GB 8</td>
<td>50</td>
<td>0.20 (0.20)(^{2})</td>
<td>0.40 (0.40)(^{2})</td>
<td></td>
</tr>
</tbody>
</table>

When dimensioning, observe the approval certificate Z-21.2-123 in its entirety. Permissible edge distances and spacing and the minimum member thickness \(h_{\text{min}}\) should be taken from the approval.

### Recommended loads\(^{3), 4)}, \(^{5)}\) for a single anchor

<table>
<thead>
<tr>
<th>Anchor type</th>
<th>Anchorage depth</th>
<th>Aircrete blocks</th>
<th>Non-cracked aircrete panels</th>
<th>Cracked aircrete panels (wall, ceiling and roof panels)</th>
</tr>
</thead>
<tbody>
<tr>
<td>UX 8x50</td>
<td>50</td>
<td>0.06 (0.06)(^{2})</td>
<td>0.20 (0.20)(^{2})</td>
<td></td>
</tr>
<tr>
<td>UX 8x50</td>
<td>50</td>
<td>0.11 (0.11)(^{2})</td>
<td>0.30 (0.30)(^{2})</td>
<td></td>
</tr>
<tr>
<td>UX 10x60</td>
<td>60</td>
<td>0.16 (0.16)(^{2})</td>
<td>0.40 (0.40)(^{2})</td>
<td></td>
</tr>
</tbody>
</table>

\(^{1}\) The partial safety factors of the resistances and a partial safety factor of \(\gamma_F = 1.4\), which are regulated in the approval, are considered.

\(^{2}\) Values in brackets apply for the approved shear load, see ETA-10/0383

\(^{3}\) Applies to tension load, shear load and diagonal pull under each angle

\(^{4}\) Contains safety factor 7

\(^{5}\) Load values apply when using with wood screws:

- UX 6 with screw diameter 5 mm
- UX 8 with screw diameter 5 mm
- UX 10 with screw diameter 5 mm

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**Load Values:**

- **M8, M10 and M12:**
  - Aircrete blocks: 75 kN
  - Non-cracked aircrete panels: 107 kN, 161 kN
  - Cracked aircrete panels: 107 kN, 161 kN

- **FIS E 11x85 M6, FIS E 11x85 M8:**
  - Aircrete blocks: 85 kN
  - Non-cracked aircrete panels: 107 kN, 161 kN
  - Cracked aircrete panels: 107 kN, 161 kN

**Aircrete Anchor FPX1 (ETA-12/0456):**

- Anchor type M6 - M12:
  - Aircrete blocks: 70 kN
  - Non-cracked aircrete panels: 120 kN

**Frame Fixing SXRL 10 (ETA-07/0121), SXRL 14 (ETA-14/0297):**

- Anchor type SXRL 10:
  - Aircrete blocks: 70 kN

**Aircrete Anchor GB with Fischer Safety Screw (Z-21.2-123):**

- Anchor type GB 8:
  - Aircrete blocks: 50 kN
  - Non-cracked aircrete panels: 89 kN

**Recommended Loads (3), (4), (5):**

- Anchor type UX 8x50:
  - Aircrete blocks: 50 kN
  - Non-cracked aircrete panels: 104 kN, 200 kN

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**Footnotes:**

3) Applies to tension load, shear load and diagonal pull under each angle

4) Contains safety factor 7

5) Load values apply when using with wood screws:

- UX 6 with screw diameter 5 mm
- UX 8 with screw diameter 5 mm
- UX 10 with screw diameter 5 mm
What is aircrete?

The building material "aircrete" is commonly known as aerated concrete. Aircrete is a solid building material with porous microstructures; the building material has a lot of pores (air pockets) and a low compressive strength. Aircrete has the disadvantage that it takes on moisture a lot quicker than it releases it; as such, external walls made from aircrete must always be covered with a layer of plaster or a different "skin".

As a result of the low compressive strength and the porous microstructures, special care should be taken when drilling holes and cleaning drill holes. Special anchors should be used for the best anchorage in aircrete, e.g. anchors with a long expansion part (SXRL 10 or 14) or anchors with interlocking or adhesive bonds (FPX-I or FIS V injection systems).

Our all-round service for you.

We are a reliable partner, one that will stand by your side and address your individual requirements with advice and action:

- Our products range from chemical systems and steel anchors to plastic anchors.
- Competence and innovation through own research and development.
- Global presence and active sales service in more than 100 countries.
- Qualified application-specific advice for economic installation solutions that are compliant with directives. If need be we are there for you – even at the construction site.
- Training measures (some with certification) at your premises or at the fischer ACADEMY.
- Construction and design software for challenging fixings.

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fischer fixing compass

Aircrete.
Our aircrete professionals safely ensure the very best hold.

Injection system FIS V
Our strongest solution for aircrete.

<table>
<thead>
<tr>
<th>Maximum load-bearing capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conical drill hole: 1.25 kN (125 kg)</td>
</tr>
<tr>
<td>Cylindrical drill hole: 1.07 kN (107 kg)</td>
</tr>
</tbody>
</table>

fischer high-performance mortar FIS V – bonds the anchor part to a conical or cylindrical drill hole in the aircrete and allows for heavy loads
- Highest loads in conical undercut drill holes – use fischer cone drill bit
- Reduced load-bearing capacity in cylindrical drill holes – use standard drill bit – push-through installation possible
- Non-bearing plaster layers can be easily bridged
- Approved for aircrete masonry
- Full load-bearing capacity after mortar curing time – HIGH SPEED mortar after just 30 minutes

Designs
System can be used with:
- Metric anchor rod FIS A for internal and external use
- Metric internal thread anchor FIS E for internal use with metric screws and anchor rods

Aircrete anchor FPX-I
The instantly and high load-bearing internal thread professional for aircrete.

| Maximum load-bearing capacity: 1.20 kN (120 kg) |

fischer aircrete anchor FPX-I with internal thread – ensures a strong hold thanks to the self-undercutting technology
- High loads thanks to the self-undercutting technology – the drill hole is created with a standard drill bit
- Simple and innovative screw installation with automatic setting control
- Approved for aircrete masonry and aircrete ceiling panels
- Can be loaded immediately after installation

Type
Aircrete anchor FPX-I with metric internal thread for indoor applications with metric screws and anchor rods

Type of installation
Aircrete anchor GB

The special anchor for aircrete with simple hammerset installation.

fischer aircrete GB – the special anchor geometry allows for a form locking and ideal pressure distribution.

- Medium loads through optimum pressure distribution in aircrete
- Simple hammerset installation with a hammer
- Spiral-shaped outer ribs, cut deeply into the aircrete
- Ideal for non-plastered surfaces
- Approval with the fischer safety screw for aircrete masonry and aircrete ceiling panels (only GB 14)
- Can be loaded immediately after installation

Maximum load-bearing capacity: 0.90 kN (90 kg)

Frame fixing SXRL

The simple solution for push-through installation in aircrete.

fischer frame fixing SXRL – the long expansion part offers an even load distribution in the aircrete and, therefore, a high load-bearing capacity

- High loads through long, powerful expansion part
- Pre-assembled set comprising fixing sleeve and safety screw
- Quick and easy push-through installation
- Approved for the anchorage of multiple fixings, e.g. façade sub-structures
- Can be loaded immediately after installation

Maximum load-bearing capacity: 1.07 kN (107 kg)

Universal fixing UX

The universal solution in aircrete.

fischer universal fixing UX – the universal expansion part ideally adapts to the building material for lightweight loads

- Good load-bearing capacity with low anchorage depth thanks to the universal expansion part
- Quick and easy installation
- Can be loaded immediately after installation

Maximum load-bearing capacity: 0.40 kN (40 kg)
The right fixing for every application.

<table>
<thead>
<tr>
<th>Designation</th>
<th>fischer</th>
<th>Injection system FIS V</th>
<th>fischer aircrete anchor FXP-I</th>
<th>fischer frame fixing SXRL</th>
<th>fischer aircrete anchor GB</th>
<th>fischer universal fixing UX</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>in undercut drill hole</td>
<td>in cylindrical drill hole</td>
<td>14</td>
<td>10</td>
<td>14</td>
<td>10</td>
</tr>
<tr>
<td>Possible max. load</td>
<td>1.25 kN (125 kg)</td>
<td>1.07 kN (107 kg)</td>
<td>1.20 kN (120 kg)</td>
<td>1.07 kN (107 kg)</td>
<td>0.89 kN (89 kg)</td>
<td>0.90 kN (90 kg)</td>
</tr>
<tr>
<td>Approval</td>
<td>Single point fixing</td>
<td>Single point fixing</td>
<td>Single point fixing</td>
<td>Multiple fixing</td>
<td>Multiple fixing</td>
<td>Single point fixing</td>
</tr>
<tr>
<td>Functionality</td>
<td>Undercut (bonded)</td>
<td>Blended</td>
<td>Undercut</td>
<td>Expansion</td>
<td>Expansion</td>
<td>Interlocking</td>
</tr>
<tr>
<td>Application Ceiling with approval</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>Yes, with GB 14 and fischer safety screw</td>
</tr>
<tr>
<td>Application outdoors</td>
<td>Yes, with anchor rod A4</td>
<td>Yes, with anchor rod A4</td>
<td>No</td>
<td>Yes, with screw A4</td>
<td>Yes, with screw A4</td>
<td>Yes, with screw A4</td>
</tr>
<tr>
<td>Pre-positioned installation</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Push-through installation</td>
<td>Yes</td>
<td>Yes, with annular gap filling</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Offset installation</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Type of connection</td>
<td>External and internal thread</td>
<td>External and internal thread</td>
<td>internal thread</td>
<td>Safety screw</td>
<td>Safety screw</td>
<td>Safety screw</td>
</tr>
<tr>
<td>Usage length (conditional)</td>
<td>Anchor rod length</td>
<td>Anchor rod length</td>
<td>Anchor rod length</td>
<td>up to 290 mm</td>
<td>up to 220 mm</td>
<td>up to 100 mm</td>
</tr>
<tr>
<td>Anchorage depth</td>
<td>75 mm and 95 mm</td>
<td>100 mm</td>
<td>70 mm</td>
<td>70 mm and 90 mm</td>
<td>70 mm and 90 mm</td>
<td>Depends on the anchor size</td>
</tr>
</tbody>
</table>

Please note

- Loading capacity
  - Note curing time: Note curing time
  - Instantly load-bearing: Instantly load-bearing
  - Instantly load-bearing: Instantly load-bearing
  - Instantly load-bearing: Instantly load-bearing

- Installation
  - Sophisticated installation, accessories like cone bolt required
  - Sophisticated installation, accessories required
  - Simple installation with setting control
  - Simple installation with setting control
  - Simple installation with setting control
  - Simple installation with setting control

- Installation through tiles
  - Yes | Yes | Yes, if the tiles are drilled out larger | Yes | Yes | No | No |

- Removal
  - Surface flush removal with internal thread anchor
  - Surface flush removal with internal thread anchor
  - Surface flush removal
  - Surface flush removal
  - Surface flush removal
  - Surface flush removal

Application examples

- Canopies
- Awnings
- Canopy tours on the wall
- Conder arms
- Suspended ceilings
- Pipelines
- on the ceiling
- Handrails
- Wall cabinets
- Wood façade sub-structures
- Aluminium façade substructures
- Wall cabinets
- Fixing of wooden beams
- Pipe fixings
- Shelf fixings
- Tracks
- Screen mountings
- Suspended ceilings
- Lighting, lamps
- Small shelves
- Towel rails
- Mirror cabinets

Please note:

- Loading capacity
  - Note curing time
  - Instantly load-bearing
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