The new modular design program includes: Engineering software and application modules. 
- The software is based on international design standards (ETAG 001 and EC2, such as EC1, EC3 and EC5), including the national application documents. All common force and measurement units are available.
- Incorrect input will be recognized and the software gives tips to get a correct result. This ensures a safe and reliable design every time.
- The graphical display can easily be rotated through 360°, panned, tilted or zoomed as required.
- The 3D display gives a detailed and realistic image.
- The “live update” feature helps to keep the program up to date ensuring you are always working with the latest version.
- Free download and updates at www.fischer.de/fixperience-en

We are available to you at any time as a reliable partner to offer technical support and advice:
- Competence and innovation through own research, development and production.
- Global presence and active sales service in over 100 countries.
- Qualified technical consulting for economical and compliant fastening solutions. Also on-site at the construction site if requested.
- Training sessions, some with accreditation, at your premises or at the fischer ACADEMY.
- Free Design and construction software for demanding applications.

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Note: The colour design of channels and construction elements according to RAL colours through powder coating is available on request.
Planing of factories today

- Today in the planning of factories, manufacturing plants or similar buildings, the life cycle of the structure is taken into consideration at the planning process. In industrial manufacturing, this trend is moving towards shorter production cycles. Flexible and convertible installations are necessary in the factory of the future.
- In general, the ability of a building to be easily converted by optimizing business processes and factory equipment is the recipe for success. An investment in new buildings is more likely to be made if the life expectancy is high and the building complies with the requirements for the expected life cycle.

The fischer installation grid allows for problem free modernization and repurposing. This also supports concepts such as Plug & Produce, Synergistic Factory Planning and In-Service Factory Planning.
- Due to its versatility and architectural orientation, the installation grid is an effective and flexible solution.

Calculation of probability for a manufacturing plant throughout the life cycle

### Calculation of probability for a manufacturing plant throughout the life cycle

**Ceiling installation contra installation grid**

<table>
<thead>
<tr>
<th>Number of changes of all connected machines / workstations</th>
<th>Ceiling installation</th>
<th>Installation grid</th>
<th>Break even point</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1,76</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>3</td>
<td></td>
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<td></td>
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<td>4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Criteria for the installation shown in the diagram:**

- Distance for the grid 2.5 x 2.5 m
- 8 medium pipes per machine/workstation
- Location of the installation grid between halfway up. Floor and ceiling (i.e., the vertical connection height for ceiling installations is twice as high as for the installation grid)

Possible installations to service the production level:

- Pipes for ventilation, heating, cooling and water
- Conductor lines and cable trays for electric cables, data lines, etc.
- Media pipelines for machines or workstations:
  - Compressed air
  - Technical gases
  - Exhaust air
  - Fluids
- Lamps, light bands
- Overhead heating
- Noise reduction elements
- Suspended ceilings

Flexible support structure for utilities distribution.

### Flexible support structure for utilities distribution

- The fischer installation grid is an effective and flexible solution. Due to its versatility and architectural orientation, the installation grid is an effective and flexible solution.

### Possible installations to service the production level

- Floor and ceiling (i.e., the vertical connection height for ceiling installations is twice as high as for the installation grid)

### Reduced transformation process cost

- This means that despite the higher investment for the fischer installation grid, the transformation process cost are significantly reduced, and thus the total cost over the life cycle.

### Other advantages of the installation grid are:

- Energy efficiency through shorter paths and hydraulic optimization with ring supplies in all media by its proximity to the workstation.
- High flexibility and adaptability in the production area for the workstations and machine locations.
- Shortest planning and transformation time by standardized arrangement of the installations.
- Clear times and cost for retrofit installation of the grid through modular construction.

All round availability for the installation of service and supply.

### All round availability for the installation of service and supply

- The re-equipment over the life cycle is an indicator of the efficiency of the installation grid (s. diagram left). Even with less than two position changes of the connected machines / workstations, the installation grid shows its superiority.

- Energy efficiency through shorter paths and hydraulic optimization with ring supplies in all media by its proximity to the workstation.
- High flexibility and adaptability in the production area for the workstations and machine locations.
- Shortest planning and transformation time by standardized arrangement of the installations.
- Clear times and cost for retrofit installation of the grid through modular construction.

### Selection of grid size based on the surface loads

<table>
<thead>
<tr>
<th>Surface load [kN/m²]</th>
<th>Grid size</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.5</td>
<td>1.5</td>
</tr>
<tr>
<td>0.6</td>
<td>1.75</td>
</tr>
<tr>
<td>0.7</td>
<td>2.25</td>
</tr>
<tr>
<td>0.8</td>
<td>2.5</td>
</tr>
<tr>
<td>0.9</td>
<td>2.75</td>
</tr>
<tr>
<td>1.0</td>
<td>3.00</td>
</tr>
</tbody>
</table>

The point load on the installation grid is limited to max. 0.4 kN per mounting point (with cross connector FVS).