DIN 1988 T3 / MAXIMUM FLOW RATE / 
PRINCIPLES OF CALCULATION / CALCULATION GUIDE / SOFTWARE

DIN EN 806 PART 3 AND DIN 1988 PART 300

DIN EN 806 part 3 and DIN 1988 part 300 (Technical Rules for Potable Water Installations) specifies the calculation principles for the determining of the pipe diameter.

The determining of the pipe diameter is based on the calculation of the pressure loss in pipes.

Beside the diameter the pressure loss depends on the length of the pipe, the pipe material and on the flow rate, dependent on the quantity and size of the water points to which the pipe is connected.

The basis for determining the maximum flow rate should be calculated on the desired flow rate of each water point. The simultaneous use resp. the peak pressure of flow of an installation part has to be determined by taking the calculation values from DIN 1988 T 3 as a basis.

Maximum flow rate

A further criterion for the selection of the pipe diameter is the maximum permissible flow rate. Because of sonic reasons and for the limitation of water hammer, the calculated flow rate may not exceed the values of the table below.

DIN EN 806 - part 3
Collective supply pipes, riser pipes, storey pipes max. 2.0 m/s;
Individual supply pipes max. 4.0 m/s
NOTE: National regulations may require lower flow rates to avoid water hammers and noises.

DIN1988 part 300 table 5 – Maximum calculated flow rate in case of the related peak flow

<table>
<thead>
<tr>
<th>Section of the installation</th>
<th>max. calculated flow rate at run (m/s)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>&lt; 15 min.</td>
</tr>
<tr>
<td>Connecting pipes (Building connection)</td>
<td>2</td>
</tr>
</tbody>
</table>

**Supply pipelines:**

| Sections with resistance coefficients ζ < 2.5 for individual resistances a | 5 | 2 |
| Sections with resistance coefficients ζ ≥ 2.5 for individual resistances b | 2.5 | 2 |

**Principles of calculation**

To determine the pipe diameter in potable water networks of buildings numerous principles of calculation are necessary. The revised version of DIN 1988 provides a simplified and differentiated method of calculation.

The simplified method is suitable for clearly arranged pipes i.e. in residential buildings. The differentiated method includes all pipes and local resistances and offers the highest accuracy as well as the most accurate approximation of real operating conditions. The determining of the pipe diameter requires the following data:

- Minimum gauge pressure of supply or pressure in flow direction behind pressure reducing or boosting valve
- Head variations
- Pressure loss due to apparatus i.e. watermeter, filter, softening installations etc.
- Minimum flow pressure of the water point applied
- Pipe friction factor of the used pipe material
- Coefficients of loss for fittings and pipe connections

**Calculation guide / Software**

We provide data sets for the following calculation programmes:

- MagiCAD
- liNear

Further data set formats can also be downloaded from our homepage:

- RFA
- STP
- IPT
- DWG

For any questions, please contact our aquatherm information service:
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