

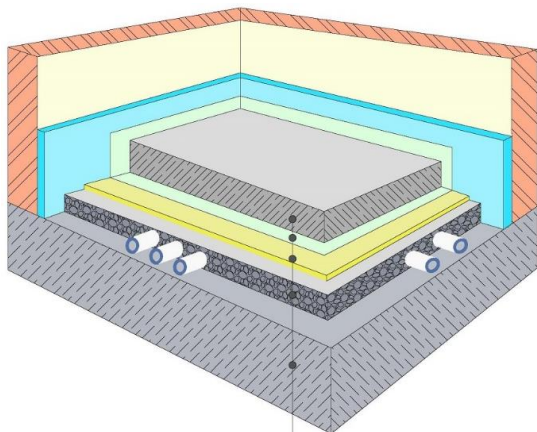
## FLOOR WITH INSULATION AGAINST STEP NOISE

### Modification of the foam concrete: FC 300 to FC 500

Data sheet no. 412

**Usage:** The floor is designed for the **interiors of civil buildings** where the absorption of the step noise and airborne noise is required, i.e. particularly in multi-storey buildings. The levelling layer from foam concrete eliminates the need to calculate the over-consumption of the screeding material resulting from the uneven underlay and minimizes the cracks in the screeding resulting from its uneven thickness. The improvement index of the step sound-proof properties of the floor and of the airborne noise depending on the type of the wear layer, type and thickness of the used insulation of the step noise and on the supporting ceiling structure.

**Example of the layer composition:**



- screeding in the thicknesses according to the building project
- separating layer
- acoustic insulation. in Fig. - thin-layered, non-absorbent
- FC 300 ÷ FC 500 layer covers the installation tubes for the distribution systems of water and electricity as well as other irregularities of the ceiling
- supporting ceiling structure
- floor layers separated from the masonry by a flexible non-absorbent material - EPS, foam PE, etc.

#### Description of the layers:

**Wear layer:** slabs, tiles, carpet, PVC. In case of the free laying of this layer on the screeding, it is recommended to apply a dust-removing paint on the screeding surface.

#### **Screeding - spread layer:**

- processed manually, ideally from prefabricated cement mixtures, with strength properties for placement on a compressible underlay with a thickness according to the project and technical documentation of the manufacturer of the screeding
- self-levelling poured screeding, anhydrite or cement, with strength properties for placement on a compressible underlay with a thickness according to the project and technical documentation of the manufacturer of the screeding

**Separating layer:** PE foil with the thickness of 0.1 mm.

**Soundproofing insulation layer:** foam PE, mineral-fibre board, acoustic EPS

**Separating layer:** PE foil with the thickness of 0.1 mm, to be used if the acoustic insulation is made of a mineral-fibre board

**Levelling layer:** foam concrete FC 300 to 500, see the technical document no. 301, with the thickness at least up to the upper part of the installation tubes

**Supporting ceiling structure:** reinforced concrete, ceramic ceiling, wooden ceiling with sufficient bearing capacity - must be assessed by a structural designer

**Masonry:** plastered and the surface of the plaster is smoothed, contact of the support board and the masonry - linear

**Separation of the floor from the masonry:** flexible non-absorbent strip - foam PE, EPS, thickness of at least 5 mm, with foldable foil

#### Related standards:

STN EN 1991-1-1	Loading of building structures
STN EN 1992-1-1+A1	Design of concrete structures
STN EN ISO 717-2	Acoustics - assessment of the sound insulation of building structures and buildings - standard requirements for step soundproof properties of horizontal dividing structures in residential and civil buildings.

#### Preparation:

**Wear layer:** It is necessary to observe the applicable application regulations of the supplier. If hard material is used, it is necessary to ensure that it does not directly touch the vertical structure or the floor passage at any point.

**Screeding:** Apply immediately after the mounting of the soundproofing insulation layer, it is necessary to observe the relevant application regulation of the manufacturer. It is necessary to permanently separate the screeding from the perimeter wall and to separate it from the screeding in the adjacent room at the entrance to the room. The resulting gaps must be filled with a permanently flexible material.

**Separating layer:** Apply immediately after the mounting of the acoustic insulation.

**Soundproofing insulation layer:** Apply immediately after achieving the trafficable strength of the foam concrete FC 300 to 500, this applies when there is no vapour barrier under the FC.

**Separating layer:** In case that there is no vapour barrier under the FC, apply it immediately after achieving the trafficable strength of the foam concrete FC; in case there is a vapour barrier under the FC, leave the FC layer to achieve natural moisture with the contribution of draft-free sudden ventilation

**Layer of FC 300 to FC 500 foam concrete:** It is necessary to observe the General conditions for the production and processing of light concrete and the manufacturing procedures for foam concrete FC 300 to FC 500.

**Designing:** Always place the floor heating elements into the screeding layer, never into the levelling layer of the FC.

The composition of the floor, including the thickness of the particular layers, should be part of the construction project. Further details regarding the levelling layer made of FC 300 to FC 500 can be obtained at the company iwtech s.r.o., on request.

Validity: from 9 January 2019