

Installation of an aqua-step floor in combination with underfloor heating.

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Our aqua-step products can perfectly be used in combination with “traditional” underfloor heating on low temperature, it is: underfloor heating systems on basis of warm water in tubes or electrical resistances EMBEDDED IN the concrete. Of course the general installation instructions for underfloor heating stay valid. Always consult your installer/supplier of the underfloor heating system. The general installation instructions for an aqua-step floor without underfloor heating also apply of course.

The floorcovering must be laid FLOATING.

The maximum allowed heat resistance (R) of a floor covering in combination with underfloor heating is 0.15 m²K/W (EN 4725).

The heat resistance R of an aqua-step 8mm floor is 0.081m²K/W.

It is recommended to use an underlay from which the heat resistance is not too high, because the heat resistance of the underlay has to be added to this figure and care must be taken to not exceed the 0.15m²K/W in total.

The heat resistance R of the 2mm Aquabase underlay on roll is 0.059m²K/W and the one of the 3mm Aquabase underlay in sheets is 0.095m²K/W.

Before installation

- The type of screed and the installation method, combined with the underfloor heating, must comply with the instructions of the suppliers of the screed and the underfloor heating system.
- To obtain a homogeneous heat distribution across the entire floor, the distance between the heating elements must not be greater than 30 cm.
- The depth of the elements is determined by the fitter of the underfloor heating, but must be minimum 3cm.
- The underfloor heating system must be tested before the installation of the aqua-step floor according to the directives of the installer.
- A heating protocol should be presented; ask for it if necessary.
- Switch the heating off completely until the floor temperature is under 18°C before you start laying the aqua-step floor.

Installation

- Make sure you leave the necessary expansion joints between the aqua-step floor and the walls and any other obstacles.
- NEVER lay lengths/widths of more than 15 m.

After installation

- AFTER laying your floor, wait minimum for another 24 hours and afterwards restart the heating gradually (5°C per day).
- The maximum allowed CONTACT temperature is 28°C. The maximum warm water temperature at the boiler output is 50°C.
- ALWAYS adapt the temperature GRADUALLY at the start and end of a heating period.
- Always avoid heat accumulation by carpets or rugs or by leaving insufficient space between furniture and the floor.

Floor cooling

More and more systems that combine heating and cooling are being installed in homes. A heat resistance below or equal to 0.09m²K/W is normally recommended in case of floor cooling. In some cases you need to take into account a certain loss of capacity, depending on the underlay used.

Formation of condensation can only be avoided if the system is correctly used. An advanced control system to prevent condensation must be installed. Condensation appears when the temperature falls below the saturation point. The saturation point is the level at which the air is saturated and can no longer absorb humidity. The saturation point depends on the temperature and the relative air humidity. The risk of condensation makes it impossible to work with infinite low temperatures. The temperature of the cooling water can only be some degrees lower than the temperature in the room (max 5°C) and must be controlled adequately with a security system against condensation. The choice of the control system is very important. An effective control system calculates the saturation point (= 100% humidity) and stops the installation before the saturation point is reached (for example at 95% relative humidity). This can be done by stopping the cooling system or by closing the primary cold water supply in the installation. A control system that only intervenes at the beginning of condensation does not fulfill the conditions.

If however condensation is formed, please note our AQUA-STEP floors are anyhow perfectly moisture resistant!

Heating films

Heating films or other systems ON the screed or wooden subfloor are not always suitable.

An underlay must be used to level the floor, to insulate it and in particular to embed the film elements and electrical connectors. The following structure is usually applied: first the underlay, then the heating film and then the floorcovering.

For these systems the conditions that have to be fulfilled are the following: the heat must be distributed homogeneously across the entire floor to prevent any cold or warm zones; the heat must radiate up and not down; the maximum contact temperature is not more than 28°C and the electrical connectors between the panels are thin enough to be sunk in the underlay mat while maintaining their strength and electrical safety, also in the event of possible condensation or a leak.

A second type of heating systems for renovation is a system with warm water pipes or electrical resistances embedded in frames. These are usually polystyrene panels which may be combined with metal plates. We consider these systems to be more reliable because they ensure a more homogeneous distribution of heat, provide heat insulation under the underfloor heating, have good contact and provide a stable subfloor under the floorcovering. The above mentioned notes still apply but we believe they are easier to fulfill.

All these aspects must be discussed with the distributor/installer of the heating system to ensure that he also takes his responsibility in this matter.

We hope the information about is sufficient. In case of further questions or problems, please do not hesitate to contact our technical department.