QUICK·STEP
FLOOR DESIGNERS

INSTALLING QUICK-STEP FLOORING ON FLOORHEATING/FLOORCOOLING

GENERAL

Quick-Step Floors can be used in conjunction with "low temperature" floor heating. Your Quick-Step floor can be installed on:

Hot water systems*:
- Wet systems (= embedded in the subfloor)
- Dry systems

Electrical Systems :
- Wet systems (= embedded in the subfloor)
- Dry systems

"Low temperature" floor heating can be defined as a floor heating system where the common floor temperature (= surface temperature of your installed Quick-Step floor) is maximum 27°C. In new or renovated, good insulated buildings, this temperature will be lower in most cases.

The floor heating must be installed in accordance with the supplier's instructions and the generally accepted instructions and rules. The below detailed conditions must be followed. Of course, the general laying guidelines for your Quick-Step Floor still fully apply. The use of the correct Quick-Step accessories is also essential. The use of unappropriated accessories (eg. underlays) can be harmful to your floor.

* The heat source for hot water systems can be eather a traditional boiler, heat pump or an aerothermal system.

PREPARATION

The floor base must be sufficiently DRY when laying the floor covering.

Wet heating systems

Below table gives an overview of the maximum moisture content of your base floor.

	With Floorheating	Without Floorheating
Cement Screed	1,5 % CM (60% RH)	2,5 % CM (75% RH)
Anhydrite Screed**	0,3 % CM (40% RH)	0,5 % CM (50% RH)

** For certain anhydrite screeds, the "milk-skin" must be removed mechanically (=sanding & vacuum cleaning) before your Quick-Step Wood Floor or Quick-Step Vinyl floor is glued to ensure a good adhesion. Please inquire your supplier.

The prescribed moisture content will only be achieved by turning on the heating on beforehand. In the case of a new screed, you must wait at least 21 days between spreading the screed/floor-finish and starting the heating. With newly-spread screed/floor-finish, follow the guidelines of your installer. It should be possible to present a heating record; ask for it if necessary.

Dry heating systems

When installing dry heating systems, it's mandatory to have a vapor barrier between your Quick-Step Floor and your heating system. When installing dry heating systems on ground floor, you'll need an additional vapor barrier between your subfloor and your heating system. In case of dry heating systems, the moisture content of your subfloor can be the same as in a situation without floor heating.

	With Floorheating	Without Floorheating
Cement Screed	2,5 % CM (60% RH)	2,5 % CM (75% RH)
Anhydrite Screed**	0,5 % CM (40% RH)	0,5 % CM (50% RH)

HEATING GUIDELINES

Wet heating systems

Start the floor heating at least two weeks before laying your Quick-Step Floor. In case of hot water systems, raise the water temperature in the boiler gradually by no more than 5°C per day. In case of a start-up for electrical systems, raise the floor temperature by no more than 5°C per 24h. In both hot water and electrical systems, if you can leave the heating on for longer, this would certainly be better.

When installing a wooden floor or a laminate floor, turn off the heating completely at least 24hrs before laying your floor. When installing a vinyl floor, it is necessary to make sure that the ambient temperature is > 18°C. In that case, turn off the heating completely at least 24hrs before laying your floor. If the ambient temperature is lower than 18°C, you'll need to switch on your floor heating to be able to reach the 18°C limit.

AFTER laying your floor, you must wait AT LEAST 48 hours before restarting the heating, gradually (5°C per day).

Dry heating systems

Dry heating systems are not embedded in any screed, which means they don't need to have a start-up procedure before installing your Quick-Step Floor.

General points of attention

- The maximum permitted surface temperature on top of the Quick-Step Floor is 27°C.
- ALWAYS change the temperature GRADUALLY at the start and end of a heating period.
- Daily changes of floor temperature are allowed as long as the maximum floor temperature stays within limits
- The relative ambient air humidity must be kept within the limits mentioned in the general installation instructions.
- Always avoid heat accumulation by carpets or rugs or by leaving insufficient space between furniture and the floor. Open joints may appear during the heating season.

INSTALLATION

In case of a GLUED installation

(only Quick-Step Wood Flooring and glue down Vinyl Flooring)

When using glue, we advise to install your Quick-Step Floor with suitable wood or vinyl glue. We refer to the specific laying instructions for laying with glue, which you can find in the general laying instructions. This method gives the highest degree of heat transfer and thus ensures the optimum efficiency of your heating system. On the other hand, there is no vapor protection and there is a risk of condensation when there are excessively rapid and excessively large temperature swings. Account should also be taken of small open joints that might appear during the heating season.

When using "wet system" floor heating, the screed will have expansion joints. In a glue down installation it is also necessary to copy the expansion joints of the subfloor to the floor you want to install.

In case of a FLOATING installation

(not possible for glue down Vinyl flooring)

The Quick-Step Floor can also be installed, floating on top of a Quick-Step underlay. The most suitable underlay between your heating system and your Quick-Step floor, is the underlay with the lowest thermal resistance. However, the heat output of the heating system with floating installation is smaller and the yield is slightly lower compared to a glued installation. On the other hand, an underlay with integrated vapor barrier can stop rising damp or condensation. An ideal installation has a total R-value that doesn't exceed 0,15 m^2K/W.

The coefficient of thermal conductivity λ (W / mK) of the various products can be easily calculated using the following formula:

$$\lambda = d / R$$

λ = heat transfer coefficient / thermal conductivity = material constant (in W / mK)
d = thickness of the material (in m)
R = thermal resistance (in m^2 K / W)

Table R values (m² K/W) for Quick-Step ***Wood Flooring***

		No underlay	Basic	Basic Plus	Unisound	Silent Walk	Transit Sound	Thermo Level
		R- VALUE UNDERLAY M² K/W						
		-	0,075	0,066	0,049	0,01	0,045	0,143
Thickness (mm)	Core Material	TOTAL R (M² K/W)						
13,5	Wood	0,14	0,215	0,206	0,189	0,150	0,185	0,283
13	HDF	0,11	0,185	0,176	0,159	0,120	0,155	0,253

Quick-Step Wood Flooring with a toplayer made from Ash is NOT suitable for laying on floor heating.[2]

Table R values (m² K/W) for Quick-Step ***Laminate Flooring***

	No underlay	Basic	Basic Plus	Unisound	Silent Walk	Transit Sound	Thermo Level
	R- VALUE UNDERLAY M² K/W						
	-	0,075	0,066	0,049	0,01	0,045	0,143
Thickness (mm)	TOTAL R (M² K/W)						
7	0,051	0,126	0,117	0,100	0,061	0,096	0,194
8	0,055	0,130	0,121	0,104	0,065	0,100	0,198
9	0,059	0,134	0,125	0,108	0,069	0,104	0,202
9,5	0,061	0,136	0,127	0,110	0,071	0,106	0,204
12	0,0717	0,147	0,138	0,121	0,082	0,117	0,215

*Table R values (m^2 K/W) for Quick-Step **Vinyl Flooring***

	No underlay	Comfort	Heat	Transit
	R- VALUE UNDERLAY M² K/W			
		0,02	0,01	0,045
TYPE OF VINYL	TOTAL R (M² K/W)			
2,5 mm Glue down Vinyl Flex	0,015			
4,5 mm Vinyl Flex	0,02	0,04	0,03	0,065
4 mm Rigid Click	0,013	0,033	0,023	0,058
4+1 mm Alpha Vinyl Pad*	0,033			
5 mm Rigid Click	0,015	0,035	0,025	0,06
5+1 mm Alpha Vinyl Pad*	0,040			

* If Alpha Vinyl Pad, then no need for a separate underlay!

General Remark

All mentioned R-values are only valid for Quick-Step Floors which are immediately followed by their underlay. In case of additional intermediate layers on top of the heating system, these R-values need to be taken into account too.

QUICK·STEP
FLOOR DESIGNERS

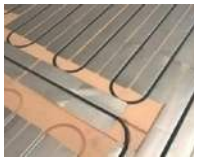
HOT WATER SYSTEM - WET SYSTEMS

1

2

HOT WATER SYSTEM - DRY SYSTEMS

3



4

ELETRICAL SYSTEM - WET SYSTEMS

5

6

ELETRICAL SYSTEM - DRY SYSTEMS

7

8

9

10

- ✓ Even heat distribution is required
- ✓ Maximum floor temperature of 27°C
- ✓ Surfaces with floorheating and surfaces without floorheating must be decoupled with an intermediate expansion joint and profile
- ✓ Surfaces with different floor temperatures (eg. zones with separate controllers,…) must be decoupled with an intermediate expansion joint and profile
- ✓ Always ensure a vapour barrier in case of risk on raising moisture
- ✓ Ensure a correct start-up and shut-down procedure for your system
- ✓ Ensure air flow between large objects and your heated floor to prevent "overheating" damage
- ✓ Follow the general subfloor preparation requirements to decide if you can work without underlay for LVT

	LVT			LAMINATE	MULTILAYER WOOD	
	4-6mm Rigid Click*	4-4,5mm click	2,5mm glued	Floating	Floating	Glued
1	Suitable with standard Floor Heating instructions. Minimum thickness of screed on top of the tubes required (check local regulations)					
2	Suitable with a screed of minimal 20mm on top. Heat close to flooring.					
3	Not suitable in case of immediate contact. Suitable if first apply an intermediate firm base layer (eg. OSB with T&G glued, Jumpax, connected gypsum or cement boards, ...) of a at least 7 mm thickness which creates one stable base. Build-up: Heating system + intermediate firm base layer + (underlay if necessary for flatness*) + LVT			Heating close to flooring Worse distribution of heat! Only low temperature accepted Insulate BELOW heating! Use Silentwalk		No reason to do this but suitable if first apply intermediate firm base layer (eg. OSB with T&G glued, Jumpax, connected gypsum or cement boards, ...) of at least 12mm thickness which creates one stable base to glue down. Attention: Due to the intermediate firm base, the R-value of the build-up will be above the advised limit.
4	Suitable with standard Floor Heating instructions. Keep R value top as low as possible.					
5	Flexible levelling compound Critical, depends on thickness cement on top (heat distribution). Max 80 W/m².			Flexible levelling compound Suitable. Max 140 W/m².		
6	Flexible levelling compound Critical, depends on thickness cement on top (heat distribution). Max 80 W/m².			Flexible levelling compound Suitable. Max 140 W/m².		
7	Suitable with intermediate firm base layer (eg. OSB with T&G glued, Jumpax, connected gypsum or cement boards, ...) of a at least 7 mm thickness which creates one stable base. Max 100 W/m². Build-up: Insulating underlay of min. 6mm + Heating film + PE foil + intermediate firm base layer + (underlay if necessary for flatness*) + LVT			Suitable. Build-up: Insulating underlay of min. 6mm + Heating film + PE foil + Laminate Floor. Max 140 W/m².		No reason to do this but suitable with intermediate firm base layer (eg. OSB with T&G glued, Jumpax, connected gypsum or cement boards, ...) of at least 12mm thickness which creates one stable base to glue down.Max 140 W/m². Build-up: Insulating underlay of min. 6mm + Heating film + PE foil + intermediate firm base layer + Wood Flooring. Attention: Due to the intermediate firm base, the R-value of the build-up will be above the advised limit.
8	Suitable with intermediate firm base layer(eg. OSB with T&G glued, Jumpax, connected gypsum or cement boards, ...) of a at least 7 mm thickness which creates one stable base. Max 100 W/m² . Build-up: Heating system + intermediate firm base layer + PE foil + (underlay if necessary for flatness*) + LVT			Suitable with intermediate firm base layer (eg. OSB with T&G glued, Jumpax, gypsum, cement board...). Max 140 W/m². Attention: Due to the intermediate firm base, the R-value of the build-up will be above the advised limit.		
9	Not Suitable			Only suitable IF cable thickness is max 3mm, Max 140 W/m², Suitable underlay underneath heating system to embed heating cables (eg. Thermolevel)		Suitable with intermediate firm base layer (eg. OSB with T&G glued, Jumpax, connected gypsum or cement boards, ...) of at least 12mm thickness which creates one stable base to glue down Max 140 W/m². Build-up: Insulating underlay of min. 5mm + Heating system + intermediate firm base layer + Wood floor. Attention: Due to the intermediate firm base, the R-value of the build-up will be above the advised limit.
10	Not Suitable					

* If Alpha Vinyl Pad, then no need for a separate underlay!

FLOOR COOLING

Increasing numbers of homes now have systems for both heating and cooling. A combination of heating in winter and cooling in summer can for technical and physical reasons be problematic in combination with organic floorings in general and with parquet in particular.

If floor cooling would be applied, the main attention point is that an advanced regulation and security system is used to prevent internal condensation (dew point regulation). To prevent damage to the floor, the incoming temperature of the cooling water must NOT be lowered without limit and it must never fall below the dew point temperature. Lower temperatures lead to condensation in the floor and can cause damage to the Quick-Step Floor, such as cupping, distortions, swelling and joints opening.

A proper safety system includes automatic sensors that detect when the dew point (= start of condensation) is reached below or in the floor and then switch off the cooling.

As a general guideline, the following suggestion can be followed:

Room thermostats must never be set to a temperature that is 5°C lower than the room temperature. So, when the room temperature is 32°C, the room thermostat should not be lower than 27°C. The cooling circuit must be provided with a regulator that prevents the cooling fluid from falling lower than 18 to 22°C. This depends on the climate zone in which the floor has been laid. In zones with a high relative humidity, the minimum is 22°C; with average humidity and temperature, the temperature can drop to 18°C. Failure to follow these instructions renders the Quick-Step warranty no longer valid.

For floor cooling, a heat-resistance of < 0.15m²K/W is prescribed. In case the total Heat resistance of your Quick-Step Floor and your Quick-Step underlay is higher, account should be taken here of a certain loss of capacity.

FINAL NOTE

All the above mentioned aspects must be examined by the distributor/installer of the heating system. It is their responsibility to ensure that the UFH system has been installed correctly and works in unity with the aforementioned guidelines which must be followed in full.

We trust that the foregoing will provide you with sufficient information. Should you have any further questions or problems, please do not hesitate to contact our technical department.

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