

Under-floor heating guidelines:

Unilin floors can be used in conjunction with “low temperature” floor heating.

Your 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 floor temperature (contact temperature of your installed floor) is maximum 27°C.

The floor heating must be installed in accordance with the supplier’s instructions and the generally accepted instructions / rules. The below detailed conditions must be followed. The use of unappropriated accessories (eg. underlays) can be harmful to your floor.

The subfloor on which the flooring will be installed should be level within 3mm / 2m, unevenness above this should be prepared with a suitable compound and allowed to dry to a stable level, see below. Failure to do this will result in hollow spaces and peaks under the flooring resulting in Hot / Cold spots.

The system must be turned off completely before laying the floor; the ideal floor temperature is 18°C.

The prescribed moisture content will only be achieved by commissioning 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.

## **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 sub floor.

	With floor heating	Without floor heating
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)**

### **Dry heating systems**

When installing dry heating systems, it's mandatory to have a vapor barrier between your 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 floor heating	Without floor heating
Cement screed	2,5 % CM (60% RH)	2,5 % CM (75% RH)
Anhydrite screed**	0,5 % CM (50% RH)	0,5 % CM (50% RH)

## **HEATING GUIDELINES**

### **Wet heating systems**

Start the floor heating at least two weeks before laying your 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.

Prior to installing 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 floor.

### **General points of attention**

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.

An ideal installation has a total R-value that doesn't exceed 0,15 m<sup>2</sup>K/W.

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

$$\lambda = d / R$$

$\lambda$  = heat transfer coefficient / thermal conductivity = material constant (in W / mK)

d = thickness of the material (in m)

R = thermal resistance (in m<sup>2</sup> K / W)

## **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.

## **Electric “ON FLOOR” Systems**

Heating films Heating films or other “new” systems ON the screed or wooden sub-floor are not always suitable. Further guidelines for these applications can be found below.

Insulation provided by the floor heating manufacturer must be used to insulate from below and embed the film elements / electrical connectors.

The following structure is usually applied:

1. Insulation
2. Heating film
3. Floor

For these systems, the conditions that have to be fulfilled are that the heat must be distributed homogeneously across the entire floor to prevent any cold or warm zones & that the heat radiates up and not down.

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.