



they don't cost the earth

North Energy Systems

Underfloor Heating *Common Questions & Answers*



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Below are answers to the commonest questions about under floor heating.

If you can not find answers to your question, please, do not hesitate to contact our team.

Warm water or electric floor heating?

With today's uncertainty about future energy policies and rising energy prices, warm water floor heating is always the safer option. Warm water systems allow you switch heat sources from say, gas or oil and utilise new technology, for instance "heat-pumps", pellet burners or even "solar" panel heating. These options simply are not available if direct acting electric heating is selected.

Are Heat Pumps and Under Floor Heating a good combination?

Heat Pumps efficiency (often expressed as COP units) increase by about 3 % per °C temperature reduction of the systems water temperature. LK Floor Heating systems typically maintains a system temperature 25 °C lower than a radiator system; that's efficiency improvement up to 75 %.

Can I install under floor heating in my bathroom or extension if I have radiators elsewhere?

If your property already has a hot water radiator system, LK Floor Heating can be simply installed in any additional rooms by the use a water temperature control unit (LK Shunt) designed for smaller floor areas. The LK Shunt controls and mixes the radiator water to lower temperatures to ensure floor surface temperatures do not rise too high. LK has a wide range of Shunt units specifically designed and manufactured by LK for different floor surfaces and structures.

- [LK Minishunt M60](#) for areas up to 60 m² at 50W/m² output (or 30 m² at 100W/m²)
- [LK Mini Circuit Valve M5](#) for areas up to 5 m²
- LK Boxed UFH packs for screeded floor areas up to 5 m², up to 10 m² and from 11 m² to 28 m²

When must I have an LK Shunt?

When you have a "mixed" system (i.e. both UFH and radiators) or your boiler produces temperatures above those required for the under floor heating, you must have a shunt. This is because under floor heating requires significantly lower temperatures than radiators and hot water supplied by many boilers. The Shunt unit mixes hot water (primary side) water with cooler return under floor heating water, so that the UFH gets the "right" temperature.



How large a floor surface area and how many metres of pipe should I lay per floor heating loop?

This depends on what type of floor (e.g. solid or suspended?) you have, which system is selected and what heat output is required to counter heat losses from the room or building. The “rules of thumb” below require the heat output not to exceed 75 W/m² (a safe maximum for wood floors and a happy medium for solid floors):

- Under Floor Heating pipe Ø16 mm: Maximum loop length approx. 85 m, serving an area about 16 m²
- Under Floor Heating pipe Ø12 mm: Maximum loop length approx. 65 m, serving an area about 9 m² to 10 m²

Can I install under floor heating myself?

If you are a “reasonable handy-man” you should be able to carry out many of the elements of UFH installation, although connection to an existing heating system must be performed by a professional. All electrical and gas installations must be carried out by properly qualified professionals.

Is water proofing required for shower rooms and bathrooms?

LK’s PE-Xa pipe will never be affected by wet or damp. However, you should always take advice from your tile or flooring supplier regarding suitable preparations for “wet areas”.

Night "set-back" and under floor heating?

Screeded (and concrete) floors, when heated by under floor heating, retain heat for many hours, which means night “set-back” is ineffectual. However, this is UFH’s great comfort strength; the floors relative slowness to cool down ensures that indoor comfort is not affected by rapid temperature falls from outdoors. If you are going away (e.g. on holiday) the “set-back” feature can be effectively used. Wood suspended and floating floors have much faster reaction times, so with these structures night “set-back” can be used. Many modern homes in Britain and Ireland incorporate wood suspended floors for the first floor and above, so “set-back” may be useful for the bedrooms.

Is it acceptable to run the under floor heating without room thermostats?

It is possible to run UFH without Room Thermostats. However, in the UK, **Part L Building Regulations** require the use of room thermostats. LK always recommend the use of room thermostats, as in these days of rising fuel costs and CO₂ levels, optimising comfort and minimising energy consumption are paramount.



Can tiles be laid on wood suspended [joisted] floors?

Yes, that is perfectly feasible. The installation instructions and our detailed installation methods contain the information you must follow for the differing kinds of floor construction and floor finish.

Will a wooden floor work on under floor heating?

Yes, it works perfectly well, although some precautions are necessary at design stage. Never lay very thick wooden flooring over UFH (contact LK if the selected floor is more than 25 mm thick). Wood provides relatively good insulation, thus thick floors require higher water temperatures to energise than thin floors. Most real wood floor manufactures limit the floor surface temperature to 27 °C, some to 26 °C, so it important that LK designers know these requirements at design stage. More information can be obtained from the Timber Research & Development Association, go to www.trada.co.uk

How thick must the insulation be?

For effective prevention of downward heat loss 25 mm of EPS70 insulation is adequate. However, in the UK Building Regulations are now very strict and all new build and the majority of building extensions must be properly insulated. Your architect or mechanical design consultant will have had to calculate insulation requirements for you building, so insulation will be an integral part of your building. All floors must have insulation below under floor heating for effective operation. Further information is available in our installation instructions.

Will under floor heating work on cellar floors?

Under floor heating will not solve any damp problems in cellars! The cellar floor (and walls) must be free of all damp ingress before any renovation is started. Always try to use insulation in the floor to prevent downward heat loss. It is advisable to use “permeable” building materials so that moisture is not trapped inside the construction. LK recommends that you consult an architect or structural engineer for full advice.

What is the build height of under floor heating?

In new build it is essentially zero, as the UFH is incorporated in the building structure at design stage. For renovations and refurbishments LK have systems with build heights of only 16 mm (5/8"), plus the floor.

When should I use aluminium heat diffusion plates?

When installing UFH in suspended (joisted), battened or floating floors, LK always recommends the use of aluminium Heat Diffusion Plates. These are the most effective way of efficiently spreading heat under the whole wood floor. Read more about LK HDP's in the fitting instructions.



What is the normal supply temperature for under floor heating?

The supply or flow temperatures for UFH depend on several factors: which system is selected, pipe centre pitch, floor structure, floor finish type and thickness and heat output (to counter heat losses). However, normal system temperatures range between 40 °C to 50 °C on the coldest days. Even temperatures of 32 °C to 35 °C are achievable with adequate insulation, particularly useful when linking to a Heat Pump or other low temperature heat source. **Remember, the better your building is insulated, the lower the heat (energy) is required to keep it warm.**

What is the highest permitted floor surface temperature?

First, do not confuse floor temperature with system temperature; a common misunderstanding that can lead to cold buildings. According to BS EN 1264, screeded and concrete floors in living spaces must not rise above 29 °C. Peripheral zones, for instance, 1 m wide zones along large glazed areas, may be heated to 35 °C (where the floor finish can accept higher temperatures). Wet areas (shower and bathrooms) are allowed a maximum of 33 °C. But do note, that in modern and well insulated buildings these higher temperatures should not be necessary. For wood floors, most manufacturers limit the maximum floor surface temperature to 27 °C, some to 26 °C; always take advice from LK and your flooring supplier.

Can the pipes freeze?

Yes; always take account of the risk of freezing. If there is risk, water mixed with Glycol must be used.

How long will the pipes last?

PE-X (cross linked polyethylene) has been used in heating and potable water systems since the early 1970's. The test regime requires the pipe to cope with 70 °C at 6 Bar for a minimum of 50 years without being affected. LK's PE-Xa are manufactured with a number of safety features well in excess of current test requirements. Further more, life expectancy is increased by the fact that UFH systems work at only 40 °C to 50 °C at about 1,5 Bar. LK's PE-Xa pipes will last the life time of your building (and more!).