

Underfloor Heating Explained

A simple guide to how it works, where it works best, and whether it may suit your project

Underfloor heating is a heating system that warms a room from the floor upwards, rather than relying on radiators fixed to the walls. It is popular in extensions, kitchens, bathrooms, open-plan spaces, renovations, and new build homes because it can provide an even spread of heat and free up wall space.

There are two main types of underfloor heating:

Electric underfloor heating

This uses electric cables or mats installed beneath the floor finish. It is often used in smaller spaces such as bathrooms, en-suites, and occasional-use rooms because it can be easier to install, especially where floor build-up needs to be kept to a minimum.

Water underfloor heating

This uses warm water flowing through pipes connected to a heat source such as a boiler or heat pump. It is commonly used in larger areas, whole-house systems, extensions, and new build projects. It usually has a higher installation cost than electric systems but can be more economical to run over larger areas.

How underfloor heating works

Unlike radiators, which heat a room from a smaller surface area at a higher temperature, underfloor heating spreads warmth across a much larger floor area. This can create a more even room temperature and reduce cold spots.

Typical floor surface temperatures are lower than radiator temperatures, but because the heated area is much larger, the room can still feel comfortable and efficient.

Main benefits

- More even heat distribution
- Clear wall space for furniture and layout flexibility
- Can work well with modern insulation standards
- Often a good match for heat pumps
- Comfortable underfoot, especially on tiled floors

Things to think about

Underfloor heating is not a one-size-fits-all solution. Performance depends on:

- The insulation levels of the property
- The floor construction
- The floor finish
- The room heat loss
- The available floor build-up
- The heat source being used

Poor insulation can seriously reduce system performance. In simple terms, if heat escapes quickly from the room, the system has to work much harder.



Best applications

Underfloor heating often works well in:

- New builds
- Extensions
- Kitchens
- Bathrooms
- Open-plan living areas
- Ground floors with solid subfloors
- Homes using a heat pump

It may be less straightforward in:

- Older properties with poor insulation
- Projects with very limited floor height
- Rooms with thick carpets or unsuitable floor finishes
- Areas where a fast heat-up and cool-down cycle is preferred

Final thought

Underfloor heating can be an excellent option, but it works best when it is properly matched to the property, floor build-up, insulation level, and heat source. The best result usually comes from looking at the whole room or whole house, not just the heating product on its own.

