

Floor insulation

Insulating the ground floor of your house is an effective way to keep your home warm and reduce your energy bills.

The main benefit of floor insulation is improved thermal comfort, helping to keep your home warmer and more comfortable. It can also reduce energy bills. Insulating a suspended timber floor could save between £45 and £175 a year, while insulating a solid floor could save £30 to £100 per year. Actual savings will depend on your property type (is it mid-terrace or detached) and how you heat your home – mains gas, electricity or oil.

Floor insulation is a significant undertaking. It should only be tackled by a professional builder or a very experienced DIY-er.

If you want to know about *draught-proofing* a floor by sealing the gaps between the floorboards and along the skirting, we have a page on our website. See www.cse.org.uk/advice/diy-draft-proofing.



Underfloor insulation being laid between the floor joists of a Victorian home

What kind of floor do you have?

Most homes in the UK have either a suspended timber floor (boards laid over wooden joists), or a solid concrete floor. These are insulated in different ways. But in each case, see the box below about your legal responsibilities.

Insulating a timber floor

Before you install additional insulation under your floor, make sure any damage from damp, rot or infestation is repaired, and make sure that the new insulation doesn't block any ventilation openings like air bricks.

Rigid insulation board or rolls of mineral fibre (like that used to insulate lofts) can be fitted between the flooring joists. If your floor is above an unheated cellar or basement, you will need to fit the insulation snugly between the joists and secure in place with netting if required. Plasterboard should then be fixed to the ceiling of the basement to provide fire resistance. For older, traditional properties,



Rigid insulation boards are laid between the floor joists



vapour open insulation materials such as sheep's wool and wood fibre boards are recommended.

If you have a suspended floor, with a small cavity below that is hard to access, you will normally have to take up the floorboards in order to fit the insulation. However, there are now companies such as Q-Bot that insulate such floors from below using a remote-control gadget that surveys the underside of the floorboards, before spraying on insulation.

When insulating a suspended timber floor, a vapour permeable airtightness layer should also be installed.

Insulating a concrete floor

Insulation can be added over an existing concrete slab to make a room warmer and more comfortable. This is normally in the form of high-performance insulation panels or boards that provide the best thermal performance at any given thickness.

Keeping the thickness of the insulation to a minimum will reduce the likelihood of having to make alterations to door openings, stairs and other fixtures as a result of the increase in floor height.

We recommend laying a damp-proof membrane underneath the insulation (which should overlap any damp-proof course in the external walls) and an airtightness layer and a vapour control layer should be installed on the warm side of the insulation. In almost all cases this is a job for a professional builder.

If an old concrete floor is being replaced, you will likely be required by Building Regulations to upgrade the insulation at the same time.

As a homeowner, it's your responsibility to adhere follow best-practice guidelines and comply with Building Regulations.

When it comes to adding extra insulation to your existing floor this may include:

- **Making sure that the room(s) still meet the minimum room heights.**
- **That you achieve minimum U-values (the standard measure of thermal performance).**
- **That you minimise the risk of fire**
- **That there is sufficient sub-floor ventilation.**

It is a good idea to get advice from a Building Control Officer at your local council before carrying out the work.

► This factsheet was updated in September 2026 ◀

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