

Floor insulation

Reduce heat loss from the ground up

Floor insulation is a simple and effective way to keep your home warm and reduce your energy bills.

Whether you have a suspended wooden floor or a concrete floor, improving your insulation could save you up to £70 per year. You may also be able to get financial help and other support to help you pay to have the insulation installed by a professional.

What kind of floor do you have?

Before you can decide on the best way to insulate, you need to know what type of floor you have. There are two ways to determine this:

- 1) If your house has a basement or cellar then you might be able to see wooden joists and the undersides of the floorboards from below. If this is the case then you have a suspended timber floor. It is also likely that you have this type of floor if there are ventilation bricks on the outside of your house that are below floor level.
- 2) If you cannot access the space underneath your floor, you'll need to lift a corner of the carpet and underlay.

Building Regulations

If you are the homeowner it's your responsibility to comply with Building Regulations. In the case of adding extra insulation to your existing floor these may include making sure that the rooms on your ground floor still meet the minimum room heights, that you achieve minimum U-values (the standard measure of thermal performance) and that you take steps to minimise the risk of fire. It is a good idea to get advice from a Building Control Officer at your local council before carrying out the work.



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

Insulating a timber floor

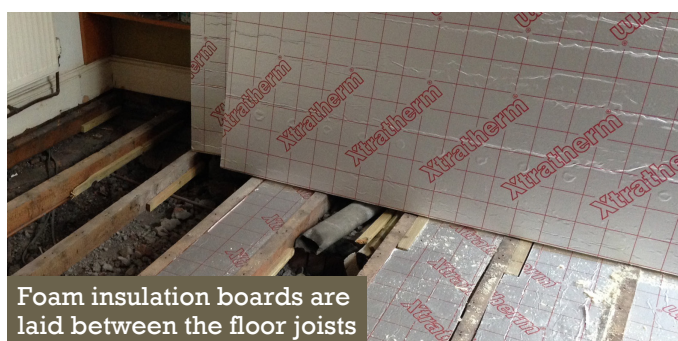
Before you install additional insulation under your floor make sure any damage from damp, rot or infestation is repaired, and make sure that the new insulation doesn't block any ventilation openings like air bricks.

Solid 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.

If you have a suspended floor, with a small cavity below that is hard to access, you would normally have to take up the floorboards in order to fit the insulation. However, there are now technologies that can insulate such floors from below with the use of an innovative remote control vehicle. It surveys the underside of the floorboards, before spraying on insulation.



Remember, it's not just the roof and walls that can lose heat. The floors can too.



Foam insulation boards are laid between the floor joists



Alternatively, a cheaper way to reduce heat loss is through reducing draughts by sealing the gaps between the floorboards and along the skirting with specific flooring products (ask your local DIY or hardware store about suitable products for your situation).

Insulating a concrete floor

Insulation can be laid over the existing floor, but if a floor is being replaced, this is a perfect opportunity to improve the standard of insulation. In fact, where this is the case, upgrading your floor insulation is required in order to comply with Building Regulations. Insulation can be added over the existing concrete slab or underneath a new one.

Where insulation is placed above the slab, the rooms will warm up more quickly when the heating is switched on. High performance insulation panels or boards are often the best materials to insulate an existing concrete slab floor as they provide the best thermal performance at any given thickness. Keeping the thickness of your insulation to a minimum will reduce the likelihood of having to make costly alterations to door openings, stairs and other fixtures as a result of the increase in floor height.

It is a good idea to lay a damp-proof membrane underneath the insulation (taking care to overlap any damp-proof course in the external walls). Don't forget to leave room for expansion around the edges of each room. If your chosen insulation does not come already attached to a layer

of moisture-resistant chip-board you may need to lay a separate deck on top.

Insulating your floor underneath the concrete slab can help regulate the temperature and prevent over-heating in rooms that are south-facing or occupied for long periods of the day due to the thermal mass of the concrete. The damp proof membrane can be placed above or below the concrete slab, depending on the particular product (manufacturers will be able to advise). If the membrane is placed above the slab an additional membrane may be required to protect the insulation from ground contaminants.

Any timber to be used as a new floor covering should be left in the room for some weeks with the heating on before being laid to prevent it from warping.

How much money will I save?

It's always advised to shop around for quotes before having any work carried out. Having a timber floor insulated professionally, including filling the gaps between the floorboards and around the skirting, depends on the size and shape of the room and the insulation material used, but typically costs around £500.

The cost of insulating a concrete floor can vary greatly, especially if the concrete is removed or additional works are done, but costs will probably start around £1,000. Insulation will make the room feel warmer in the winter and reduce heating bills by up to £70 per year.

With this level of saving the payback time on a timber floor is around 7 years, while carrying out the work on a DIY basis will significantly reduce the costs and the insulation could pay for itself in around 2 years. Insulating a concrete floor might take 14 years to pay for itself, but this will reduce as energy prices continue to rise.

'When insulating your floor you could also think about installing underfloor heating.'



For more on insulation see our factsheets on underfloor heating, external and internal solid wall insulation, loft insulation and cavity wall insulation, and also on DIY draught-proofing. Available to download at www.cse.org.uk/advice-leaflets



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