centre for sustainable energy

Alliance homes

Home energy advice

If you are an Alliance Homes customer and do not have insulation please contact 03000 120 120

How to insulate your loft

A guide for the competent DIY-er

Insulating your loft can be a simple and effective way to reduce heat loss, keeping you warmer in the winter and cutting energy bills. Fitting the insulation yourself can help keep the cost down.

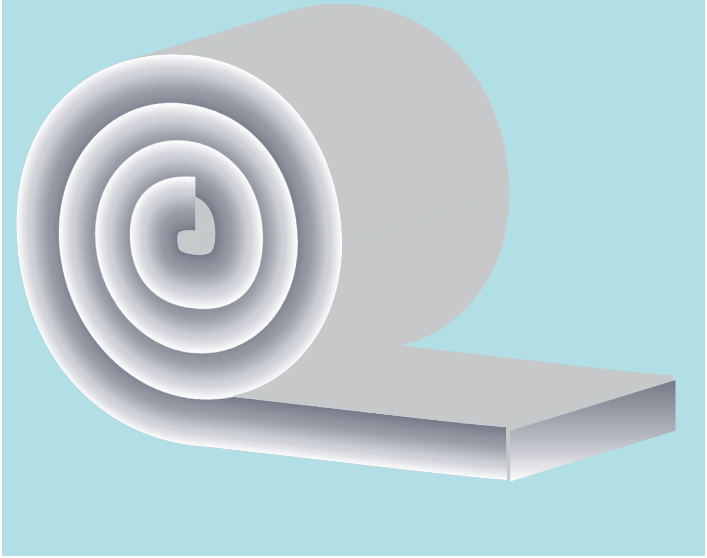
What type of insulation material should I use?

The most common form of loft insulation is mineral fibre which comes in rolls that are laid out at the floor level of the loft between the joists. Loft insulation can also be made from sheep wool, hemp fibre, flax, cellulose or recycled materials like plastic, glass or newspaper. There are other alternatives such as rigid boards, blankets (where insulation is sealed inside a foil bag) and foam panels that squeeze between joists. Some materials are better insulators than others. So you could use a thinner layer of a solid insulation board to achieve the same results as a thick layer of mineral fibre, for example.

For this guide, we'll assume that you're using standard mineral fibre insulation. If you want to compare materials, you can use the figures on the product packaging or get the figures from manufacturers. Some retailers provide leaflets comparing the relative properties of different materials. Look out for:

- R-value (the higher the better; a measure of how heat loss is reduced by a material)
- k-value (the lower the better; a measure of heat flow through a material)
- U-value (the lower the better; a measure of heat flow through a given thickness of a material).

Insulating your loft is a good idea, but you'll need a lot of rolls



Before you start

You'll need to know how many rolls to buy – most retailers and manufacturers can calculate this for you if you provide a few details. First, measure the floor area of your loft.

In most properties you can do this using the length and width of the rooms beneath. If you already have some old insulation in place, measure the depth so you know how much of a top-up you need. Using mineral fibre, the recommended depth is 270mm. So if you've already got 100mm of insulation in the loft (about level with the height of the joists), you'll need rolls that are 170mm thick to bring your insulation up to standard. Also buy some draught-proofing strips for the edges of the loft hatch.

Check that your loft hatch is large enough for you to comfortably get through with a roll of insulation.

If you have bats in your loft: 1) lucky you; and 2) you are not allowed to harm them. More about this at the end of this leaflet.

If it is a very small hatch you will need to get it widened by a competent tradesperson. Be sure you have a sturdy and secure ladder to get yourself safely in and out of the loft. You will also need a couple of loose planks or loft boards to stand or kneel on once you're up in the loft space. Be very careful to only put weight on the boards so you don't damage the ceiling or yourself. Check there's enough lighting and ventilation for you to work.

Before you get going, check for any repairs that might be more difficult after the insulation is fitted and get these sorted out first. Prepare the loft space by sealing any large holes around pipes and cables, and fit coverings to any lights. Fix electrical wiring out of the way so cables don't overheat. This is particularly important for cables supplying high electricity use appliances like electric showers and immersion heaters. These cables should lie on top of the insulation when you've finished and not be buried underneath it.

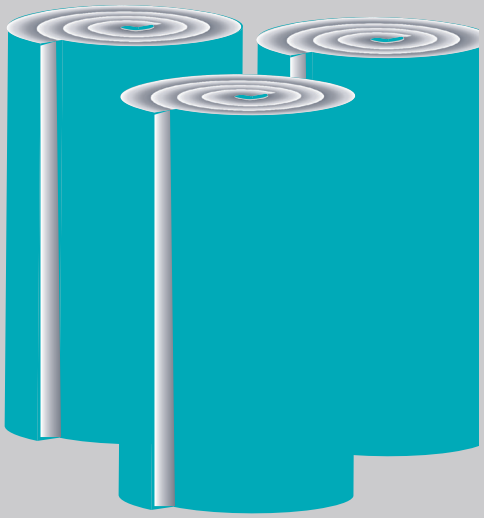
Always read the manufacturer's instructions and take extra care when cutting and unpacking the insulation. Some people find that mineral fibre irritates their skin and you certainly don't want to breathe in the fibres or get them in your eyes.

Get the gear

To protect yourself, you'll need goggles, a mask that covers your mouth and nose, and gloves. Many retailers sell kits of these items.

You'll also need a tape measure and a knife or long scissors to trim the insulation. Wear overalls if you have them.

Don't unpack the rolls of loft insulation until you're actually in your loft



Most insulation is compression packed and will expand once the wrapping is removed, so only unpack the rolls once they're up in the loft. It's also much easier to cut the insulation while it's still rolled up. You may find that the packaging has a perforated line indicating the required width to the cut the insulation so that it fits neatly between the joists. Often the rolls will be pre-cut to the correct width before they are packaged.

Don't squash the insulation to fit into corners, trim it so it fits properly at the right depth. Where one roll ends and another begins, push the ends together leaving no gap.

For ventilation, leave a gap of at least 25mm around the edge of the loft. Do not lay the insulation all the way up to the eaves. If your boiler flue goes through the loft, leave a gap around this as well.

Install the first layer to roughly the depth of the joists. To minimise heat loss and give an even coverage, fit the second layer across the joists at a 90 degree angle.

Don't forget the loft hatch itself. Insulate the back of the hatch by using a square of insulation, wrapped in polythene. Fit it to the hatch using staples or tacks. Then draught-proof around the frame so it fits snugly.

Water and electrics

If you have a cold water header tank or cylinder in your loft, you need to reduce the risk of it freezing by lagging it, but do not put insulation under the tank. Also lag all the water pipes so they don't freeze.

It's a good idea to retain a walkway to any water tanks and boilers in case they need servicing. Make sure the walkway is easily identifiable – once the insulation is in place it can be very difficult to see where the joists are, so fit walk-boards if necessary.

Make sure any electrical cables are lifted above the insulation and that recessed light fittings are not covered. entilation and condensation

Ventilation and condensation

Once the loft is fully insulated, the air temperature in the loft will be considerably cooler. Because cold air cannot hold as much moisture as warm air, condensation is more likely to form. Condensation can create a damp problem, so you must make sure your loft is adequately ventilated and that air can circulate. Be careful not to cover air vents, and make sure that the insulation is not pressed up around the outside walls or eaves.

Check the loft from time to time to spot any condensation problems. You may find additional ventilation is required. If you are concerned about condensation making items stored in the loft damp, consider using plastic boxes with fitted lids.

What if I want to use my loft for storage?

If you need to use your whole loft for storage then topping the insulation up to 270mm may not be practical. This is because if you squash the insulation down underneath loft boards it becomes less efficient at keeping the heat from escaping. One option might be to raise the height of the joists to allow for 270mm of uncompressed insulation and placing boards on top. But this will increase the cost of the job considerable, may not be suitable to do yourself, and will reduce height of the loft space.

Think about what you would like to store and whether frequent access is required. If it's just a few boxes, you can insulate the majority of the loft to the full depth and have a small boarded area adjacent to the hatch.

For this boarded section, only lay insulation to the depth of the joists so as not to compress the insulation, before laying the boards on top. You could also consider using rigid insulation boards rather than mineral fibre.

Annual saving on energy bills

A quarter of heat is lost through the roof in an uninsulated home. Insulating your loft, attic or flat roof is an effective way to reduce heat loss and reduce your heating bills.

Installed correctly, loft insulation should pay for itself many times over in its 40-year lifetime.

Energy saving measures

To get an up-to-date estimate of savings please go to:

https://energysavingtrust.org.uk/hub/quick-tips-to-save-energy/

Bats in the loft?

Bats are protected by law. You may be committing a criminal offence if you capture, injure or kill a bat. It is even an offence to disturb a roost or obstruct the bats' access to their roost.

So if you have bats in your loft, it is strongly recommended that you contact the Bat Conservation Trust (**www.bats.org.uk**) before you begin work (**enquiries@bats.org.uk** or **0845 1300 228**). The Trust is contracted to Natural England to provide free advice.

If you are an Alliance Homes customer and you have question about the insulation in your home, please contact us on 03000 120 120 and we will investigate. **Only access your loft if you feel safe to do so.**

For Home Energy advice please contact our Home Energy Advisors on **03000 120 120** or at **homeenergyservice@alliancehomes.org.uk**

Centre for Sustainable Energy

Produced in collaboration with the Centre for Sustainable Energy (CSE).

The charity supporting people and organisations to tackle the climate emergency and end the suffering caused by cold homes.

cse.org.uk

Alliance Homes

40 Martingale Way, Portishead, BS20 7AW

act@alliancehomes.org.uk

03000 120 120

alliancehomes.org.uk