

# HOME COMFORT GUIDE



## THE PROBLEM

Heat escapes through the fabric of the house and through gaps. If you seal it too tightly to keep the heat in, the moisture from cooking, showers and our own breath floats in the air until it finds a cold spot. Then it turns back into water and causes damp and mould. We need just enough ventilation to avoid this, but not too much or we heat the street and still feel cold draughts.

## SOLUTIONS

### DRAUGHTPROOFING

### INSULATION

### VENTILATION

A house loses heat through walls, roof, floors, chimneys and windows, and there are also losses from small gaps that cause draughts. A detached house tends to lose the most heat as it has the most outside walls: in a flat we benefit from our neighbours' heating too!

When you make a change, such as sealing draughty windows, you need to think about effects this might have elsewhere. For example if the house is very sealed and there is not much air flow, you may notice condensation on cold spots in other parts of the house.

This fact sheet will introduce some of the things to consider in a whole house approach. Some of the measures will increase comfort but not save a lot of money.

### Things to consider:

- suitable temperature
- airtightness
- humidity
- clean air free of toxic substances and particles.

Keep the house at a suitable temperature: 19° to 21°C is the recommended temperature range for occupied

rooms. 18°C is the recommended night-time temperature for anyone over 65 or with health problems. Arrange the central heating timer so that heating goes off or is much lower at night, and is lower or off when you are out. If you have gas, it will heat the house again quickly in the morning. With a heat pump there needs to be more time.

A house that is very sealed against draughts may get a build up of gases and particles from chemicals on fabrics and surfaces. A CO<sub>2</sub> monitor gives an idea of this. It will have a high reading from our breathing if there is not enough air flow. It is important not to block ventilation grilles.

Most of the information here is for people wanting to do low-cost DIY work. If you are lucky enough to be able to afford to do major works on your house, you should get advice from a retrofit assessor, which costs around £500, in order to make sure the works are done cost-effectively and in the right order.

Contact Ovesco for help with this:

<https://ovesco.co.uk>

Also see the Home Action Plan written for Barcombe residents.

<https://communiheat.org/home-action-plan>

### Other ways to reduce energy use:

We should also mention other ways to minimise use of fuel: turning down gas boiler flow temperature; turning down thermostat; only heating the room you are in, etc. For hints and savings, see: <https://energysavingtrust.org.uk/hub/quick-tips-to-save-energy>

Decrease flow temperature on gas boiler (easiest for combi boilers)

<https://www.theheatinghub.co.uk/articles/turn-down-the-boiler-flow-temperature>

Heat only one room

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

Ovesco has produced a leaflet Take Power of Your Power which gives the energy consumption and cost of household appliances.

Make sure you are benefiting from government help if you are finding bills too high, and seek local help such as from Eat or Heat energy sessions. There are grants if you qualify, which would enable quite substantial work on your house.

See <https://warmeastsussex.org.uk> 0800 464 7307.

For a list of help available see <https://transitiontownlewes.org/financial-support-round-up>

## DRAUGHTPROOFING

This reduces the amount of heat carried out in the air through gaps in windows, doors and chimneys, and even the gaps in walls caused by putting pipes or extractor fans through.

### WINDOWS AND DOORS

Draughts can come in around window frames and cause heat loss. These can be sealed with a variety of rubber and plastic strips, so that they open but seal properly when closed. Even draughty sash windows can be greatly improved. If it's difficult to do anything else, windows can be sealed shut in winter with duct tape, or even cling film rolled into a narrow strip and pushed into the gap. Make sure there is still some ventilation possible. There are more complicated strip systems for windows where the strip is in a groove chiselled into the frame – this may require an expert to do the work.

Larger versions of the strips exist for doors, and there is a type that drops automatically when the door closes. There's also a springy copper strip that can be used on vertical gaps:

<https://www.dockerills.co.uk/products/proper-copper-draught-strip-25mm-x-6m>

For more details see:

<https://energysavingtrust.org.uk/advice/draught-proofing>

Heavy lined curtains fitted close to windows and a pelmet above can help to reduce heat loss and feelings of cold because they cover the cold surfaces that our body heat would otherwise radiate out to. Insulation eliminates such “cold spots”.

Thick full length door curtains can help in the same way. They can be on a rail (a portiere) that lifts when the door is opened.

## CHIMNEYS

A chimney draws air up and out, pulling in cold air from other gaps in the room. This can be avoided by fitting a chimney balloon or a woolly “sheep” that fits up the chimney and allows a small amount of ventilation. A cheap temporary measure could be to use a plastic bag full of scrunched-up newspaper – but in the long term this might cause damp problems in the chimney. For more information see

<https://energysavingtrust.org.uk/how-draught-proof-your-chimney>

The Energy Saving Trust estimate that stopping chimney draughts could save £90 per year in an average house.



### WALL GAPS

These are often caused when a new opening is made for a fan or piping. Builders have not always been careful in this respect. Small gaps can be filled with silicone filler, or larger gaps with expanding foam filler which expands to fill the gap and then sets hard. These products can be bought to fit into a “gun” which you use to squeeze the product out into the gap.

### LOFT HATCHES

Hot air rises and escapes into the cold roof space through gaps around the hatch. These can be filled with rubber or plastic strips in the same way as windows and doors. The hatch ought to be insulated at the same time as the loft. For more details and background see <https://energysavingtrust.org.uk/advice/draught-proofing>

## FLOORS AND SKIRTINGS

The average home loses 15% of its heat via the floor. Most floors are either solid concrete or wooden floorboards. There are also concrete planks (with space underneath) and floors made of sheets of composite board.

If you are going to insulate, it must be done before draughtproofing – but if you are not in a position to do this, draughtproofing will still help a lot. Some older houses were built assuming the floorboards would always be carpeted or have lino – but the fashion for bare boards often means a gale blows up through the floor!

It's important not to block airbricks, especially with wooden floors, as they ensure air flows under the floor so that moisture does not build up and cause rot, but it is also important not to let water blow in through the air bricks. If water runs down the wall over the airbricks such that the prevailing wind would blow it in, or you live near the shore where sea spray blows in, the normal vent bricks can be replaced by louvred ones.

<https://www.bes.co.uk/air-brick-air-920-9-x-3-terracotta-7665/>

For sealing the gaps, there are various products available. In addition you should fill the gap between skirting boards and floor. Because the floor boards move with respect to the skirting as they warm and cool, use a silicone sealant, which is flexible. Clean the bottom of the skirting board and the floorboards under the skirting so that the sealant bonds to both.

Floorboard gap fillers include Draughtex:

<https://www.draughtex.co.uk/>

There are full instructions. It is made from soft rubber, in black or a “shadow” colour to blend in with flooring.

<https://www.draughtex.co.uk/how-do-i-fit-draughtex>



Other options include: <https://www.doorsonlineuk.co.uk/blog/how-to/draught-proofing-floorboards-a-diy-guide-to-insulating-your-home>

This says there are four options:

- Silicone-based filler
- Pine slivers
- DIY draught-proofing (StopGap or Draughtex)
- Mass Filler

They give a good description and DIY guide.

StopGap is another product that can be stuffed in between floorboards, and is recommended in a Guardian article: <https://www.theguardian.com/environment/blog/2011/dec/16/1>

There are more general articles here:

<https://www.theguardian.com/environment/blog/2011/dec/16/1>

and here: <https://energysavingtrust.org.uk/advice/draught-proofing> (includes savings).

## INSULATION

Concrete floors can be insulated by putting a layer of insulation on top, although to put a really adequate amount means altering all the doors and putting up with lower ceilings. Cork flooring is available up to 12mm thick: <https://www.puretreecork.com/product/22829>

It is available pre-coated. You can also get cork planks on hard backing that click together. You can put a further layer of cork beneath to add more warmth.

If you have concrete planks, you can often tell by looking for airbricks in the walls below the level of the floor. It would be very difficult to insulate under these planks.

### INSULATING UNDER FLOORS

Timber floors can be insulated by lifting the floorboards and laying mineral wool insulation supported by netting between the joists. This is a more major job that requires professional advice about the condition of timbers and ventilation and to ensure condensation does not occur between layers.

### WALL AND LOFT INSULATION

While it is possible to do DIY loft insulation in a simple loft, houses with dormers and rooms in the roof often have sloping surfaces called skeilings, and these require professional advice. You need a professional company to do cavity wall insulation, and there are some houses with cavity walls that should not have it owing to prevailing weather conditions. Even in a sheltered

position it is essential that that the brickwork, pointing or render are in good condition. If cavity wall insulation is considered, polystyrene beads provide the most effective insulation and do not absorb any moisture that does penetrate. Solid walls can be insulated on the inside or outside, but again, this is work that needs professional help. Please seek specialised advice if the house is very old and/or of unusual construction.

Radiator foil is a shiny covering that you stick to an exterior wall behind a radiator. It reflects heat back to the radiator, acting as insulation, so that less is lost to the wall. It is of most benefit with uninsulated solid walls.

Energy Saving Trust has more information – see <https://energysavingtrust.org.uk/energy-at-home/reducing-home-heat-loss/>

## SECONDARY GLAZING

see Jill Goulder's guide and website: <http://www.jillgoulder.plus.com/green/Magstrip.html>

As Jill says, magnetic strip secondary glazing is inexpensive and easy to do; it's unobtrusive (good for conservation zones and listed buildings) and very long-lasting; it does the same job as expensive secondary glazing systems. Many people can do this work themselves: if you feel you are not handy enough, an odd-job person could follow the instructions and look at the video and do a good job.

As a cheap short-term measure, there is a product like cling film that you can stick to windows which will last for one winter. It makes a surprising difference and is not too difficult to apply – there is an instruction video on the website.

<https://www.stormguard.co.uk/stormguard-products/seasonal-double-glazing-film>



## VENTILATION

A house that is very sealed against draughts may get a build up of gases and particles from sources including chemicals on fabrics, adhesives, air fresheners, candles, gas cookers and fires. A CO<sub>2</sub> monitor gives an idea of how much the air is changing. It will have a high reading from our breathing if there is not enough air flow.

People breathe out water vapour as well as CO<sub>2</sub>. Cooking and showers create a lot too. We need to keep enough air flowing so that moisture doesn't build up. Humidity can be tested using a hygrometer. CO<sub>2</sub> levels can be tested using a meter: 400 to 1000 parts per million is acceptable. Higher levels are not dangerous until they reach tens of thousands, but they are an indication that other pollutants might be increasing as well. A combined CO<sub>2</sub> and humidity meter is available: for example Lifebasis.

## WAYS TO IMPROVE VENTILATION

Open windows and doors twice a day if you are at home. If you get a through draught for 15 minutes this will refresh the air without losing much heat. This is because the walls and other structures can hold much more heat than the air can.

Use an extractor fan in the kitchen and bathroom, and close doors while cooking.

Use trickle vents if you have them on windows.

Do not block ventilation grilles. Air flow under the floor is especially important.

Very well sealed, highly insulated houses often have whole house ventilation systems with ducts in each room and a unit in the loft. Cold air coming in is warmed by passing near to the warm air going out: a heat exchanger. There are single room extractors that also do this.

The main focus of the Warm Home Box is on low cost DIY measures but we have included some sources of information about more major works.

Please seek specialised advice if the house is very old and/or of unusual construction.

This guide is available by email, with all the links live, or on Lewes Climate Hub website <https://lewesclimatehub.org/meet-the-warm-home-box/>