FACTSHEET 4

Insulating your tenement

This factsheet explains how to keep your home warm by insulating your:

- loft or roof
- floors
- walls

Tenements are old buildings and the stone walls are already good at keeping in heat, but there will be areas that can be improved. Adding insulation will keep more heat in your home, making it warmer and saving you money.

Where should I insulate?

You should try to insulate the areas of your home where most heat is lost. Where these areas are can be difficult to determine because tenement homes can vary a lot, but they are probably:

- The roof or loft for top floor flats.
- The floor for flats on the lowest floor.
- The walls in flats at the end of the terrace.

Many tenement homes lose a lot of heat through windows, especially those with large windows such as bay windows. Look at how you can improve these – see Factsheet 2. Also look at draught-proofing (Factsheet 3); this is often the cheapest and easiest way to reduce heat loss.

Ventilation

Remember to ventilate your home. Tenements were designed to have a level of airflow to let fresh air in and stale air out to avoid damp problems. Regularly open windows on warmer days when your heating is off, keep trickle vents on windows open throughout the year, and consider installing an extractor fan in rooms such as the kitchen and bathroom.

FOR MORE INFORMATION about insulating your tenement, see:

- Historic Scotland's guide to energy efficiency, Fabric Improvements for Energy Efficiency in Traditional Buildings.
- Changeworks's guide to improving energy efficiency in traditional and historic homes, Energy Heritage.
- The Energy Saving Trust website.

Loft and roof insulation

IMAGE © ENERGY SAVING TRUST

Most tenements have lofts, which can be insulated. Some don't and either have rooms that are built into the roof or flat roofs. Both can be insulated.

If you are carrying out roof repairs this is an ideal time to insulate the roof or loft. Flat roof insulation and loft insulation are usually a communal improvement because the roof is usually owned by everyone in your block. Refer to Factsheet 1 for more advice.

Loft insulation

Insulating your loft could save you up to £130 per year[1] if you live on the top floor. You may be able to do this yourself, or you can use a professional installer. Call Home Energy Scotland on 0808 808 2282 for information on possible funding available.

The most common type of loft insulation is insulation matting which can be made of different materials, such as fibre glass, sheep's wool or hemp matting. The recommended depth for matting is 270mm. If you need to store items in your loft, your installer can advise on the best way to do this, either by building a storage platform or laying flooring with boards of insulation underneath instead of matting. If your loft is difficult to access, the installer may advise you to use blown fibre, a type of insulation that is 'blown' into the loft.

You can install many types of loft insulation as a DIY task but you should get more detailed advice to make sure that you do the following appropriately:

- Insulate water pipes and tanks (around the top and sides); otherwise they might freeze.
- Cover electrical wires in a fire retardant material.
- Insulate and draught-proof the loft hatch.
- Leave a gap in the insulation around the edge of the loft. Blocking ventilation gaps could lead to a risk of condensation, mould and timber rot.

Flat roof insulation

Flat roof insulation needs to be fitted by a professional installer. It can be fitted on top of the roof by removing and replacing the felt roof covering. This is quite expensive and only undertaken if the felt needs replacing. Alternatively, it can be fitted below the roof but this is much more disruptive. Check with the installer that there will be enough ventilation into the building.

'Room in the roof' insulation

If you don't have a loft space that you can insulate you can add insulation below the roof itself, between the rafters – wooden beams in the roof. If the rafters are covered up (by plasterboard, for example), this will have to be fully or partially removed to fit the insulation, then put back and redecorated.

✔ TIP!

- Draught-proof your loft hatch to reduce heat loss. See Factsheet 3 on types of draught-proofing; these can be applied to loft hatches too.

1 Source: Energy Saving Trust (2015) and Changeworks and Energy Saving Trust (2008) Top of tenements

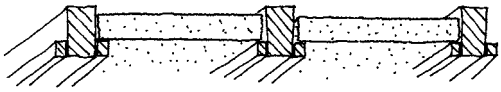
Floor insulation

Wooden floors

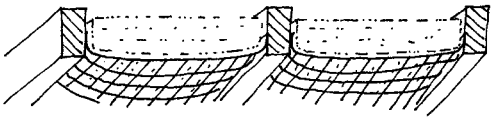
Many tenements have wooden floors. These are suspended which means air can flow underneath to prevent damp. You can make your floorboards warmer by laying down a rug or carpet with a thick underlay.

If you are on the bottom floor you can also insulate the floor:

- **Underneath**: if you can get beneath the floor, it is much easier to insulate it from below. You can do this as a DIY task or use a professional. You can fix insulation between the joists (wooden beams) using either 'insulation matting' or insulating boards. You will need a net to hold it in place if you are using matting or battens if you are using insulating boards.
- **Above**: If you can't get below the floor, remove the floorboards and fix the netting or battens before fitting the insulation. You might not have to lift all of the floorboards to do this.



Insulation boards and battens



Insulation matting and nets

Solid floors

If you have a concrete floor you can either:

- **Add an insulating layer**: this is usually less disruptive. A thin insulation material can be used if desired. You can get the installer to lift and re-lay your carpet or laminate flooring on top of the insulation. It is sometimes possible to lift flagstones but take care to avoid damaging them.

You can make your floorboards warmer by laying down a rug or carpet with a thick underlay.

- **Replace the floor**: there are a range of insulated floors available but not all are recommended for traditional buildings. An alternative method is to install an insulated lime concrete floor, which should avoid such problems – but this is a major operation and requires professional installation.

Things to consider

- Doors, skirting boards and cupboards may need to be moved or adjusted if the insulation will change the floor height. Listed building consent may be required if your home is listed.
- If you are insulating your floor as a DIY task, ensure:
  - Your water pipes are insulated (see Factsheet 6).
  - Electrical wires are covered in a fire retardant material.
  - Air bricks (bricks with holes in them to allow air flow) are not blocked.

- Draughtproof the gaps in between floorboards and skirting boards, covered in Factsheet 3.

✔ **TIP!**

Solid wall insulation

The outside walls of traditional tenements are made of solid stone and can be insulated either from the inside, internal wall insulation, or from the outside, external wall insulation. It can save you around £145 per year[2].

Solid wall insulation can be expensive and difficult to fit so consider easier and cheaper measures first.

Internal wall insulation

Internal wall insulation is more appropriate for tenements as it has less visual impact once fitted. There are lots of different ways to do this and it costs £20 to £120 per m2[3]. Get advice from a professional installer used to dealing with traditional buildings.

The internal walls of many tenements are finished with lath and plaster, where narrow strips of wood are fixed to wooden frames and then covered with plaster. If your tenement has this, you need an option that has less impact on the look of the wall. With your installer, consider installing blown insulation beads into the gap between the wall and the frame onto which the plaster is fixed. It probably won't reduce heat loss by as much as other types of insulation but is cheaper and much less disruptive.

If your walls do not have lath and plaster, you can:

- **Add insulation directly onto the wall**. You can use very slim materials if you want to save space, or thicker insulation boards fixed onto the wall surface. These options can be covered by a plaster finish.
- **Replace the existing wall lining with insulation** such as insulation-backed plasterboard or insulation fixed on a wooden frame and covered with plasterboard or similar. The second option is more appropriate for larger rooms where space is not an issue.

Things to consider

- Using moisture-permeable insulation materials that allow moisture to pass through to avoid damp building up.
- Putting this insulation in can disrupt your home life whilst it is being installed. Consider doing it when you are refurbishing or redecorating. Or do it room by room.
- Things fixed on the wall such as radiators will need to be removed and replaced when the insulation is put in. Your skirting boards, window sills and decorative features such as cornicing may also be affected.
- You may need listed building consent if your building is listed.

External wall insulation

External wall insulation fixes insulation to the outside of the wall covered with a finish, such as render. It is less suitable for most tenements because it changes how your building looks and is only suitable if the whole building is being insulated. Your local authority may not allow it; contact them for more information. Sometimes it may be allowed on the gable end (the end wall of the building) or on the rear of the building.

2 Source: Energy Saving Trust (2015)

3 Source: Range of costs taken from Historic Scotland and Changeworks (2012) Technical paper 16, David Adamson Surveyors (2012) and Sustainable Uist (2012)

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