

tenement fact sheet

1 Loft insulation, draughtproofing of stair doors and windows, adding a draught lobby door

1 কমন মেজার্স লফট ইনসুলেশন, আদ্রতানিরোধক এবং লবি দরজা

1 المقاييس العامة لعوازل مخازن المسقوف و موانع التيار الهوائي و أبواب الردهات

1 常用措施：閣樓隔熱、阻隔氣流、及大廳門

1 توانائی کو باہر نکلنے اور ضائع ہونے سے روکنے کیلئے چھتوں میں مولو بھر دانا، گھر میں ٹھنڈی ہوا آنے سے روکنا اور ہال کے دروازے

This is the first of six fact sheets on how to improve the energy efficiency of traditional stone-built tenements. It looks at issues affecting the whole tenement rather than the individual flats. It refers to the impact energy efficiency may have on the look of original features in the common parts of the tenement, and how this can be kept. It explains why, what, where and how energy efficiency can be improved, as well as referring to standards, sources of funding, information and advice.

Why install measures to common areas and what are the benefits?

Properties sharing a common close will have walls, doors and in some cases windows onto the close (stair), as well as the ceiling. Closes are not heated, but may benefit from heat from the sun through rooflights or cupolas, as well as losing heat through these. Any remaining heat is lost through floors, ceilings and walls, windows to the stair, and doors to the street or back green.

Properties in a close lose heat through the common wall to the stair since the close is unheated. Energy efficiency measures benefit all the properties in the stair by reducing and slowing heat loss from the close.

Before planning energy efficiency improvements of common areas, it is essential to have a stair meeting and decide on how costs will be apportioned, including those for ongoing maintenance. This is particularly important when planning work in roofspaces/lofts. The common area of a loft is usually over the close itself.



General view of ceiling to a close, showing rooflight

Insulating the roofspace: loft insulation, tanks and pipework

This is only relevant to tenements with pitched roofs. Roofs with a pitch of less than 15° are treated differently, as are flat roofs without an accessible roof void space, and lofts without adequate natural ventilation.

Loft insulation to meet current standard is approximately 250mm (10") thick, dependent on the performance of the product.

An upper flat without loft insulation loses a quarter of all heat into the loft and through the roof. Adding insulation reduces fuel use by around 20%. The savings on bills repay the cost of the work in 3 to 5 years. The cost of insulating a loft is around £300, using a builder. Do-it-yourself material costs are around £100 with quicker pay-back in 1 to 2 years. The figures for common lofts, particularly over stairs will be different, though as a guide the area of the ceiling to the stair will be about a third of that for each flat adjoining it. Insulating the common loft benefits all properties in a stair, with ground floor properties still achieving a 7% reduction in fuel costs after the loft has been insulated.

If you want to do it yourself

Access is usually through a ceiling access hatch. Where no access is present this should be installed. An existing access hatch in the loft floor is treated in three ways: loft insulation material is fitted to the topside of the cover, the frame to the loft hatch cover is draughtproofed, and a catch fitted to hold the hatch cover in place.

This ensures that the standard of insulation is consistent across the loft floor. The draughtproofing



Loft access cover with draughtproof and lock

material is one of the 'compression' types (fact sheet 2). If the hatch is to be resited or a new hatch installed it has to be fire resistant.

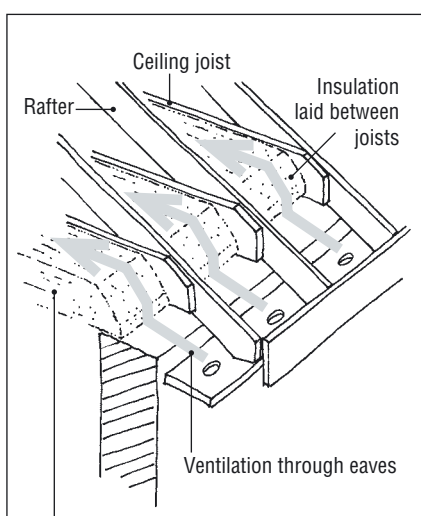
Loft insulation is usually man made mineral fibre, in the form of a rolled quilt laid between the joists on the loft floor. Insulation may have been installed before to a very low standard, and need removing and replacing, or just topped-up. There are various options, dependent on the existing thickness of insulation, the depth of the joists to the loft floor and the level of insulation to be installed.

If you already have some insulation, to bring it up to the recommended 250mm (10") standard, top up 25mm existing with 100mm and 150mm, 50mm with 2 layers of 100mm (or 200mm), 100mm with 150mm, and 150mm with 100mm.

Where existing insulation is more than 50mm below the top of the joists, top-up is fitted between the joists. Where existing insulation is

less than 50mm from the top of the joists, top-up material is laid across the joists, creating small air pockets between the layers of insulation. Allowance has to be made for any subsequent sagging of the material. On-going access has to be maintained and the simplest way is to leave a crawlboard next to the access hatch.

An alternative to rolled quilt is blown or loose fill laid between the joists. This is either man made mineral fibre in pelleted or granular form or cellulose fibre. It can be applied in places where access is restricted. Some blown or loose-fill products shift within the loft due to air movement, leading to material piling up in parts of the loft, and restricting ventilation across the roofspace. Loose fill insulation also requires the use of a stop end to act as a barrier between the insulation and the eaves.



Insulation cut at an angle to maintain ventilation and equivalent of 50mm air gap between insulation and the underside of the roof

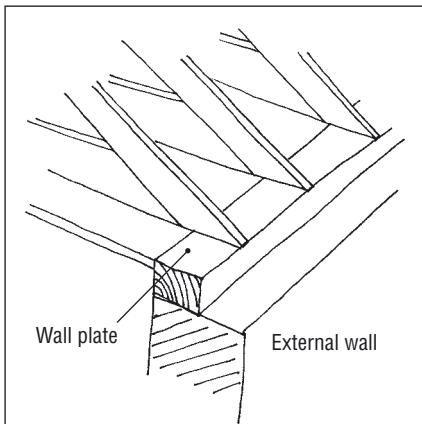
Maintaining ventilation from eaves where these are present

Ventilation

Insulation can only be fitted in well ventilated lofts. Warm air rising into the loft carries high levels of moisture. If the loft is uninsulated, warm air hitting the underside of the roof, the boards, felt or tiles, will condense on the underside. Over time, moisture will accumulate and cause rot in the roof timbers. Loft insulation reduces the flow of warm air into, and lowers the temperature in the loft. There will continue to be moisture in the roofspace, so fresh air to disperse this is essential.

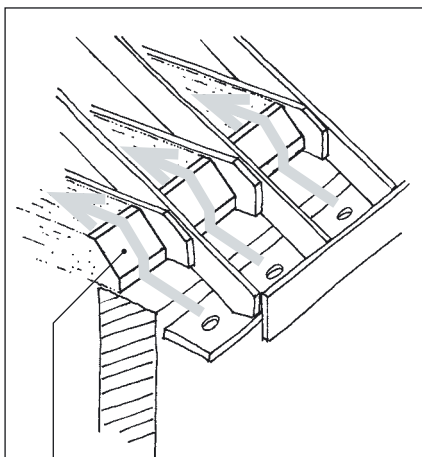
A flow of fresh air must be present and, dependent on the roof pitch, the equivalent of a minimum 15mm air gap for the length of the eaves (where the roof meets the walls). In roofspaces with felt or boarding under the tiles or slates, a ridge vent or other high level means of increasing the air flow is necessary. Insulation should be laid so that a 50mm gap is left between the end of the insulation and the underside of the roof. This can be maintained with the use of preformed eaves vents.

Reroofed tenements may have adequate ventilation through ridge, slate, tile vents or gable-end airbricks. Otherwise the simplest way to add ventilation is to drill through timber eaves soffit boards, where these are present and to fit vent grilles.



Edinburgh roof construction does not allow ventilation except between flashings and roof slates. Special slates vents can be fitted to replace a slate or tile.

Typical Edinburgh roof structure without eaves



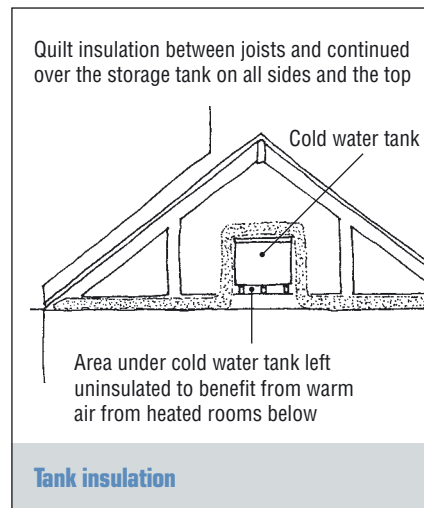
Preformed eaves vents allow use of loose fill or act as a stop end for mat insulation

Maintaining ventilation from eaves using preformed eaves vents

Pipework and tanks in the roof

Warm air rising into the roofspace in an uninsulated home reduces the incidence of frost damage to pipework in the roofspace. A more effective way to prevent frost damage is to insulate the pipework and tanks in the roofspace when the loft is insulated.

Tanks on raised frameworks, above the roof joists have to be completely insulated on all sides, top and bottom. Tanks sitting on the roof joists should be insulated on five sides. This includes the top, with the underside of the tank remaining uninsulated, to benefit from the warmth from below. The insulation of the tank is a continuation of the loft insulation.



Tank insulation

The thickness of pipework insulation is subject to local water board requirements. Thicknesses are specified to protect against freezing and relate to the outside diameter of pipes. For smaller diameter pipework the respective insulation thicknesses are higher than for larger sizes, and the insulation standards for different materials vary.

Loft insulation should not be installed

- where there is rainwater penetration
- where there is condensation or wet or dry rot in the roof timbers

- above ceilings which can't take the weight of loft insulation and other weights during its installation.

The roofspace must be clear of stored items, and rubbish, and have no faults in the electrical wiring, and no corrosion in structural metal connections to the roof timbers.

Other issues limiting the extent of loft insulation in a roofspace

All gaps in the ceiling around existing pipes and other services should be sealed using an intumescent sealant, to provide fire protection

Insulation material should be kept 75mm from all electrical apparatus in the roofspace. Where loose fill is used a permanent barrier must be installed to maintain this clearance. The same space needs to be maintained between insulation and flues or metal chimneys. This does not apply to brick or stone chimneys however.

Electric cables supplying immersion heaters, electric showers and electric cookers must not be covered by thermal insulation. Cables to these appliances should be lifted above the insulation. If this is not possible the insulation must be retained at a minimum distance of 75mm from these cables for their entire length in the loft area, to prevent overheating.

Draughtproofing

Doors and opening windows to closes can be draughtproofed. The appropriate materials and fixing techniques, are described in the second fact sheet in this series. Draughtproofing to the front or rear doors to the close needs to be strong enough to cope with heavy use of both doors. Material in a rigid carrier is more robust than material applied to the inside of the frame.

Adding a draught lobby door

The installation of a draught lobby screen and door can provide extra protection to the close itself. Positioning of the screen should take into account distance from the front door, the opening of this and other doors into the close. It should also make allowance for any fixtures or features in the close, such as decorative tilework and dado rails. The design of the screen, frame and integral door need to mirror that for the main entrance, incorporating any fanlight, side windows or other features. The height of the door and cross rails should match other parts of the stair, such as skirting, dado rail or tiling heights.



Draught lobby door to a tenement

Where the existing front door lock is operated by a stair controlled-entry system, the inner door should not have an integral lock. The door should have a door closer, handle and appropriate finger plates/push plates and kick plates. The door frame should be also be draughtproofed.

The installation of a draught lobby is subject to a building warrant. Contact the local Building Control Department for guidance on building warrants.

Sources of funding/grants for draughtproofing and further information

There are various grants for loft insulation and draughtproofing and other energy efficiency measures. For details contact the local Energy Efficiency Advice Centre on 0800 512012.