

Please note: From 1 April 2006 insulation values have changed under Part L. Please check insulation U values with a surveyor.

Introduction

You may find the information contained within this leaflet useful if you are contemplating extending into your roof space.

It does not give a definitive interpretation of Building Regulations and you are advised to consult with professionals before submitting plans.

Note: Planning permission may be required for the installation of dormers and roof lights. You should contact the relevant council's planning section for further advice.

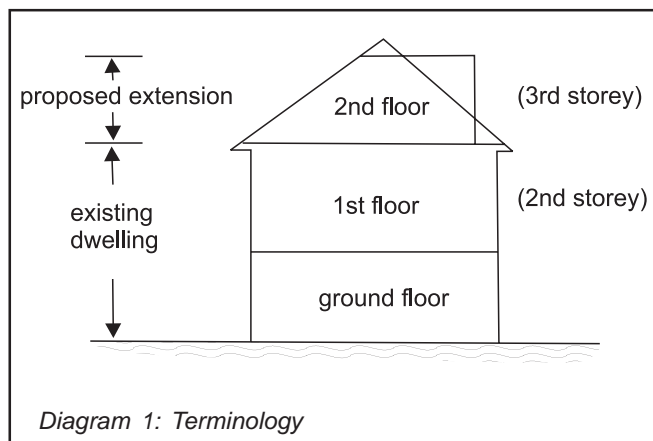
Scope for guidance

THE INFORMATION CONTAINED WITHIN THIS LEAFLET IS APPLICABLE ONLY TO EXISTING TWO STOREY DWELLINGS (diagram 1)

Therefore for other buildings ie:

1. exceeding 2 storeys, or
2. if the proposed works involve raising the roof line above the existing roof level, or
3. the new second storey exceeds 50m² in floor area or,
4. the new second storey contains more than two habitable rooms;

contact the Building Control Surveyor who will be pleased to advise you on any additional requirements.



Structural

Most loft conversions require alterations in one form or another, the extent being dependent upon:

1. The suitability of the existing walls and foundations: Inadequate foundations may require underpinning for which professional advice should be sought.
2. The suitability of the existing roof structure: A trussed roof (diagram 2) may require more extensive alterations than a traditional roof (diagram 3) to make the roof space usable.

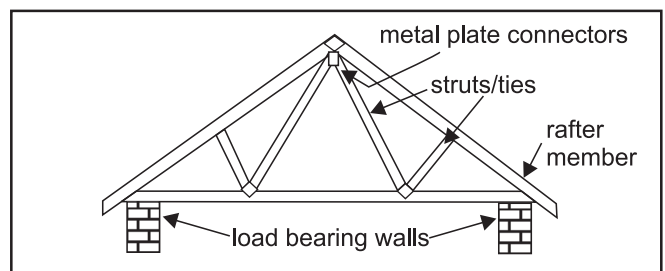


Diagram 2: Trussed roof

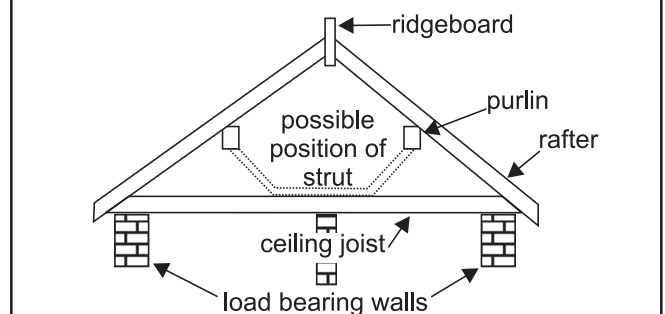


Diagram 3: Traditional construction

• What alterations are required to the roof structure to convert it to a room?

Firstly the ceiling joists are not designed to take the weight of a floor, therefore floor joists of an adequate size will have to be provided. For larger spans steel beams may be included for which structural calculations and details will have to be provided.

To get an idea of floor joist sizes suitable for domestic use see Table 1 overleaf:

Size of joist	Spacing of joist	Clear span of joist
47 x 147mm	400mm	3.04m
47 x 195mm	400mm	4.07m
75 x 145mm	400mm	3.54m
75 x 220mm	400mm	4.94m

Table 1: Joist Spans

Secondly, to obtain a reasonable amount of unobstructed floor space it may be necessary to remove purlins and struts consequently leaving the rafters too small for their span. This problem may be overcome in a number of ways. The simplest way would be to replace the existing rafters with larger suitable rafters. Advice on the size of rafters required, or other solutions, can be discussed with the Building Surveyor or obtained from a suitably qualified person.

Fire safety requirements

As the height of a floor above ground level increases so does the risk of danger from fire. It is necessary, in the interests of maintaining an adequate safe means of escape, to provide the new second floor with 30 minutes fire resistance and protect the staircase enclosure from the effects of fire long enough for the occupants of the 2nd floor to escape.

- **Smoke detection**

A mains operated interlinked smoke detector alarm system should be provided to all floors.

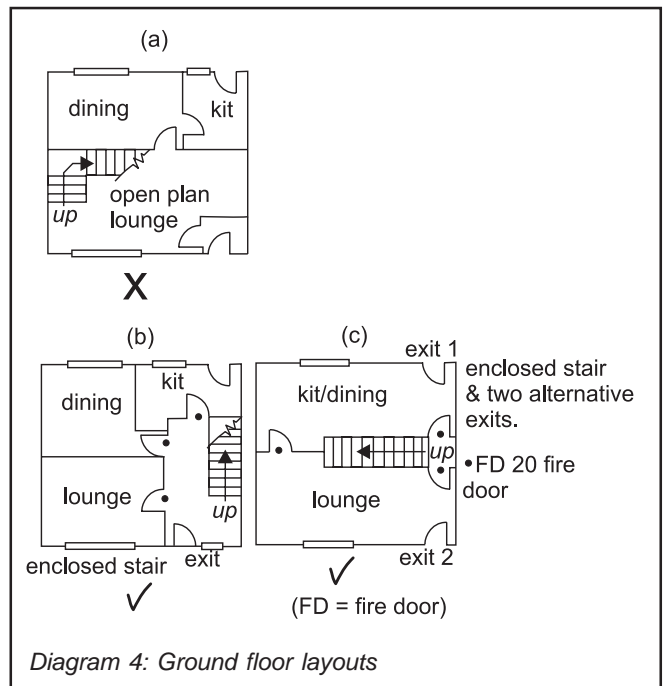
- **How do I make the staircase comply for means of escape purposes?**

All doors leading onto the stairway enclosure must now be FD20 (fire doors).

Walls forming the stairway enclosure are to be 30 minute fire resisting construction, any glazing within the enclosing wall is also to be fire resisting and held in place with suitable glazing beading.

- **I have an open plan ground floor is this acceptable? – diagram 4(a)**

No – the staircase at ground level should be protected with fire resisting construction and either lead to a final exit or give access to two alternative exits as shown in diagrams 4(b & c).



- **Do all doors leading onto the stairway enclosure have to be fitted with self closing devices?**

No. The owner should ensure that the doors are closed to limit fire spread.

For more detailed information on roofs contact STG Building Control.

- **What fire resistance should the new floor have?**

The new floor should have a minimum of 30 minutes fire resistance. This can be achieved by floor boards 21mm thick on floor joists at least 37mm wide with 12.5mm plasterboard with joints taped and filled.

To completely separate the new 2nd storey from the rest of the building the fire resistance of the new floor should be taken into the eaves. Two methods of achieving this are illustrated in diagrams 5a & 5b.

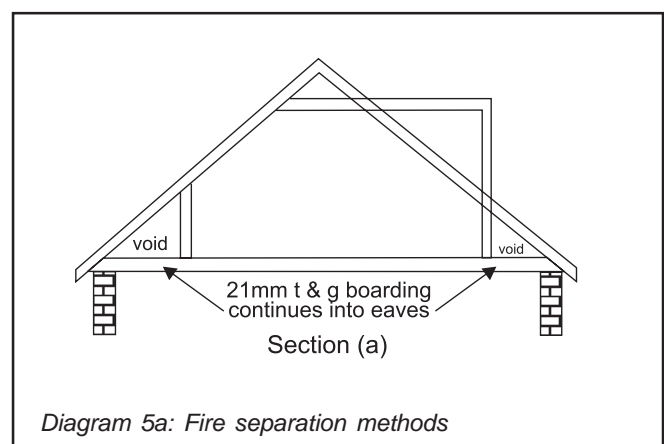
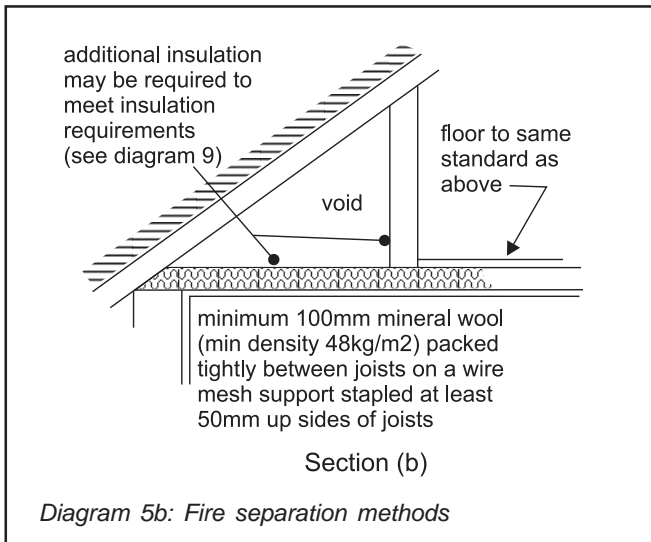


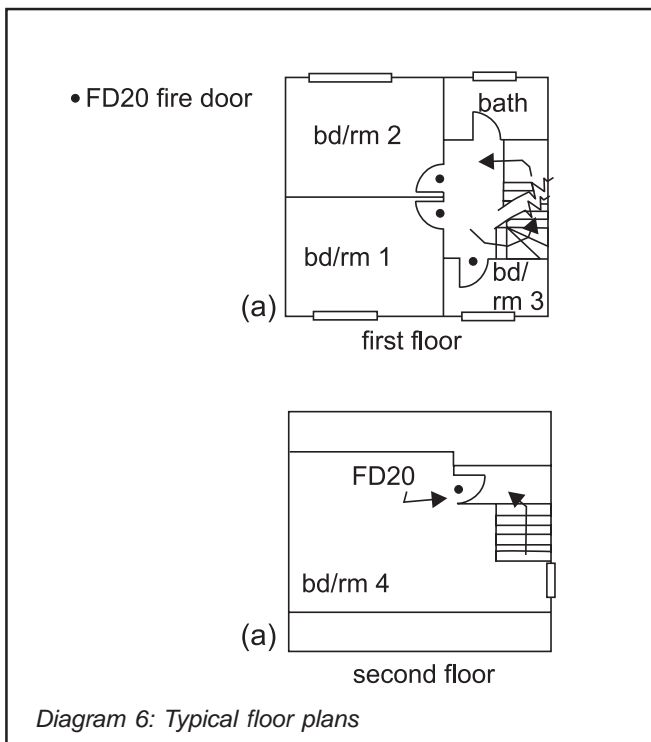
Diagram 5a: Fire separation methods



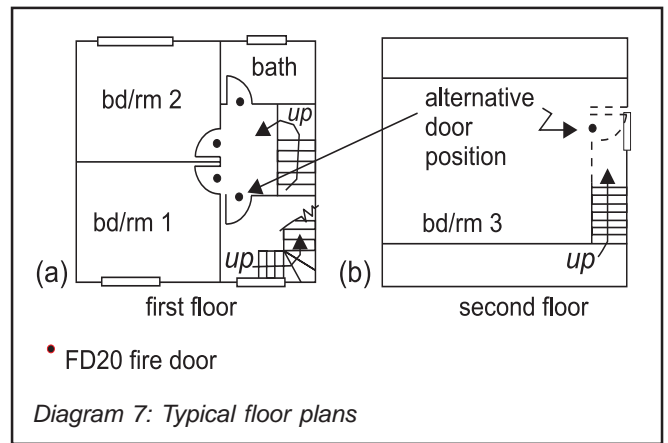
Staircases

Position of new stair

The new staircase from 1st to 2nd floor should preferably be situated within the existing stair enclosure – in which case a self closing fire door should be placed at the top of the new stair (see diagrams 6 a & b).



If it is not possible to provide the new staircase within the existing stair enclosure the new staircase may rise through an existing room separated from the first floor accommodation. (diagram 7a). A fire door should be provided to separate the new stair from the existing stair either at top or bottom of new stair as indicated by ● - diagrams 7a & 7b.



What if there is not enough room for a normal staircase?

If it is impossible to fit a normal staircase due to the lack of space then an alternating tread stair may be acceptable subject to the following conditions:

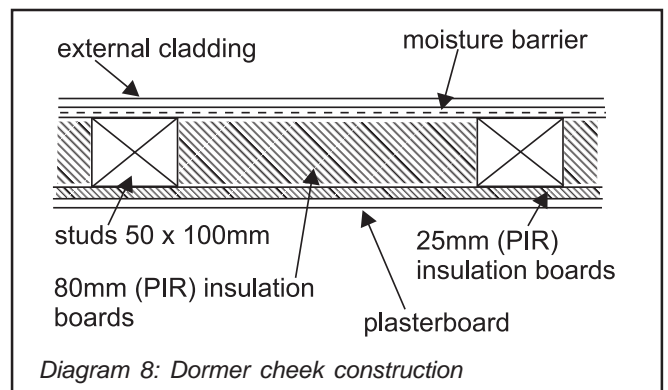
1. the new stair only serves one habitable room,
2. a handrail is provided to both sides of the stair,
3. only straight flights to be used (ie. no winders).

Insulation

How are loft conversions insulated?

The construction indicated below will achieve the required U value of 0.30w/m²K. Alternatively, other ridged/slab insulations are available for the above situation which may achieve an equivalent U value with less thickness – seek manufacturers details.

External walls and dormer cheeks are to be insulated to U value 0.35w/m²K (as per diagram 8). Alternative insulation types and thicknesses may be able to achieve this value.



- Does the existing roof have to be ventilated – if so how?

Yes – As per diagrams 9 and 10.

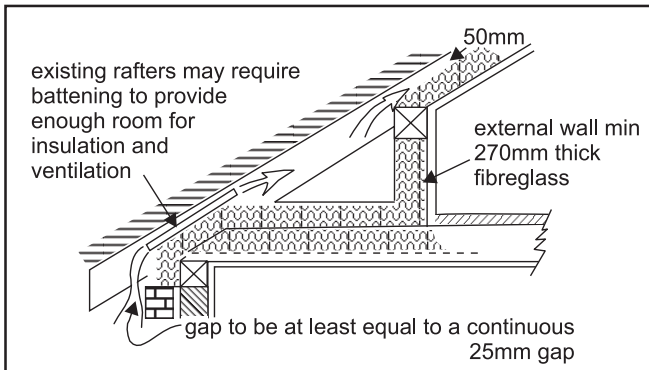


Diagram 9: Eaves ventilation

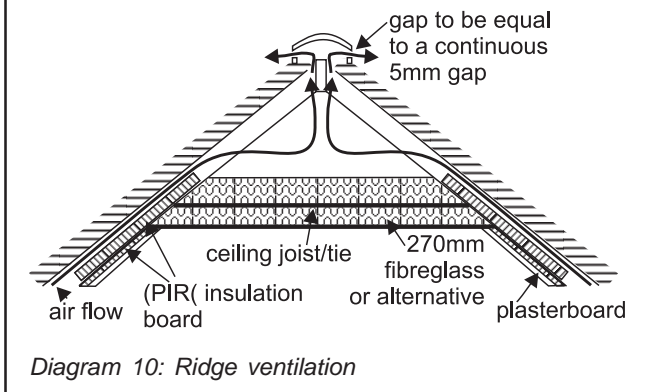


Diagram 10: Ridge ventilation

Ventilation should be provided by the inclusion of vents at the soffit at least equal to a continuous 25mm gap and at the ridge at least equal to a continuous 5mm gap (diagram 10) to enable the movement of air around the roof especially where the ceiling follows the line of the roof (diagram 9) a 50mm void should be provided between the insulation and the underside of the roof covering.

Roof light positions

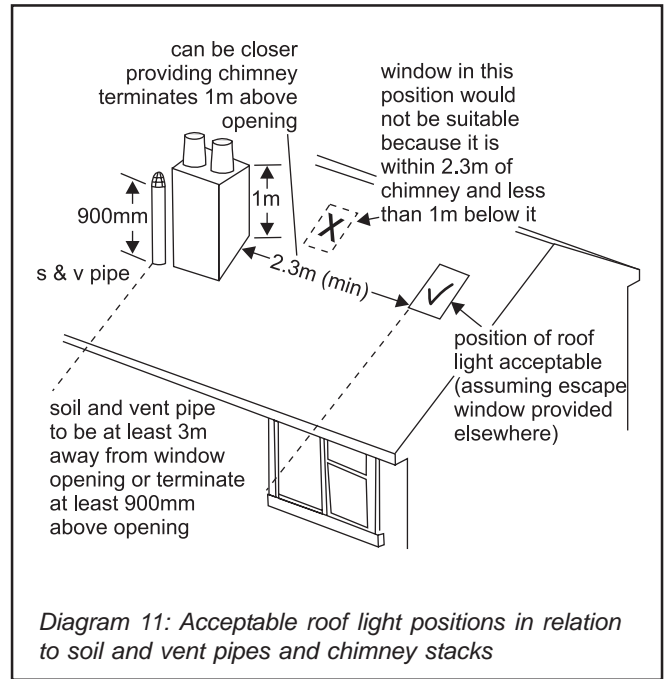


Diagram 11: Acceptable roof light positions in relation to soil and vent pipes and chimney stacks