

# Easy Guide for Small Single-Storey Domestic Extensions



## **Foundations**

Foundations should generally be :-

- A minimum 750mm deep or 1000mm if shrinkable clay type soil.
- 600mm wide.

Please note : precautions should be made for nearby trees, drains or poor ground conditions may also be required, depending upon location.

## **Wall**

Typical wall construction will be 100mm insulating block, 100mm insulation, 100mm brickwork to give a U value not exceeding 0.18W/m<sup>2</sup>K.

Wall ties should be stainless steel type at 750mm horizontal and 450mm vertical centres with 300mm vertical centres at reveals.

Damp proof course (DPC) should be installed a minimum 150mm above ground level, clear cavity should extend 225mm below lowest DPC.

Suitably sized and insulated lintels over opening.

DPC to reveals should be insulated.

For opening up to 4000mm wide a minimum return from corner of 780mm, measured externally, is required. For any opening over 4000mm this will need increasing.

## **Floor**

Typical floor construction will be 150mm blinded, well compacted hardcore, 1200 gauge damp proof membrane (DPM) linked with wall DPC.

Floor insulation requirements to achieve a maximum U value of 0.22 vary depending on the ratio of external wall to floor area (P/A).

Insulation to achieve a U value not exceeding 0.18w/m<sup>2</sup>K.

The insulation can be placed under the concrete or between the concrete and screed.

100mm concrete.

65mm lightly reinforced screed on 500 gauge polythene isolating membrane or wood flooring finish..

## **Roof**

The table at the bottom (table 1) of this easy guide gives guidance on suggested minimum timber sizes for floor joists, ceiling joists, rafters and flat roof joists.

If a truss type roof is to be used these should be designed, braced and fixed in accordance with BS 5268.

The roof should be provided with horizontal lateral support and plate straps at 2.0m centres.

A traditional pitched roof with level ceiling should be insulated to achieve a U value not exceeding 0.15W/m<sup>2</sup>K. This can generally be achieved by providing a total of 250-300mm (depending on the manufacturer) quilt type insulation in two layers, the first laid between the ceiling joists and the second laid at right angles over the joists. The roof should generally be ventilated at eaves equivalent to an area of not less than a continuous strip 10mm wide. If the roof is a mono-pitch also at high level with an equivalent area of not less than a continuous strip 5mm wide.



they must be installed correctly to perform at their best. This entails either draping the membrane between the rafters or using counter battens to help the membrane 'breathe' adequately and using a vapor check eg 500 gauge polythene before plaster-boarding the ceiling. Manufacturers advice should always be sought and followed

A flat roof should be insulated to achieve a U value not exceeding 0.15W/m<sup>2</sup>K. Due to the thickness of insulation needed to achieve this, a warm roof, i.e. rigid board insulation placed on top of the joists is becoming more commonly used. The thickness of insulation needed will depend on the type you decide to use but could be up to 200mm.

As there are several ways of insulating a flat roof, manufacturers advice will often provide a practical solution. If a warm roof is not used, cross ventilation will be required.

A plasterboard ceiling should generally be provided with a 500 gauge polythene vapour check.

### **Windows/Doors**

Windows should be draught proofed and double glazed to achieve a U value not exceeding 1.4mw/m<sup>2</sup>K (e.g. Low E glass and Argon filled) or Window Energy Rating (WER) Band C.

External doors should achieve a maximum U value of 1.4mw/m<sup>2</sup>K.

The door and window openings should be limited to 25% of the extension floor area unless the doors/windows achieve a better U value then the percentage can be adjusted accordingly. The area of any door/window covered by the extension can be taken off the area of doors/windows in the proposal to meet this target.

Glazing in doors and adjacent windows less than 1500mm above ground level and windows less

safety glazing.

and level should have

### **Means of escape in case of fire**

Should the new room not lead directly to the hall approaching the front door, the new window should be sized to allow escape. This will require an unobstructed area of 0.33m<sup>2</sup> with a minimum dimension of 450mm high/wide and positioned between 800-1100mm above ground level to the bottom of the openable part of the window. If the extension does not have its own external door, a fire detection and alarm system to BS 5839-6:2019 should be installed to the property.

### **Ventilation**

Ventilation openings should be provided to each room. There is no minimum size for kitchens, utility rooms or bathrooms but other rooms require a ventilation opening of at least 1/20<sup>th</sup> of their floor area.

Generally, background ventilation is required to habitable rooms at a rate of 8000mm<sup>2</sup> and to kitchens, bathrooms, WCs and utility rooms at a rate of 4000mm<sup>2</sup>.

Suitably sized mechanical ventilation ducted to external air or passive stack ventilation is required to bathrooms and shower rooms (15 litres per second), kitchens (60l/s or 30 if incorporated in a cooker hood), utility rooms (30l/s) and WC's (6l/s).

Internal doors should be provided with a 10mm gap below the door to aid air circulation.

### **Electrics**

All new electrical work should comply with the requirements of Part P of the building

Regulations and be carried out by a competent person.



Soakaways to be installed a minimum 4500mm from any building and at least 2500mm from a boundary.

**Others**

New rooms should be provided with a light fitting that will only accept energy efficient bulbs.

Insulation between all building elements should be linked to prevent thermal bridging.

Controls should be fitted to any new heating to prevent undue energy waste.

Adequate sound resistance is required to certain stud partitions between a WC and living room or between a bathroom and bedroom. Generally a minimum of 50mm insulation quilt between the studs and 15mm plasterboard would be sufficient.

Table 1 Timber Sizes for rafters etc

Joist Span	Floor Joist	Ceiling Joist (mm)	Pitch Rafters 22.5° – 30° (mm)	Flat Roof (max 10° pitch) (mm)
2	47x120 @ 600c/c	38x120 @ 400c/c	38x125 @ 600c/c	38x120 @ 400c/c
2.5	47x145 @ 600c/c	38x145 @ 400c/c	38x150 @ 600c/c	38x145 @ 400cc
3	47x170 @ 400c/c	47x170 @ 600c/c	47x150 @ 400c/c	47x170 @ 600c/c
3.5	47x195 @ 400c/c	47x170 @ 400c/c	47x195 @ 600c/c	47x195 @ 600c/c
4	47x220 @ 400c/c	47x195 @ 400c/c	Purlin needed	47x195 @ 400c/c
4.5	75x195 @ 400c/c	Binder Needed	Purlin needed	47x220 @ 400c/c
5	75x220 @ 400c/c	Binder Needed	Purlin needed	75x220 @ 400c/c

These details are not intended to show you how to comply with the Building Regulations but are produced only as a guide to cover areas known to create problems on site, they show the more common means of achieving compliance with the Building Regulations but are not the only way to comply. If your proposals vary in any way from these details, or you have any queries, you should discuss these with the area Building Control Officer before work commences.

**We only recommend you submit your application using a Building Notice where you/ your builder are fully conversant with the requirements of the Building Regulations. If this is not the case, we recommend you employ a consultant to draw up full plans/ specification and submit a 'Full Plans' application on your behalf.**

Whilst every care has been taken in compiling this information note and the statements contained herein, the publishers and promoters cannot accept responsibility for any inaccuracies

