

# CHAPTER 1: Tolerances

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# FUNCTIONAL REQUIREMENT

## 1.0 INTRODUCTION

This Chapter provides guidance on the required standard of finishes in new homes. It is important that all workmanship carried out during construction is completed in accordance with the relevant tolerances, so that the required finishes are achieved.

## 1.1 MASONRY

### 1.1.1 Brickwork, straightness on plan

There should be a 10mm maximum deviation in any length of wall up to 5m.

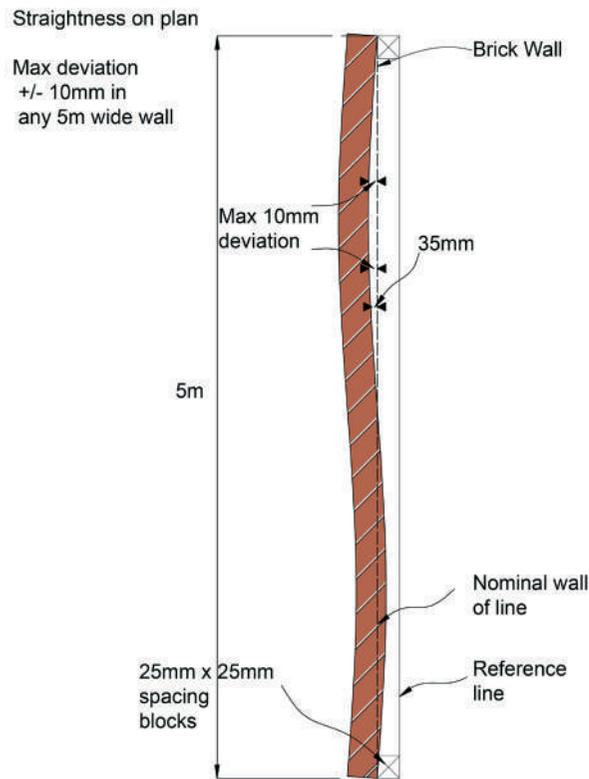


Figure 1: Brickwork, straightness on plan

### 1.1.2 Level of bed joints

A 10mm deviation is suggested for walls 5m long (a pro rata tolerance is applicable for walls less than 5m long). 15mm maximum deviation for walls over 5m long. There should be no recurrent variations in the level of the bed joint line.

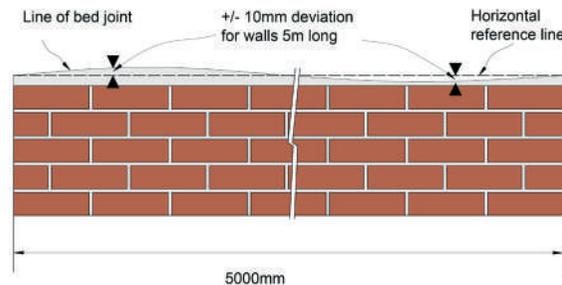


Figure 2: Level of bed joints

### 1.1.3 Thickness of bed joint

The thickness of an individual bed joint should not vary from the average of any eight successive joints by more than 5mm.

### 1.1.4 Perpendicular alignment

Vertical alignments of perpend joints should not deviate drastically from the perpendicular. As a result of the manufacturing process, not all bricks are uniform in length. Therefore, not all perpend

joints will align. However, there should not be a collective displacement of the perpend joints in a wall.

### 1.1.5 Plumb of wall – overall height

There should be a maximum deviation of 20mm in overall height of a wall.

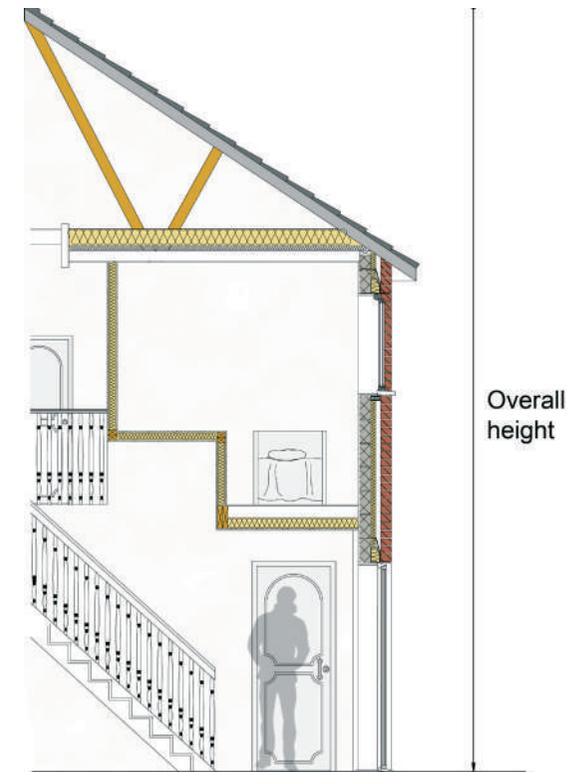


Figure 3: Overall height

### 1.1.6 Plumb of wall – storey height

The maximum deviation is 10mm in a storey height, of approx. 2.5m. Using a 50mm wide spacing block, the plumb bob should be between 40mm and 60mm away from the wall.

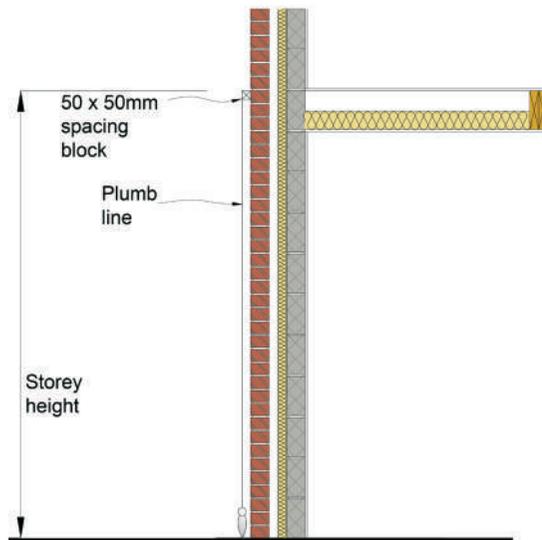


Figure 4: Plumb of wall (storey height)

### 1.1.7 Straightness in section

The maximum deviation is 10mm in any 2.5m height of wall. Using 25mm wide spacing blocks, the masonry line should be anywhere between 15mm and 35mm from the reference line.

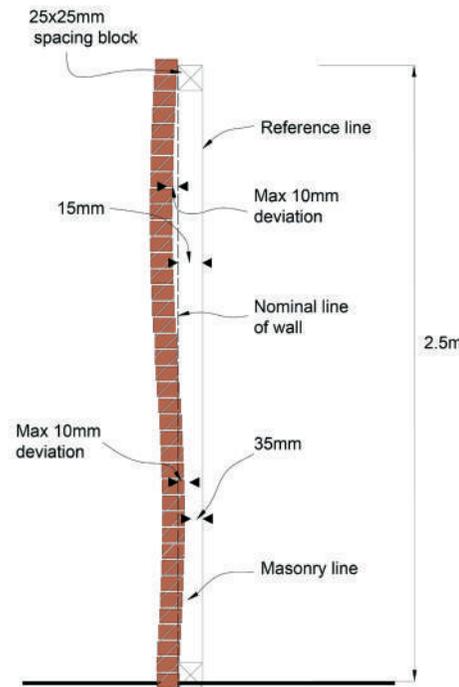


Figure 5: Straightness in section

### 1.1.8 Rendered walls (plain)

Unless otherwise specified, apply the render coats to produce as flat a surface as possible and where appropriate, check the surface by measuring between the face and any point along a 1.8m straight edge placed against it. The flatness of the rendered finish will depend upon the accuracy to which the background has been constructed, the thickness of the render specified and whether

grounds and linings are provided and fixed to a true plane. For render less than 13mm thick, a no tolerance limit is realistic. Significant cracks in the render or other damage such as chips and marks greater than 15mm in diameter are considered as not acceptable.

### 1.1.9 Fair-faced brickwork and blockwork

Fair-faced masonry should be completed to a reasonable level ensuring texture, finish and appearance is consistent. A reasonable appearance for single leaf 102.5mm brick walls should be to have one finished side only. A neat and tidy finish should be provided to the other side. Shrinkage due to drying out could lead to fracturing of unplastered blockwork walls, although cracks of up to 3mm are in general normal due to thermal movement and drying shrinkage.

### 1.1.10 Tile hanging

The uniform appearance is to be kept for panels of tile hanging especially at abutments.

## 1.2 INTERNAL WALLS AND CEILINGS

### 1.2.1 Walls and ceilings (plastered and dry lined)

There should be no sharp differences of more than 4mm in any 300mm flatness of wall; maximum deviation +/- 5mm from 2m straight edge with equal offsets, horizontally and vertically with regards to all wall and ceiling surfaces.

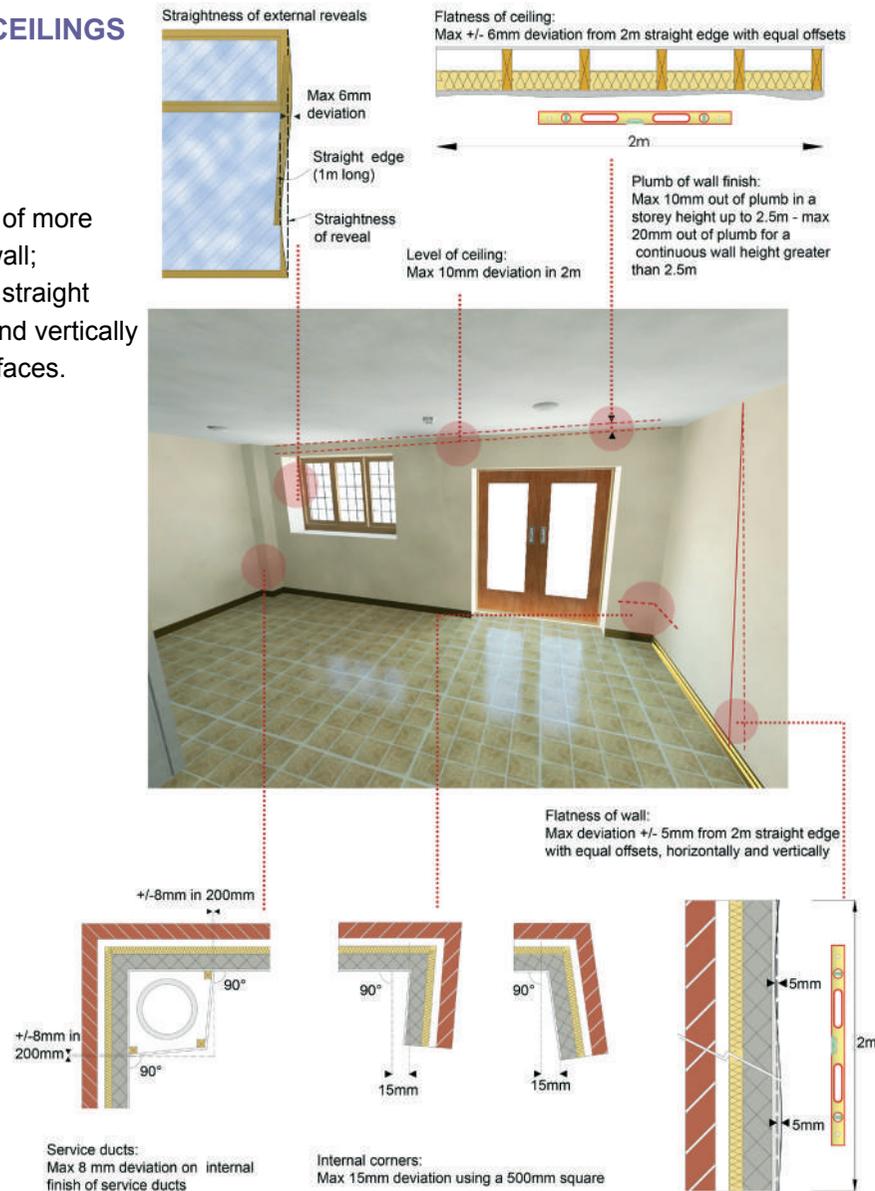


Figure 6: Maximum deviation in walls and ceilings

## 1.3 JUNCTIONS

### 1.3.1 Junctions

Small cracks up to 3mm wide could be visible in the surface at wall, floor and ceiling junctions, if there are changes in the construction materials used as a result of shrinkage and the differential movement of materials.

## 1.4 FLOORS

The level of floors can be a maximum 4mm of out of level per metre up to 6m across, and maximum 25mm across for larger spans. The effects of normal drying shrinkage on screeded floors could cause some fracturing. Shrinkage of timber floors and staircases is a natural occurrence when drying out, this could result in squeaking of materials as they move against each other. This, again is a natural occurrence and cannot be totally eliminated.

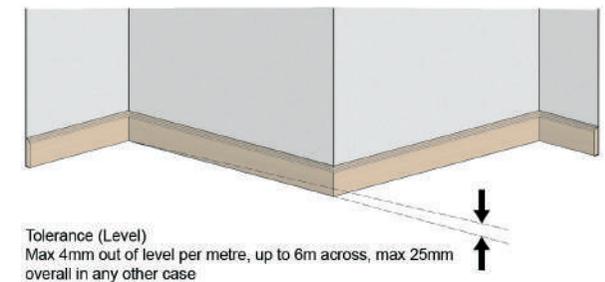


Figure 7: Level of floor

## 1.5 DOORS AND WINDOWS

### 1.5.1 Doors and windows

Reference of +/- 3mm maximum deviation in 1m head and sill.

The maximum out of level tolerance should be 5mm for openings up to 1.5m wide and 8mm for openings more than 1.5m wide Figure 8.

These dimensions are without prejudice to satisfactory performance in terms of weather tightness, exclusion of draughts and fire resistance where appropriate

Door frame should not be distorted in the opening

Max 10mm out of plumb over height of frame (in one direction only)

Door distortion:  
Max 5mm across width  
Max 9mm in height



The gap between the underside of an internal door and unfinished floor (concrete, screed, etc) should be min 5mm and max 22mm

Max 5mm gap between door and head of jamb (for fire doors, use manufacturer's recommendations). For double doors, the gap at the meeting styles should be max 5mm

Figure 8: Gaps and distortion in doors

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Where it is intended for the reveals to be square the following reveals are applicable, maximum +/- 8mm deviation off square into reveal up to 200mm deep.

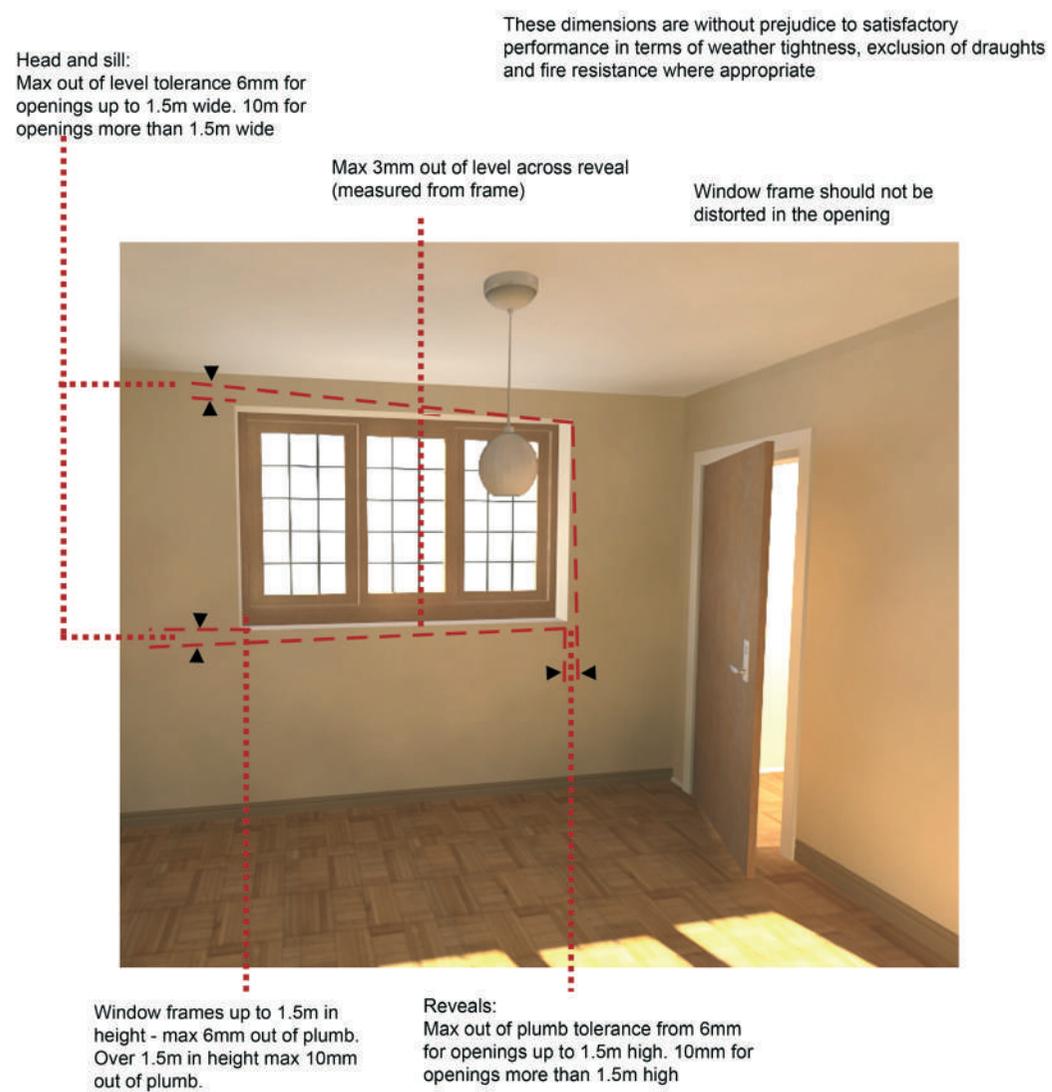


Figure 9: Distortion in windows / reveals

### 1.5.2 Glazing

When viewed in daylight from within the room and at least 2m from the panes (3m for toughened, laminated or coated glass) and looking at right angles through the glass, the details below are acceptable if they are neither obtrusive nor bunched.

- Bubbles or blisters
- Hairlines or blobs
- Fine scratches not more than 25mm long
- Minute particles

The above does not apply within 6mm of the edge of the pane, where minor scratching is acceptable.

### 1.5.3 Scratches on doors, windows and frames

Factory finished door and window components should not have conspicuous abrasions or scratches when viewed from a distance of 2m.

- Surface abrasions caused during the building-in process should be removed in accordance with manufacturer's instructions, which may include polishing out, re-spraying or painting.
- In rooms where there is no daylight, scratches should be viewed in artificial light, fixed wall or ceiling outlets and not from portable equipment.

### 1.6 SKIRTINGS

It is possible that there will be joints in skirtings in long walls. When viewed from a distance of 2m in daylight, joints will need to show a continuous appearance. It is anticipated that there will be some initial shrinkage of the skirting after occupation of the building.

### 1.7 FINISHES AND FITTED FURNITURE

Fitted furniture with doors and drawers should be aligned vertically, horizontally and in plan. They should function as designed to by the manufacturer. Adjacent doors and / or drawers with any gaps between them should be consistent. At the intersection of adjacent worktops, there should not be a visible change in level.

#### 1.7.1 Painted and varnished surfaces

All surfaces should be smooth; nail holes, cracks and splits should not be seen. Colour, texture and finish should be consistent and any joints are to be filled where necessary.

#### 1.7.2 Knots in timber

Some seeping of resin from knots is a natural occurrence and may cause paintwork discolouration both internally and externally.

The standard will be met, providing the Developer finishes the timber in accordance with functional requirements.

### 1.8 EXTERNAL WORKS

#### 1.8.1 Drives and paths – standing water

Surface variation should not exceed a difference of +/- 10mm from a 2m straight edge with equal offsets. Differences in the surface should not exceed +/- 10mm from a 2m straight edge with equal offsets. Some fracturing or weathering may also appear if the material is natural stone due to the make-up of the material. This tolerance applies to principle pathways and driveways to the dwelling which are required to meet the standards of Part M Access to Dwellings.

#### 1.8.2 Covers to the drainage system

Drainage system covers in hard standing areas should line up neatly with the adjacent ground.