

# CHAPTER 10: Finishes

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# FUNCTIONAL REQUIREMENTS

## 10.1 PLASTERWORK

### Workmanship

- i. All workmanship must be within the tolerances defined in Chapter 1 of this Manual.
- ii. All work is to be carried out by a technically competent person in a workmanlike manner.

### Materials

- i. All materials should be stored correctly in a manner that will not cause damage or deterioration of the product.
- ii. All materials, products and building systems shall be appropriate and suitable for their intended purpose.
- iii. The structure shall, unless specifically agreed otherwise with the Warranty provider, have a life of not less than 60 years. Individual components and assemblies, not integral to the structure, may have a lesser durability, but not in any circumstances less than 15 years.

### Design

- i. The design and specifications shall provide a clear indication of the design intent and demonstrate a satisfactory level of performance.
- ii. Surfaces that will be subjected to water from the use of a showerhead over a bath should be tiled or have an appropriate alternative water-resistant finish.
- iii. The materials and construction must meet the relevant regional building regulations.

### Limitations of Functional Requirements

- i. The Functional Requirements are limited by the recommendations applied to the specific areas covered in this chapter.
- ii. These Functional Requirements do not and will not apply to create any policy liability for any remedial works carried out by the contractor or otherwise, nor to any materials used in those remedial works.

## CHAPTER 10: Finishes

**10.1.1 Introduction**

This Chapter covers all plastered finishes to walls and ceilings. Plastered finishes should be applied to a certain standard to receive a suitable decorative finish. It should be durable enough to prevent surface cracking and, if applicable as part of the whole element, meet the required levels of fire and sound insulation in accordance with current Building Regulations.

**10.1.2 Substrate and background**

Plasterwork should be applied to suitable substrates. The substrate may also require additional sealing or bonding agents, in accordance with the requirements set out in BS8481: 2006.

Plaster applied to backgrounds that are susceptible to thermal movement, such as lightweight concrete or aerated blockwork, should be completed in accordance with the block manufacturer's instructions.

Where the background has a mix of varying materials, e.g. blockwork and brickwork, expanded metal should be provided to prevent differential movement in the plaster finish.

**10.1.3 Plaster mixes**

Plaster mix ratios should be in accordance with manufacturer's recommendations and be appropriate for the intended use.

**10.1.4 Minimum plaster thicknesses**

The thickness of plaster will vary depending on the evenness of the substrate. The finished element must meet the tolerances identified in Chapter 1 of this Manual, and be of a suitable quality so that a decorative finish can be applied. Minimum thickness should be in accordance with Table 1.

Element	Minimum number of coats	Typical thickness
Walls - metal lath	3	13mm (nominal)
Blockwork	2	13mm (nominal)
Brickwork	2	13mm (nominal)
Walls - plasterboard	1	Skim to provide suitable and durable finish
Walls - concrete	1	Minimum thickness to provide suitable and durable finish
Ceiling - plasterboard	1	Skim to provide suitable and durable finish
Ceiling - concrete	2	10mm maximum

**Table 1: Thickness of plaster**

**10.1.5 Plasterboard and dry lining****Support of plasterboard**

Supports for plasterboard should be designed so that the following span limits are not exceeded:

Board thickness (mm)	Timber support centres (mm)	Intermediate noggins required	Perimeter noggins required
9.5	400	No	Yes
	450	Yes	Yes
12.5	400	No	Yes
	450	No	Yes
	600	Yes	Yes
15	600	No	No

**Table 2: Plasterboard joints and fixings**

Fix boards with decorative side out to receive joint treatment or a skim plaster finish. Lightly butt boards together and never force boards into position. Install fixings no closer than 13mm from cut edges and 10mm from bound edges. Position cut edges to internal angles whenever possible, removing paper burrs with fine sandpaper. Stagger horizontal and vertical board joints between layers by a minimum of 600mm. Locate boards to the centre line of framing where this supports board edges or ends. Plasterboard should be fixed to timber or metal studs using dry-wall screws. When dry lining, plasterboard can be fixed to walls using adhesive dabs or by screwing to metal or timber battens.

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**Note;** Where adhesive dabs are used the plasterboard manufacturers recommendations must be followed.

Alternatively, a proprietary wall system can be used, providing it has third-party certification. Gaps between boards should not exceed 3mm and consideration should be given to sealing all gaps to improve dwelling air tightness.

# FUNCTIONAL REQUIREMENTS

## 10.2 SECOND AND THIRD FIX FINISHES

### Workmanship

- i. All workmanship must be within the tolerances defined in Chapter 1 of this Manual.
- ii. All work is to be carried out by a technically competent person in a workmanlike manner.

### Materials

- i. All materials should be stored correctly in a manner that will not cause damage or deterioration of the product.
- ii. All materials, products and building systems shall be appropriate and suitable for their intended purpose.
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### Design

- i. The design and specifications shall provide a clear indication of the design intent and demonstrate a satisfactory level of performance.
- ii. The materials, design and construction must meet the relevant regional building regulations.

### Limitations of Functional Requirements

- i. The Functional Requirements are limited by the recommendations applied to the specific areas covered in this chapter.
- ii. These Functional Requirements do not and will not apply to create any policy liability for any remedial works carried out by the contractor or otherwise, nor to any materials used in those remedial works.

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**10.2.1 Ceramic tiling****10.2.1.1 Ceramic wall tiling**

Tiles should be fit for purpose, have a suitable finish and be of an appropriate size and thickness. The installation of the tiling should follow the guidance contained in BS 5385 – 3: 2014 Wall and floor tiling.

**10.2.1.2 Background surfaces**

Background surfaces should be adequate to support ceramic tiles, and as a minimum should:

- Be even, to adequately support the whole tile.
- Be strong and durable enough to support the tile.
- Have sufficient absorbency to ensure that adhesives will stick effectively or a suitable bonding agent applied.
- Be of the same construction type; where two construction types are present, e.g. blockwork and timber stud, light reinforcing should be provided over the junction between the two types.
- Where forming part of a framed wall to a shower enclosure, walk in shower or wet room; moisture resisting plasterboard (or a third party product approved water resistant backer board) should be used for the area of the 'shower enclosure' wall that is to be tiled (up to a height of 1800mm above the floor level). In addition where the enclosure wall forms part of a walk in shower or wet room, the 'surrounding' walls to the enclosure are required to be water proof for a height of 150mm above the floor junction.

**10.2.1.3 Fixing**

Depending on the background, tiles should be fixed using cement mortar or a suitable adhesive purposely designed for ceramic tiling. Tiles to shower enclosures and other areas that will be exposed to water should be fixed with waterproof adhesive.

**10.2.1.4 Grouting**

For shower enclosures where tiling can be saturated, grouting should be cement-based, epoxy resin or a proprietary waterproof product. A sealing method should be specified for the joint between sanitary fittings and adjacent tiling. This is particularly important where movement can take place, e.g. where timber floors are used.

Ensure that design and specification information is issued to Site Supervisors and relevant specialist subcontractors and/or suppliers.

**10.2.1.5 Ceramic floor tiling**

Tile floorings shall provide a suitable surface and be fit for purpose.

The installation of the tiling should follow the guidance contained in BS 5385 – 3: 2014 Wall and floor tiling.

Note the guidance below is for ceramic tiling only and does not apply to other heavier tiles such as Marble, Travertine or stone which would be considered too heavy for a traditional suspended timber floor construction.

**10.2.1.6 Background surfaces**

Background surfaces should be adequate to support ceramic tiles, and as a minimum should be:

- Level and even enough to provide a plane surface; falls should be specified where required.
- Resistant to ground moisture; a Damp Proof Membrane (DPM) should be provided to a ground bearing slab.
- Adequately dry, i.e. at least six weeks drying out time for concrete base, three weeks for screed.
- Movement joints will be required in the tile finishes where they continue over changes in the subfloor construction below. For example; below a door opening in an internal wall, where end bearings of beam and block joists may be found. If the tiled floor finish continues through into another room, a movement joint at the door threshold will be required to prevent cracking in the tiles occurring.
- For internal floors, which might be subjected to significant thermal changes, i.e. direct sunlight in sunrooms, atria or underfloor heating, etc., the floor area should be divided up by intermediate movement joints into bays of size not greater than 40m<sup>2</sup> with an edge length not greater than 8m.

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**10.2.1.7 Tiles on wood-based substrate**

The floor must be fit for purpose and should have adequate stiffness to support the tiles and adhesive.

For floors supported by joists up to 600mm maximum centres, the floor decking should be:

- 18mm exterior grade plywood screwed to the joists at 300mm centres with all square edges supported on joists or noggins. Plywood should be laid with a 1.5mm–2mm movement gap between boards and at abutments or.
- Moisture resistant floor decking overlaid with a minimum 10mm exterior grade plywood fixed to joists at 300mm centres or
- A combination of one of the above with a proprietary separating/de-coupling layer, tile backer board or tile bedding reinforcement sheet used in accordance with third party product approved manufacturer's recommendations.
- The length of screw fixings should be at least 2.5 times the thickness of the combined decking material to ensure adequate penetration into the timber sub-floor or joist / strut supports.
- Additional solid timber strutting between the joists will be required to assist in stiffening the floor construction for the entire span of the joists between supports, this may include strutting beyond the area of the tiled room e.g. if the joist span continues over a landing area.
- Tiles should be suitable for laying over a timber base and deformable (flexible) tile adhesive (e.g. C2S1), and grout should be used in accordance with the adhesive manufacturer's recommendations.

- Tiles must be laid to a level finish except where required in a walk in shower / wet room, see 10.2.1.7

**10.2.1.7 Walk in showers and wet rooms floors**

The floor areas to a walk in shower or wet room (where the floor area is part of the shower floor) is required to be water proof and drained, a timber floor deck substrate is not recommended. The floor deck must be a water stable component with a third party product approval confirming its use for this situation.

- The fall to the wet room area floor must prevent ponding and should be between 1:80 to 1:100 to a drainage point.
- The floor drainage point must be maintainable and adequate in size to take the intended water flow from the shower head without flooding occurring.
- Due to the need for a fall in the finished tiled surface to an outfall a suitable threshold may be necessary at the wet room door opening (which gives access to the rest of the accommodation).

**10.2.2 Floor finishes****Screeding**

Screeds should be fit for purpose, have a suitable finish and be of an appropriate thickness.

**Background surfaces**

Background surfaces where screeds are being supported should meet the following requirements:

- **Bond**  
Background surfaces for bonded screeds should provide an adequate mechanical key. If necessary, cement grouting or a bonding agent should be specified to provide adequate adhesion.
- **Moisture protection**  
The floor design should ensure that moisture from the ground does not enter the dwelling.
- **Screed mix**  
Cement and sand screeds should have a mix ratio of between 1:3 and 1:4.5.

Proprietary additives should have been assessed and have third-party certification.

Surface	Minimum thickness at any point (mm)
Laid monolithically with base	12
Laid and bonded to a set and hardened base	20
Laid on a separating membrane (e.g. 1000g polyethylene)	50
Laid on resilient slabs or quilts (screed reinforced with galvanised wire mesh)	65

**Table 3: Screed thickness required**

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Where service pipes are bedded in the screed, the screed should be deep enough to provide at least 25mm of screed cover over service pipes, insulation and reinforcing.

#### 10.2.2.1 Maximum areas of screed

Screeds should be laid room by room. Unreinforced screeds should have a maximum area of 40m<sup>2</sup>. Expansion joints should be provided and consistent with joints in the floor slab below.

#### 10.2.2.2 Curing

Screeds should be cured naturally and should not be covered for at least three weeks.

#### 10.2.2.3 Finishing of screeds

Screed should provide an even surface as appropriate, as defined in Chapter 1 of this Manual. Concrete floor slabs may be suitably finished to serve directly as a wearing surface without the need for an additional topping, in accordance with the recommendations of BS 8204. If required, surface sealers or hardeners should only be used in accordance with the manufacturer's instructions.

#### 10.2.2.4 Insulation

Insulation below screeds should have enough compressive strength to support the screed. Damp Proof Membranes should be installed in the correct positions, as indicated by the insulation manufacturer's instructions. Sound insulation should be installed in accordance with the manufacturer's instructions.

#### 10.2.2.5 Building services

Where building services pass through the screed e.g. underfloor heating, allowance should be made for thermal movement between the screed and the service, and so that service pipes can resist chemical attack from the screed.

### 10.2.3 Painting and decorating

#### 10.2.3.1 Timber

Painting or staining of external timber is required to provide protection and stability, even if the timber is preservative treated. Timber with moisture content greater than 18% is not suitable for painting or staining.

The paint and stain systems specified should be compatible with any timber preservatives and timber species used.

Where windows and doors are to be stained, proprietary sealants and beads should be used in glazing rebates in accordance with the manufacturer's instructions as an alternative to linseed oil putty.

#### Staining

Timber should be stained in accordance with the manufacturer's recommendations.

#### Painting

Painting of timber should consist of at least one primer coat, one undercoat and one finish coat, or alternatively in accordance with the manufacturer's instructions.

#### 10.2.3.2 Masonry and rendering

External brickwork and render should be dry before paint is applied, and paint systems for external brickwork or render should be applied in accordance with the manufacturer's instructions.

#### 10.2.3.3 Metal

Internal and external structural steel should be protected with at least two coats of zinc phosphate primer. A decorative paint finish may then be applied.

Internal and external steel that has been galvanised to a rate of at least 450g/m<sup>2</sup> is acceptable without further protection. Steel galvanised to a rate of less than 450g/m<sup>2</sup> should be protected with at least two coats of zinc phosphate primer and a suitable decorative finish, where required.

Intumescent paint coverings must be applied in accordance with the manufacturer's instructions.

#### 10.2.3.4 Plaster and plasterboard

Plaster and plasterboard surfaces should be prepared and made ready for decorating in accordance with the manufacturer's instructions.