

Blake Architects Limited

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# Crockwell Farm

21.02

Crockwell New Builds

Stage 4

0

10-11-2022

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# F10

## Block walling

### Clauses

#### 36 Concrete common blockwork

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1. Description: Inner skin of cavity walls.  
Internal structural walls (Fire Place)  
Outer skin below ground level
2. Blocks: To BS EN 771-3.
  - 2.1. Manufacturer: 100mm Light aircrete blockwork - Thermalite Shield Block 3.6N (0.15 W/m.k)
  - 2.2. Product reference: 100mm Light aircrete blockwork - Thermalite Shield Block 3.6N (0.15 W/m.k)  
  
Below ground level: Contractors choice  
  
215mm Fireplace wall: Contractors Choice (**to Structural Engineers requirements**)
  - 2.3. Configuration: Group 1
  - 2.4. Compressive strength: 3.6 N/mm<sup>2</sup>
  - 2.5. Category: I
  - 2.6. Freeze/ thaw resistance: Suitable for exposed external use below dpc (Where applicable)
  - 2.7. Thermal properties: Thermal conductivity: 0.15 W/mK or better
  - 2.8. Work sizes (length x width x height): 440 x 100 x 215 mm (Internal walls)  
440 x 140 x 215mm (outer walls below ground level)  
440 x 215 x 215mm (Fire place)
    - 2.8.1. Tolerance category: D1
3. Mortar: As section Z21.
  - 3.1. Standard: To BS EN 998-2
  - 3.2. Mix: 1:1:5½ cement:lime:sand 4 N/mm<sup>2</sup> (class M4) generally.  
1:½:4½ cement:lime:sand 6 N/mm<sup>2</sup> (class M6) below DPC
4. Bond: Half lap stretcher

#### 51 Basic workmanship

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1. Bond where not specified: Half lap stretcher.
2. Mortar joints: Fill all vertical joints. Lay bricks, solid and cellular blocks on a full bed.
3. AAC block thin mortar adhesive and gypsum block adhesive joints: Fill vertical joints. Lay blocks on a full bed.
4. Clay block joints
  - 4.1. Thin layer mortar: Lay blocks on a full bed.
  - 4.2. Interlocking perpend: Butted.
5. Quoins and advance work: Rack back.
6. Locations for equal levelling of cavity wall leaves
  - 6.1. Every course containing vertical twist type ties or other rigid ties.
  - 6.2. Every third tie course for double triangle/ butterfly ties.
  - 6.3. Courses in which lintels are to be bedded.
7. Lift height (maximum) for walling using cement gauged or hydraulic lime mortar: 1.2 m above any other part of work at any time.

8. Daily lift height (maximum) for walling using cement gauged or hydraulic lime mortar: 1.5 m for any one leaf.
9. Lift height (maximum) for walling using thin layer mortar: 1.3 m above any other part of work at any time.

## **60 Alterations/ Extensions**

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1. Coursing: Line up with existing work.
2. Block bonding new walls to existing: Unless agreed otherwise cut pocket requirements as follows:
  - 2.1. Width: Full thickness of new wall.
  - 2.2. Depth (minimum): 100 mm.
  - 2.3. Vertical spacing: As follows:
  - 2.4. Brick to brick: 4 courses high at 8 course centres.
  - 2.5. Block to block: Every other course.
  - 2.6. Pocket joints: Fully filled with mortar.
3. New and existing facework in the same plane: Bonded together at every course to achieve continuity of bond and coursing.
4. Support of existing work: Fully consolidate joint above inserted lintel or masonry with semidry mortar to support existing structure.

## **66 Fire stopping**

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1. Avoidance of fire and smoke penetration: Fit tightly between cavity barriers and masonry. Leave no gaps.

Ω End of Section

## F20 Natural stone rubble walling

To be read with preliminaries/ general conditions.

### 6 Structural design provided

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1. Description: David Partridge Ltd
2. Requirements
  - 2.1. Generally: As structural drawings
3. Workmanship supervision and control: As required by the designated code of practice for Class 2 execution control.

### 10 Rubble walling

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1. Description: COURSED (courses with varying heights)  
Tumbled finish
2. Stone: To BS EN 771-6
  - 2.1. Name (traditional): Ironstone
  - 2.2. Colour: Buff/Orange
  - 2.3. Supplier: Johnstone Quarry Group or alternative local supplier. (Great Tew Quarry)
    - 2.3.1. Product reference: Ironstone building stone
  - 2.4. Size: 100-110mm deep  
Mix of heights: 65mm/90mm/115mm and 140mm
  - 2.5. Quality: Seasoned and free from cracks, vents, fissures or other defects deleterious to strength, durability or appearance.
3. Mortar: As section Z21.
  - 3.1. Standard: To BS EN 998-2
  - 3.2. Mix: 1:2-3 NHL 3.5 hydraulic lime:sand generally
  - 3.3. Sand: To BS EN 13139; crushed stone graded to approval
4. Joints: Flush; brushed
5. Other requirements: : **Planning Conditions:**  
**The stone from the demolition of the existing buildings shall be removed and stored undercover for re-use in the construction of the dwellings granted consent by application 21/01254/REM.**

**The external walls of the development shall be constructed in natural ironstone which shall be laid, dressed, coursed and pointed using a lime-based mortar with brushed or rubbed joints in accordance with a sample panel (minimum 1 metre squared in size) which shall be constructed on site to be inspected and approved in writing by the Local Planning Authority before the stonework is commenced. The sample panel shall be constructed in a position that is protected and readily accessible for viewing in good natural daylight from a distance of 3 metres. The panel shall be retained on site for the duration of the construction contract.**

### 20 Laying generally

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1. Absorbent stones: Dampen in warm weather to reduce suction.
2. Mortar joints
  - 2.1. Laying: Full bed of mortar with all joints and voids filled.

- 2.2. Appearance: Neat and consistent.
- 3. Natural bed of stones: Appropriate to properties of stones and positions in walling.
- 4. Appearance and bonding: Consistent overall appearance, good bond, and satisfactory junctions and joints with built-in elements and components.
  - 4.1. Random walling: Avoid long continuous vertical joints.
  - 4.2. Quoins and jambs: Large stones dressed to a regular shape.
- 5. Cleanliness: Keep facework clean.

## **25 Walling below ground level**

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- 1. Extent of facework below finished level of adjoining ground or external works (minimum): 150 mm.

## **30 Cavity walls**

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- 1. Regularity: Dress stones to give consistent leaf thickness and maintain full cavity width.

## **40 Brushed finish to joints**

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- 1. General: After the initial set has taken place, brush joints to remove laitance/ excess fines and give a coarse texture.

Ω End of Section

## F21

# Natural stone/ ashlar walling/ dressings

## Types of walling/ dressings

### 110 Ashlar

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1. Description: DRESSINGS: Quoins
2. Stone: To BS EN 771-6.
  - 2.1. Name (traditional): Ironstone
  - 2.2. Colour: Matching to stone walling as F20
  - 2.3. Origin: Matching to stone walling as F20
  - 2.4. Finish: Matching to stone walling as F20
  - 2.5. Supplier: Matching to stone walling as F20
  - 2.6. Unit dimension tolerances: Category D1
  - 2.7. Compressive strength
    - 2.7.1. Mean value (minimum): Refer to Supplier
    - 2.7.2. Category: I
  - 2.8. Additional requirements: Provide Samples for sign off by Client
  - 2.9. Quality: Free from vents, cracks, fissures, discolouration, or other defects deleterious to strength, durability or appearance. Before delivery to site, season thoroughly, dress and work in accordance with shop drawings prepared by supplier.
3. Mortar: As section Z21.
  - 3.1. Standard: Matching to stone walling as F20
  - 3.2. Mix: Matching to stone walling as F20
  - 3.3. Sand: Matching to stone walling as F20
4. Joints: Flush.
  - 4.1. Width: 3 mm
  - 4.2. Pointing: Matching to stone walling as F20
5. Planning Requirements: **The external walls of the development shall be constructed in natural ironstone which shall be laid, dressed, coursed and pointed using a lime-based mortar with brushed or rubbed joints in accordance with a sample panel (minimum 1 metre squared in size) which shall be constructed on site to be inspected and approved in writing by the Local Planning Authority before the stonework is commenced. The sample panel shall be constructed in a position that is protected and readily accessible for viewing in good natural daylight from a distance of 3 metres. The panel shall be retained on site for the duration of the construction contract.**

## General/ production

### 250 Cutting and dressing of stone

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1. Timing: After seasoning but before delivery to site.
2. Accuracy
  - 2.1. Exposed and joint surfaces: Square, true planes free from hollow or rough areas.
  - 2.2. Dimensions: Maintain specified joint widths.
3. Orientation for natural bed of stones: Appropriate to properties of stones and positions in walling/ dressings.

## 260 Identification of stone units

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1. Marking: Clearly and indelibly on concealed faces to indicate the natural bed and position in the finished work.

## Laying and jointing

### 300 Reference panels

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1. General: Complete areas of specified walling types and obtain approval of appearance before proceeding.
2. Walling type: Ironstone walls with Quoin dressings
  - 2.1. Location: Ground Floor Level
  - 2.2. Size: approx. 2x2m

### 315 Adverse weather

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1. General: Do not use frozen materials or lay on frozen surfaces.
2. Air temperature: Do not lay stones:
  - 2.1. In cement gauged mortars: At or below 3°C and falling or below 1°C and rising.
  - 2.2. In hydraulic lime:sand mortars: At or below 5°C and falling or below 3°C and rising.
3. Temperature of walling during curing: Above freezing until mortar hardened.
4. Newly erected walling: Protect at all times from:
  - 4.1. Rain and snow.
  - 4.2. Drying out too rapidly in hot conditions and in drying winds.

### 325 Laying generally

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1. Stone selection: Do not use units with damaged faces or arrises.
2. Accuracy
  - 2.1. Courses: Level and true to line.
  - 2.2. Faces, angles and features: Plumb.
  - 2.3. Setting out: Achieve satisfactory junctions and joints with adjoining or built-in elements and components.
3. Absorbent stones: Dampen in warm weather to reduce suction. Do not soak.
4. Mortar joints
  - 4.1. Laying: Full bed of mortar with all joints and voids filled.
  - 4.2. Temporary distance pieces: Lead or stainless steel. Remove when mortar is sufficiently strong.
  - 4.3. Appearance: Neat and consistent.
5. Cleanliness: Keep facework clean. Rubbing and other abrasive or chemical cleaning methods to remove marks and stains not permitted.

### 330 Walling below ground level

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1. Extent of facework below finished level of adjoining ground or external works (minimum): 150 mm.

### 340 Putlog scaffolding

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1. Use: Not permitted.

### 350 One piece sills/ Thresholds

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1. Bed joints: Leave open except under:



- 1.1. End bearings.
- 1.2. Masonry mullions.
2. Pointing on completion: Mortar to match adjacent work.

### **360 Openings**

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1. Method of forming: Rigid templates, accurately fabricated to the required size.

### **370 Joggle joints**

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1. General: Fill with bedding mortar. Tamp to expel air.

### **390 Pointing**

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1. Joint preparation: Rake out to depth of 7-10 mm as work proceeds. Remove debris. Dampen surface.
2. Mortar application: Neat and consistent.

Ω End of Section

## F30

# Accessories/ sundry items for brick/ block/ stone walling

To be read with preliminaries/ general conditions.

## 5 Cavities

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1. Concrete fill to base of cavity:
2. Concrete generally: To BS EN 206 and BS 8500-2.
3. Concrete type: Standardized prescribed ST2
  - 3.1. Workability: High.
4. Extent: Maintain 75 mm between top of fill and external ground level and a minimum of 225 mm between top of fill and ground level dpc.
5. Placement: Compact to eliminate voids.
6. Cleanliness: Keep cavity faces, ties and dpcs free from mortar and debris.

## 7 Perpend joint weep holes

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1. Form: Open clear perpend joint.
2. Locations: Through outer leaf, immediately above base of cavity, at cavity trays, stepped dpcs and over openings. 75 mm above top of cavity fill at base of cavity.
3. Provision: At not greater than 1000 mm centres and not less than two over openings.

## 10 Full fill cavity insulation

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1. Insulation: Glass wool batts to BS EN 13162
  - 1.1. Product certification: British Board of Agrément (BBA) Certificate no:95/3212
2. Manufacturer: Knauf Insulation Ltd
  - 2.1. Product reference: Knauf Insulation DriTherm® Cavity Slab 32

**Note: alternative wall build up and specification shown on drawing 21.02.04.11 using Celotex CW4000 Insulation (Contractors choice)**

3. Face size: 1200x455mm
4. Thickness: 150mm
5. Thermal conductivity: 0.032 W/(m•K)
6. Reaction to fire class: Euroclass A1 to BS EN 13501-1
7. Placement: Continuous and free of mortar and debris.

## 24 Cavity wall ties

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1. Description: FOR ALL CAVITY WALLS
2. Standard: To BS EN 845-1.
  - 2.1. Type: 2 (Masonry general purpose)
3. Manufacturer: Ancon
  - 3.1. Product reference: Teplo-BF2 Wall Tie
4. Material/ finish: Composite with basalt fibres
5. Sizes: 275 mm (to suit 150mm cavity)
6. End types: Moulded safety ends
7. Embedment length (minimum): 50 mm

## 54 Gas resistant dpcs/ cavity trays

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1. Manufacturer: Visqueen
  - 1.1. Product reference: Visqueen Zedex CPT High Performance Damp Proof Course

## 66 Installation of horizontal dpcs

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1. Placement: In continuous lengths on full even bed of fresh mortar, with 100 mm laps at joints and full laps at angles.
2. Width: At least full width of masonry leaf. Edges of dpc not covered with mortar or projecting into cavity.
3. Overlying construction: Immediately cover with full even bed of mortar to receive next masonry course.
4. Overall finished joint thickness: As close to normal as practicable.
5. Ground level dpcs joint with damp-proof membrane: Continuous and effectively sealed.
6. Low level dpcs in external walls: Install not less than 150 mm above adjoining finished ground level.
7. Sill dpcs form and placement: In one piece and turned up at the back when the sill is in contact with inner leaf.
8. Dpcs crossing cavity: Provide support to prevent sagging.

## 72 Installation of gas resistant dpcs/ cavity trays

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1. Joint treatment: Use continuous length wherever possible, otherwise lap at least 150 mm and seal to form gas and watertight installation.
2. Joint with damp-proof membrane: Overlap dpc/ cavity tray not less than 150 mm.

## 74 Installation of vertical dpcs

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1. Form: In one piece wherever possible.
  - 1.1. Joints: Upper part overlapping lower not less than 100 mm.
2. Dpcs to jambs of openings: Fully lap behind cavity tray/ lintel at head and over horizontal dpc at sill. Project not less than 25 mm into cavity and maintain full contact with frames.
3. Fixing of jamb dpcs to back of built in timber frames: Secure using galvanized clout nails or staples.

## 75 Installation of site formed cavity trays

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1. Requirements to prevent downward ingress of water
  - 1.1. Profiles: To match those shown on drawings. Firmly secured.
  - 1.2. Joint treatment: Use continuous length wherever possible, otherwise lap at least 100 mm and seal to produce a free draining and watertight installation.
  - 1.3. Horizontal cavity trays: Support using cavity closer.
  - 1.4. Sloping cavity trays: Prevent sagging.
  - 1.5. Cleanliness: Free from debris and mortar droppings.

## 76 Movement joints with sealant

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1. Joint preparation and sealant application: As section Z22.
2. Filler: Contractors Choice
  - 2.1. Placement: Build in as work proceeds ensuring no projections into cavities and to correct depth to receive sealant system.
3. Sealant: ISO 11600-F-25LM to be agreed with Supplier
  - 3.1. Colour: to match mortar of wall

Ω End of Section

# G20

## Carpentry/ timber-framing/ first fixing

### Clauses

#### 2 Timber procurement

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1. Timber (including timber for wood-based products): Obtained from well-managed forests/ plantations in accordance with:
  - 1.1. The laws governing forest management in the producer country or countries.
  - 1.2. International agreements such as the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).
2. Documentation: Provide either in accordance with chain of custody certification scheme requirements:
  - 2.1. Documentary evidence (which has been or can be independently verified) regarding the provenance of all timber supplied. or
  - 2.2. Evidence that suppliers have adopted and are implementing a formal environmental purchasing policy for timber and wood-based products.

#### 5 Structural softwood

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1. Description: To Structural Engineers specification
2. Grading standard: To the appropriate BS EN 14081-1-compliant standard.

#### 7 Structural hardwood

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1. Description: To Structural Engineers Specification

#### 10 Ungraded softwood

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1. Description: FOR INTERNAL NONSTRUCTURAL USE
2. Quality of timber: Free from decay, insect attack (except pinhole borers) and with no knots wider than half the width of the section.
3. Surface finish: Regularized
4. Treatment: None required

#### 30 Selection and use of timber

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1. Timber members damaged, crushed or split beyond the limits permitted by their grading: Do not use.

#### 32 Notches, holes and joints in timber

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1. Notches and holes: Position in relation to knots or other defects so that the strength of members will not be reduced.
2. Scarf joints, finger joints and splice plates: Do not use without approval.

#### 35 Processing treated timber

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1. Cutting and machining: Carry out as much as possible before treatment.
2. Extensively processed timber: Retreat timber sawn lengthways, thickened, planed, ploughed, etc.
3. Surfaces exposed by minor cutting/ drilling: Treat with two flood coats of a solution recommended by main treatment solution manufacturer.

## 40 Moisture content

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1. Moisture content of wood and wood-based products at time of installation: Not more than:
  - 1.1. Covered in generally unheated spaces: 24%.
  - 1.2. Covered in generally heated spaces: 20%.
  - 1.3. Internal in continuously heated spaces: 20%.

## 41 Bolt/ screw assemblies

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1. Description: To Structural Engineers Details
2. Nuts and washers: Material grade and finish to suit bolts
3. Washer dimensions: Diameter/ side length of washers in contact with timber faces to be minimum 3 times bolt diameter, with a thickness not less than 0.25 times bolt diameter.

## 43 Bolted joints

---

1. Bolt spacings (minimum): To BS EN 1995-1-1, section 8.5.
2. Holes for bolts: Located accurately and drilled to diameters as close as practical to the nominal bolt diameter and not more than 2 mm larger.
3. Washers: Placed under bolt heads and nuts that would otherwise bear directly on timber. Use spring washers in locations which will be hidden or inaccessible.
4. Bolt tightening: So that washers just bite the surface of the timber. Ensure that at least one complete thread protrudes from the nut.
  - 4.1. Checking: At agreed regular intervals. Tighten as necessary.

## 45 Framing anchors

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1. Manufacturer: To Structural Engineers Details
2. Fasteners: Galvanized or sherardized square twist nails.
  - 2.1. Size: Not less than size recommended by anchor manufacturer.
3. Fixing: Secure using not less than the number of nails recommended by anchor manufacturer.

## 50 Additional supports

---

1. Provision: Position and fix additional studs, noggings and/ or battens to support edges of sheet materials, and wall/ floor/ ceiling-mounted appliances, fixtures, etc. shown on drawings.
2. Material properties: Timber to be of adequate size and have the same treatment as adjacent timber supports.

## 55 Joists generally

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1. Centres: Equal, and not exceeding designed spacing.
2. Bowed joists: Installed with positive camber.
3. End joists: Positioned about 50 mm from masonry walls.

## 60 Joists on hangers

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1. Hangers: Bedded directly on and hard against supporting construction. Do not use packs or bed on mortar.
2. Joists: Cut to leave not more than 6 mm gap at each end. Rebated to lie flush with underside of hangers.
3. Fixing to hangers: A nail in every hole.

## 65 Joist hangers

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1. Description: To Structural Engineers Details
- Blake Architects Limited  
10-11-2022

2. **Size:** To suit joist, design load and crushing strength of supporting construction.

## **70 Trimming openings**

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1. **Trimmers and trimming joists:** Not less than 25 mm wider than general joists.

## **85 Vertical restraint straps**

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1. **Type:** To Structural Engineers Details

## **90 Lateral restraint straps**

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1. **Manufacturer:** To Structural Engineers Details
2. **Straps spanning joists/ rafter/ ties running parallel to wall:** Fix noggings and packs tightly beneath straps.
  - 2.1. **Size of noggings and packs:** Not less than three quarters of joist/ rafters/ tie depth and not less than 38 mm thick.
  - 2.2. **Notching:** Notch joists so that straps fit flush with surface. Do not notch rafters/ ties.
3. **Fasteners:** Not less than four 50 mm x 8 gauge sherardized countersunk screws per strap, evenly spread.

## **95 Strutting to floor joists**

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1. **Type:** One of the following:
  - 1.1. **Herringbone strutting:** At least 38 x 38 mm softwood.
  - 1.2. **Solid strutting:** At least 38 mm thick softwood and at least three quarters of joist depth.
2. **Fixing:** Between joists as follows:
  - 2.1. **Joist spans of 2.5 to 4.5 m:** One row at centre span.
  - 2.2. **Joist spans over 4.5 m:** Two rows equally spaced.
  - 2.3. **Not projecting beyond top and bottom edges of joists.**
3. **Outer joists:** Blocked solidly to perimeter walls.

## **98 Eaves soffit ventilation**

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1. **Soffit boards:** Fixed to leave a continuous ventilation opening not less than 25 mm wide for full length of eaves.
2. **Insect mesh:** 3-4 mm mesh screen fixed across the opening to prevent large insect entry.

Ω End of Section

## H21 Timber weatherboarding

To be read with preliminaries/ general conditions.

### 15 Horizontal timber weatherboarding

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1. Description: To Bin / Bike Stores
2. Backing wall: Timber studs at 400 mm centres and noggings at cross joints
3. Fire performance: Not required
4. Insulation: Not required
5. Sheathing: as Clause K11/38
6. Membrane: As P10/65 (Tyvek DuPont)
7. Battens
  - 7.1. Size: 38 x 38 mm
  - 7.2. Centres: 400 mm
  - 7.3. Fixing: 50 mm x 10 gauge stainless steel c/s screws
8. Boarding
  - 8.1. Standard: To BS EN 14915.
  - 8.2. Quality of timber (exposed surfaces): To BS 1186-3, Class 2
  - 8.3. Species: Oak
  - 8.4. Profile: Tongued and grooved
  - 8.5. Finished face dimension (overall width): 125mm
  - 8.6. Finished thickness: 19mm
  - 8.7. Moisture content at time of fixing: 13-19 %
9. Service life: 30 years.
  - 9.1. Method of fixing to each support: Secret-fixed with 30 mm stainless steel annular ring shank nails
10. Other requirements: Undercut bottom edge of lowest boards to form drip.  
Top edge and each side of weatherboarding to have 10 mm ventilation gap with insect mesh,  
bottom edge of weatherboarding to have 15 mm gap with insect mesh.  
Oak corner posts, return linings and fascia boards.

### 18 Control sample

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1. General: Complete an area of boarding in an approved location and obtain approval of appearance before proceeding.

### 30 Battens/ counterbattens

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1. Timber: Regularized softwood free from decay, insect attack (except ambrosia beetle damage) and with no knots wider than half the section width.
2. Preservative treatment
  - 2.1. Standard: To NBS section Z12 and BWPDA Commodity Specification C6.
  - 2.2. Type: Organic solvent
3. Moisture content: Not exceeding 20% at time of fixing.

### 32 Fixing battens/ counterbattens to framing/ sheathing

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1. Setting out: In straight, vertical lines at centres coincident with vertical framing members.
2. Batten/ Counterbatten length (minimum): 1200 mm.



3. **Installation:** Where sheathing is provided, fix through sheathing into framing. Fastener heads to finish flush with or slightly below batten face.

### **33 Fixing battens to counterbattens**

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1. **Setting out:** In straight, horizontal lines. Align on adjacent areas.
2. **Batten/ Counterbatten length (minimum):** 1200 mm.
3. **Joints:** Square cut, butted centrally on counterbattens and not occurring more than once in any group of four battens on any one counterbatten.
4. **Installation:** Fix each batten to each counterbatten. Use splay fixings at joints. Fastener heads to finish flush with or slightly below batten face.

### **60 Fixing boarding**

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1. **General:** Fix boards securely to give flat, true surfaces free from undulations, lipping, splits, hammer marks and protruding fasteners.
2. **Movement:** Allow for movement of boards and fixings to prevent cupping, springing, excessive opening of joints or other defects.
3. **Heading joints:** Position centrally over supports and at least two board widths apart on any one support.
4. **Nail heads:** Punch below surfaces that will be seen in the completed work.

Ω End of Section

# H31

## Metal profiled/ flat sheet self-supporting cladding/ roof covering

To be read with preliminaries/ general conditions.

### 10 Metal

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1. Description: Roofs to Bin/ Bike Store
2. Support structure: Timber joists and timber battens
  - 2.1. Bearing width (minimum): to manufacturers recommendations.
  - 2.2. Pitch: 22°
3. Cladding/ covering system type: Single-skin
4. External sheets
  - 4.1. Standards, generally: To BS EN 14782
  - 4.2. Material: Galvanised Steel to EN 14782
  - 4.3. Manufacturer: Cladco or Similar
    - 4.3.1. Product reference: 13/3 Corrugated 0.7 Thick Galvanised Roof Sheet
  - 4.4. Thickness (nominal): 0.7mm
  - 4.5. Outer finish/ colour: Polyester paint coat, colour TBC
  - 4.6. Inner finish/ colour: Polyester paint coat, colour TBC
  - 4.7. Accessories: As required to complete installation
5. Breather membrane: As clause 55
6. Profile fillers: As clause 65
7. Primary cladding/ covering sheet fasteners: 65mm Screw with Baz Washer to manufacturers recommendations. With HC19 19mm colour cap.
  - 7.1. Fastener profile location: Crown
  - 7.2. Number of fasteners per sheet width
    - 7.2.1. Eaves and end laps: to manufacturers recommendations.
    - 7.2.2. Intermediate supports: to manufacturers recommendations.
  - 7.3. End laps size (minimum): to manufacturers recommendations.
  - 7.4. Sealing laps
    - 7.4.1. End laps: to manufacturers recommendations.
    - 7.4.2. Side laps: to manufacturers recommendations.
  - 7.5. Stitching laps
    - 7.5.1. End laps: to manufacturers recommendations.
    - 7.5.2. Side laps: to manufacturers recommendations.
8. Spacers: to manufacturers recommendations.
  - 8.1. Fasteners: to manufacturers recommendations.

### Performance requirements

### 35 Prevention of electrolytic action

---

1. Isolating tape: Type recommended by cladding/ covering manufacturer
  - 1.1. Location: To contact surfaces of supports and sheets of dissimilar metals

## 37 Fasteners

---

1. Unspecified fasteners: Recommended for the purpose by the cladding/ covering manufacturer

## 55 Breather membrane

---

1. Standard: To BS EN 13859-1
2. Manufacturer: As P10/65
3. Continuity: No breaks. Minimize joints
  - 3.1. Penetrations and abutments: Fully bond to breather membrane with tape
  - 3.2. Laps: Not less than 150 mm, fully bond with tape
4. Tape: As recommended by breather membrane manufacturer
5. Repairs: Lapped patch of breather membrane material continuously bonded with tape
6. Junctions at flashings, sills, gutters, etc.: Overlap and allow free drainage to exterior

## 65 Profile fillers

---

1. Material: Polyurethane foam filler
2. Manufacturer: Cladco
  - 2.1. Product references: Corrugated 13/3 profiled foam fillers Supaseal (25mm) Black with 6mm base
3. Colour: Black
4. Thickness: 25
5. Fixing method: Self-adhesive tape
  - 5.1. Requirement: To close cavities/ regulate air paths within the external envelope. Tight fit with no unintended gaps

## 70 Fixing generally

---

1. Cut edges: Clean true lines
2. Penetrations: Cut openings to minimum size necessary
  - 2.1. Edge reinforcement: Trimming plates
3. Sheet orientation: Exposed joints of side laps away from prevailing wind
4. Sheet ends, laps and raking cut edges: Fully supported and with fixings at top of lap
5. Fasteners: Drill holes. Position at regular intervals in straight lines, centred on support bearings
  - 5.1. Position of fasteners in oversized drill holes: Central
  - 5.2. Fasteners torque: Sufficient to correctly compress washers
6. Debris: Remove dust and other foreign matter before finally fixing sheets
7. Completion: Check fixings to ensure watertightness and that sheets are secure
8. Cut edges: Paint to match face finish

## 75 Accommodation of thermal movement

---

1. Sheet type/ location: Metal sheets
2. Method: To manufacturers recommendations for installation

## 85 Sealing laps on external sheets

---

1. Sealant tape: Types recommended by sheet manufacturer
  - 1.1. Position: Below fixing positions in straight unbroken lines, parallel to and slightly back from edge of sheet

- 1.2. Number of lines of sealant: In accordance with manufacturer's requirements
2. Seal quality: Effective, continuous and not overcompressed

Ω End of Section

## H62 Natural slating

To be read with preliminaries/ general conditions.

### 3 Roof slating

---

1. Description: To Roof
2. Substrate: Plywood sarking on rafters at 450 mm centres (TBC with Structural Engineer)
3. Pitch: 45°
4. Underlay: As P10/65 (Tyvek DuPont)
  - 4.1. Direction: Parallel to eaves.
  - 4.2. Head-lap (minimum): 150 mm
5. Counter battens
  - 5.1. Size: 38 x 25 mm
  - 5.2. Fixing: 65 x 3.35 mm galvanized annular ring shank nails
6. Battens
  - 6.1. Size: 50 x 25 mm
  - 6.2. Fixing: 63 x 5 mm sherardized steel screws with plastic plugs
7. Slates
  - 7.1. Supplier: Contractor's Proposal
  - 7.2. Product reference: **TBC following samples to match existing Farmhouse on site. Allow to obtain samples.**
  - 7.3. Size: TBC following samples to match existing Farmhouse on site.
  - 7.4. Head-lap (minimum): 55 mm
  - 7.5. Fixing: Two nails each slate.
  - 7.6. Planning Requirements: **Samples of the slates (including ridge tiles) to be used in the covering of the roof of the building(s) shall be submitted to and approved in writing by the Local Planning Authority prior to commencement of those works. The development shall be carried out in accordance with the samples so approved.**

### 25 Underlay

---

1. Handling: Do not tear or puncture.
2. Laying: Maintain consistent tautness.
3. Vertical laps (minimum): 100 mm wide, coinciding with supports.
4. Fixing: Galvanized steel, copper or aluminium 20 x 3 mm extra large clout head nails.
5. Eaves: Where exposed, use an external grade (UV-resistant) underlay or a proprietary eaves support product.
6. Penetrations: Use proprietary underlay seals or cut underlay neatly.
7. Ventilation paths: Do not obstruct.

### 30 Battens/ Counterbattens

---

1. Timber: Sawn softwood.
  - 1.1. Standard: In accordance with BS 5534, Annex D.
  - 1.2. Moisture content at time of fixing and covering (maximum): 22%.

2. Preservative treatment: As section Z12 and Wood Protection Association Commodity Specification C8.
  - 2.1. Type: Organic solvent

## **32 Batten fixing**

---

1. Setting out: Align parallel to ridge in straight horizontal lines to gauge of slates. Align on adjacent areas.
2. Batten length (minimum): Sufficient to span over three supports.
3. Joints in length: Butt centrally on supports. Joints must not occur more than once in any group of four battens on one support.
4. Additional battens: Provide where unsupported laps in underlay occur between battens.

## **35 Slate fixing**

---

1. General: Fix slating and accessories to make the whole sound and weathertight at earliest opportunity.
2. Setting out: To true lines and regular appearance. Lay slates with slightly open (maximum 5 mm) butt joints. Align tails.
3. Slate thickness: Consistent in any one course. Lay with thicker end as tail.
4. Ends of courses: Use extra wide slates to maintain bond and to ensure that cut slates are as large as possible. Do not use slates less than 150 mm wide.
5. Top course: Head-nail short course to maintain gauge.
6. Fixing: Centre nail each slate twice through countersunk holes 20-25 mm from side edges.
  - 6.1. Nails: Copper clout to BS 1202-2 or aluminium clout to BS 1202-3.
  - 6.2. Nail dimensions: Determine in accordance with BS 5534 to suit site exposure, withdrawal resistance and slate supplier's recommendations.

## **40 Mortar bedding/ Pointing**

---

1. Mortar: As section Z21.
  - 1.1. Mix: In accordance with BS 5534, 1:3 cement:sand, with plasticizing admixtures permitted.
2. Weather: Do not use in wet or frosty conditions or when imminent.
3. Appearance: Finish neatly and remove residue.

## **42 Fire separating walls**

---

1. Separating walls: Completely fill space between top of wall and underside of slates with mineral wool quilt to provide fire-stopping.
2. Boxed eaves: Completely seal air paths in plane of separating wall with wire reinforced mineral wool, not less than 50 mm thick, fixed to rafters and carefully cut to shape fire-resisting board and quilt to provide fire-stopping.

## **47 Eaves**

---

1. Underlay support: 12 mm plywood, as section G20
  - 1.1. Continuous to prevent water retaining troughs.
2. Gutter: Dress underlay or underlay support tray to form drip into gutter.
3. Undercourse and first course slates: Fix with tails projecting 50 mm over gutter or to centre of gutter.
4. Accessories: Insect mesh

## 52 Bedded verges with bedded undercloak

---

1. Underlay: Carry 50 mm onto outer leaf of gable wall and bed on mortar.
2. Undercloak: Slates, sloping towards verge and projecting 38-50 mm beyond face of wall.
  - 2.1. Bedding: On mortar identical to that used in gable walling.
3. Slating battens: Carry onto undercloak and finish 100 mm from verge edge.
4. Verge slates: Bed flush with undercloak on 75 mm wide bed of mortar. Point with flush profile.

## 56 Mitred hips

---

1. Underlay: Lay courses over hip. Overlaps (minimum) 150 mm.
2. Mitred slates: Cut extra wide slates and fix to form a straight, close mitred junction.
3. Soakers: Interleave and turn down over head of mitred slates.

## 66 Metal valleys

---

1. Underlay: Cut over tilting fillets to lap onto metal valley. Do not lay under metal.
2. Roof slates: Cut extra wide slates adjacent to valley to fit neatly.
  - 2.1. Valley width between slates: 100 mm

## 70 Side abutments

---

1. Underlay: Turn up not less than 100 mm at abutments.
2. Abutment slates: Cut as necessary. Fix close to abutments.
3. Soakers: Interleave and turn down over head of abutment slates.

## 77 Mortar-bedded and mechanically fixed tile ridges

---

1. Underlay: Lay courses over ridge. Overlap (minimum) 150 mm.
2. Ridge tile fixing battens: To manufacturers recommendations
3. Ridge tiles
  - 3.1. Manufacturer: Contractors proposal
    - 3.1.1. Product reference: Slate Ridge Tile

**Note: Samples of the slates (including ridge tiles) to be used in the covering of the roof of the building(s) shall be submitted to and approved in writing by the Local Planning Authority prior to commencement of those works. The development shall be carried out in accordance with the samples so approved.**

- 3.2. Bedding: On mortar, continuous to edges and solid to joints.
  - 3.3. Fixing: Secure all ridge tiles to ridge boards or ridge tile fixing battens with self-sealing non-ferrous fixings.
  - 3.4. Gable end ridge tiles: Fill ends with mortar and slips of tiles finished flush.
4. Ridge terminals
  - 4.1. Manufacturer: Nicholson Airtrack
    - 4.1.1. Product reference: RTV Ridge Tile Ventilator

Ω End of Section

# H71

## Lead sheet fully supported roof coverings/ flashings

To be read with preliminaries/ general conditions.

### 15 Valley gutter linings to slate/ tile roofs

---

1. Sheet underlay: Building paper to BS 1521, Class A1
2. Lead
  - 2.1. Type: Rolled to BS EN 12588
  - 2.2. Thickness: 1.75 or 1.80 mm (Code 4).
  - 2.3. Laying: Over and beyond tilting fillets. In lengths not more than 1500 mm.
3. Cross joints: Lapped not less than 250 mm.
4. Fixing: Welt edges. Nail top edge of each sheet. Dress bottom edge neatly into eaves gutter.
5. Other requirements:: Saddle flashing at dormer ridge junctions with main roof

### 30 Apron flashings

---

1. Description: To top abutment of Bin/Bike stores
2. Lead
  - 2.1. Type: Rolled to BS EN 12588
  - 2.2. Thickness: 1.75 or 1.80 mm (Code 4).
3. Dimensions
  - 3.1. Lengths: Not more than 1500 mm.
  - 3.2. End to end joints: Laps not less than 100 mm.
  - 3.3. Upstand not less than 75 mm.
  - 3.4. Cover to abutment: Not less than 150 mm.
4. Fixing
  - 4.1. Top edge: Lead wedges into bed joint.
  - 4.2. Bottom edge: Clips.
  - 4.3. Material: Stainless steel
  - 4.4. Spacing: At laps and 500 mm centres

### 45 Step and cover flashings

---

1. Description: To abutments with walls
2. Lead
  - 2.1. Type: Rolled to BS EN 12588
  - 2.2. Thickness: 1.75 or 1.80 mm (Code 4).
3. Dimensions
  - 3.1. Lengths: Not more than 1500 mm.
  - 3.2. End to end joints: Laps not less than 100 mm.
  - 3.3. Upstand: Not less than 85 mm.
  - 3.4. Cover to roof: Not less than 150 mm.
4. Fixing
  - 4.1. Top edge: Lead wedges at every course.
  - 4.2. Bottom edge: Clips.
  - 4.3. Material: Stainless steel



4.4. Spacing: To suit steps

## 50 Flashings

---

1. Description: To roof lights
2. Lead
  - 2.1. Type: Rolled to BS EN 12588
  - 2.2. Thickness: 1.75 or 1.80 mm (Code 4)
3. Dimensions
  - 3.1. Lengths: Not more than 1500 mm.
4. Fixing: Nail top edge at 150 mm centres and welt edge. Clip bottom edge at laps and 500 mm centres.

## 60 Materials and workmanship generally

---

1. Lead production method: Rolled, to BS EN 12588
2. Identification: Colour marked for thickness/ code, weight and type.
3. Workmanship standard: To BS 6915 and latest editions of 'Rolled lead sheet. The complete manual' published by the Lead Sheet Training Academy
4. Fabrication and fixing: To provide a secure, free draining and weathertight installation.
5. Marking out: Do not use scribes or other sharp instruments to mark out lead without approval.
6. Solder: Use only where specified.
7. Finished leadwork: Fully supported, adequately fixed to resist wind uplift but also able to accommodate thermal movement without distortion or stress.
8. Patination oil: Apply smear coating to all visible lead, evenly in one direction and in dry conditions.

## 62 Lead-welding

---

1. In situ lead-welding: Not permitted.

## 64 Sheet underlay

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1. Manufacturer: Contractors Choice
  - 1.1. Product reference: Moisture Resistant Building Paper

## 75 Timber for use with leadwork

---

1. Quality: Planed, free from wane, pitch pockets, decay and insect attack (ambrosia beetle excepted).
2. Moisture content: Not more than 22% at time of fixing and covering. Give notice if greater than 16%.
3. Preservative treatment: Organic solvent as section Z12 and Wood Protection Association Commodity Specification C8.

## 76 Laying sheet underlay

---

1. Handling: Prevent tears and punctures.
2. Laying: Butt or overlap jointed onto a dry substrate.
  - 2.1. Fixing edges: With copper or stainless steel staples or clout nails.
  - 2.2. Do not lay over roof edges.
  - 2.3. Turn up at abutments.
3. Wood core rolls: Fixed over underlay.
4. Protection: Keep dry and cover with lead at the earliest opportunity.

## 78 Fixing lead sheet

---

1. Top edge: Secured with two rows of fixings, 25 and 50 mm from edge.
2. Fixings
  - 2.1. Nails to timber substrates: Copper clout nails to BS1202-2 , or stainless steel (austenitic) clout nails to BS 1202-1.
    - 2.1.1.Shank type: Annular ringed, helical threaded or serrated.
    - 2.1.2.Length: Not less than 20 mm or equal to substrate thickness.
  - 2.2. Screws to concrete or masonry substrates: Brass or stainless steel.
    - 2.2.1.Diameter: Not less than 3.35 mm.
    - 2.2.2.Length: Not less than 19 mm.
    - 2.2.3.Washers and plastics plugs: Compatible with screws.

## 80 Clips

---

1. Material
  - 1.1. Lead clips: Cut from sheets of the same thickness/ code as sheet being secured.
  - 1.2. Copper clips: Cut from 0.70 mm thick sheet to BS EN 1172, temper R220 (soft) or R240 (half hard) depending on position, dipped in solder if exposed to view.
  - 1.3. Stainless steel: Cut from 0.38 mm sheet to BS EN 10088-1, grade 1.4301(304), terne coated if exposed to view.
2. Dimensions
  - 2.1. Width: 50 mm where not continuous.
  - 2.2. Length: To suit detail.
3. Fixing clips: Secure each to substrate with either two screw or three nail fixings not more than 50 mm from edge of lead sheet. Use additional fixings where lead downstands exceed 75 mm.
4. Fixing lead sheet: Welt clips around edges and turn over 25 mm.

## 83 Wedge fixing into joints/ chases

---

1. Joint/ chase: Rake out to a depth of not less than 25 mm.
2. Lead: Dress into joint/ chase.
  - 2.1. Fixing: Lead wedges at not more than 450 mm centres, at every change of direction and with at least two for each piece of lead.
3. Sealant: CT1 Sealant
  - 3.1. Application: As section Z22.

## 98 Welted joints

---

1. Joint allowance: 50 mm overlap, 25 mm underlap.
2. Copper or stainless steel clips: Fix to substrate at 450 mm centres.
3. Overlap: Welt around underlap and clips and lightly dress down.

## 99 Patination oil

---

1. Manufacturer: Contractor's choice
  - 1.1. Product reference: Submit proposals
2. Location: Apply smear coating to all visible lead, evenly in one direction and in dry conditions.
3. Application: As soon as practical, apply a smear coating to lead, evenly in one direction and in dry conditions.

Ω End of Section



## **J40**

# **Flexible sheet waterproofing/ damp-proofing**

To be read with preliminaries/ general conditions.

### **10 Soft blinding to hardcore beds**

---

1. Material: Soft sand
  - 1.1. Thickness (minimum): 50 mm
2. Finish on completion: Smooth, consolidated bed free of sharp projections.

### **35 Loose-laid plastics or rubber gas-retardant membranes**

---

1. Substrate: Blinded hardcore
2. Standard: In accordance with BS 8485
3. Manufacturer: Visqueen
  - 3.1. Product reference: Radon R400 Membrane
4. Thickness/ gauge: 1600 gauge
5. Joints
  - 5.1. Surfaces to be joined: Clean and dry beyond full width of joint.
  - 5.2. Laps (minimum): to manufacturers recommendations
  - 5.3. Sealing: to manufacturers recommendations
6. Accessories: to manufacturers recommendations and necessary to complete installation

### **50 Workmanship generally**

---

1. Condition of substrate
  - 1.1. Clean and even textured, free from voids and sharp protrusions.
  - 1.2. Moisture content: Compatible with damp-proofing/ tanking.
2. Air and surface temperature: Do not apply sheets if below minimum recommended by membrane manufacturer.
3. Condition of membrane at completion
  - 3.1. Neat, smooth and fully supported, dressed well into abutments and around intrusions.
  - 3.2. Completely impervious and continuous.
  - 3.3. Undamaged. Prevent puncturing during following work.
4. Permanent overlying construction: Cover membrane as soon as possible.

### **55 Angles in bonded damp-proofing/ tanking**

---

1. Preformed rot-proof fillet to internal angles.
  - 1.1. Size (minimum): 50 x 50 mm splay-faced.
  - 1.2. Bedding: Bitumen mastic or bonding compound.
2. Reinforcing strip to all angles
  - 2.1. Material: As damp-proofing/ tanking.
  - 2.2. Width (minimum): 300 mm.
  - 2.3. Timing: Apply before main sheeting.
3. Dressing of main sheeting onto adjacent surfaces (minimum): 100 mm.

## **60 Junctions with projecting dpcs/ cavity trays**

---

1. Adjoining surfaces: Clean and dry.
2. Dpcs/ cavity trays: Lap and fully bond/ seal with sheeting.
  - 2.1. Laps (minimum): 150 mm
  - 2.2. Bonding/ Sealing: To manufacturers recommendations

## **65 Junctions with flush dpcs/ cavity trays**

---

1. Adjoining surfaces: Clean and dry.
2. Preparation of adjacent dpcs/ cavity trays
  - 2.1. Expose edge where concealed.
  - 2.2. Lap and fully bond/ seal sheeting to wall.
  - 2.3. Dressing of sheeting beyond dpc/ cavity tray (minimum): 50 mm.
  - 2.4. Bonding/ Sealing: To manufacturers recommendations

Ω End of Section

## K10

# Gypsum board dry linings/ partitions/ ceilings

To be read with preliminaries/ general conditions.

### 15 Lining on timber Internal Partitions Generally

---

1. Description: STUD PARTITIONS
2. Substrate: 75x38mm Studs at 600 mm centres
3. Metal resilient (acoustic) bars: Not required
4. Fire performance
  - 4.1. Reaction to fire: To BS EN 13501-1, Class B-s3, d2 or better
  - 4.2. Fire resistance of complete lining assembly: To BS EN 13501-2, REI 30 or better
5. Linings: 2 layers 12.5mm Gyproc Wallboard either side (except voids where walls are to be lined on one side only)  
Bathrooms to receive 1 layer 12.5mm Gyproc Tilebacker H board as outer layer instead of Wallboard.
  - 5.1. Fixing: To manufacturers recommendations
6. Finishing: Skim coat plaster
  - 6.1. Primer/ Sealer: As recommended by board manufacturer
7. Accessories: Metal beads/ stops recommended by board manufacturer
8. Other requirements: Fire-stopping around service penetrations as section P12.  
  
50mm Isover partition roll acoustic insulation

### 15 Lining on timber To Under Stair Cupboard

---

1. Description: STUD PARTITIONS
2. Substrate: 63x38mm Studs at 400 mm centres
3. Metal resilient (acoustic) bars: Not required
4. Fire performance
  - 4.1. Reaction to fire: To BS EN 13501-1, Class B-s3, d2 or better
  - 4.2. Fire resistance of complete lining assembly: To BS EN 13501-2, REI 30 or better
5. Linings: 1 layer 12.5mm Gyproc wallboard either side
  - 5.1. Fixing: To manufacturers recommendations
6. Finishing: Skim coat plaster
  - 6.1. Primer/ Sealer: As recommended by board manufacturer
7. Accessories: Metal beads/ stops recommended by board manufacturer
8. Other requirements: **65mm** Isover insulation roll.

### 15 Lining on timber To partitions part of chimney

---

1. Description: STUD PARTITIONS **Chimney**
2. Substrate: 75x38mm Studs at 600 mm centres
3. Metal resilient (acoustic) bars: Not required
4. Fire performance
  - 4.1. Reaction to fire: To BS EN 13501-1, Class B-s3, d2 or better
  - 4.2. Fire resistance of complete lining assembly: To BS EN 13501-2, EI 60 or better
5. Linings: 2 layers 12.5mm Gyproc **Fireline** Board.

- 5.1. Fixing: To manufacturers recommendations
- 6. Finishing: Skim coat plaster
  - 6.1. Primer/ Sealer: As recommended by board manufacturer
- 7. Accessories: Metal beads/ stops recommended by board manufacturer
- 8. Other requirements: Fire-stopping around service penetrations as section P12.

50mm Isover partition roll acoustic insulation

**Allow for fire rated access hatch at first floor level for access to Flue pipe.**

## 25 Ceiling lining on timber

---

- 1. Description: Ceiling linings to horizontal ceilings, and to underside of stairs (not to pitched ceilings)
- 2. Substrate: Joists at 400mm centres TBC with Structural Engineer
- 3. Metal resilient (acoustic) bars: Not required
- 4. Fire performance
  - 4.1. Reaction to fire: To BS EN 13501-1, Class B-s3, d2 or better
  - 4.2. Fire resistance of complete ceiling assembly: To BS EN 13501-2, REI 30 or better
- 5. Linings: 2 layers 15mm Gyproc Soundbloc board
  - 5.1. Fixing: To manufacturers recommendations
- 6. Finishing: Skim coat plaster
  - 6.1. Primer/ Sealer: As recommended by board manufacturer
- 7. Accessories: Metal beads/ stops recommended by the board manufacturer
- 8. Other requirements: Fire-stopping around services as section P12.

100mm Isover Acoustic insulation above ceiling.

Allow for insulated **loft hatches** for access above bathroom ceilings.

## 45 Wall lining system

---

- 1. Description: Insulated plasterboard fixed to blockwork walls (inner leaf of external walls)  
  
Note: Alternative options for wall build up as notes on Drawing 21.02.04.11
- 2. Manufacturer: Knauf
  - 2.1. Product reference: knauf PIR laminate O/A 35mm
- 3. Wall: Concrete blockwork
- 4. Adhesive method: Fixings through to substrate, to manufacturers installation instructions
- 5. Fire performance
  - 5.1. Reaction to fire: To BS EN 13501-1, Class B-s3, d2 or better
  - 5.2. Fire resistance of complete wall lining assembly: To BS EN 13501-2, REI 30 or better
- 6. Finishing: Skim coat plaster
  - 6.1. Primer/ Sealer: As recommended by board manufacturer
- 7. Accessories: Metal beads/ stops recommended by board manufacturer
- 8. Other requirements: Fire-stopping around services as section P12 between properties

## 57 Encasement on timber framing

---

- 1. Description: Boxing to WC/Sink wall in bathroom and to SVPs
- 2. Timber framework: 44 x 44 mm with noggings at 600 mm maximum centres

3. Fire performance
  - 3.1. Reaction to fire: To BS EN 13501-1, Class B-s3, d2 or better
  - 3.2. Fire resistance of encasement system: To BS EN 13501-2. REI 30 or better
4. Linings: 2 layers 12.5mm Gyproc Wallboard.

Bathrooms to receive 1 layer 12.5mm Gyproc Tilebacker H board as outer layer instead of Wallboard.

4.1. Fixing: To manufacturers recommendations

5. Finishing: Skim coat plaster
  - 5.1. Primer/ Sealer: Primer to manufacturers recommendations
6. Accessories: Metal beads/ stops recommended by board manufacturer
7. Other requirements: 100mm Isover acoustic partition roll to encase all SVP's  
'Shelf' to top of half height enclosures of WC/sink. Final finish TBC with Client.

## Installation

### 60 Ceilings

---

1. Sequence: Fix boards to ceilings before installing dry lined walls and partitions.
2. Orientation of boards: Fix with bound edges at right angles to supports and with ends staggered in adjacent rows.
3. Two layer boarding: Stagger joints between layers.

### 65 Dry lining generally

---

1. General: Use fixing, jointing, sealing and finishing materials, components and installation methods recommended by board manufacturer.
2. Standard:
3. Gypsum plasterboard to BS EN 520.
4. Gypsum fibre board to BS EN 15283-2.
5. Evidence of compliance: Submit Declaration of Performance (DoP).
6. Cutting gypsum boards: Neatly and accurately without damaging core or tearing paper facing.
7. Cut edges: Minimize and position at internal angles wherever possible. Mask with bound edges of adjacent boards at external corners.
8. Two layer boarding: Stagger joints between layers.
9. Finishing: Neatly to give flush, smooth, flat surfaces free from bowing and abrupt changes of level.

### 67 Skim coat plaster finish

---

1. Plaster type: As recommended by board manufacturer
  - 1.1. Thickness: 2-3 mm.
2. Joints: Fill and tape except where coincident with metal beads.
3. Finish: Tight, matt, smooth surface with no hollows, abrupt changes of level or trowel marks.

### 69 Installing beads/ stops

---

1. Cutting: Neatly using mitres at return angles.
2. Fixing: Securely using longest possible lengths, plumb, square and true to line and level, ensuring full contact of wings with substrate.
3. Finishing: After joint compounds/ plasters have been applied, remove surplus material while still wet from surfaces of beads exposed to view.



## 70 Additional supports

---

1. Framing: Accurately position and securely fix to give full support to:
  - 1.1. Partition heads running parallel with, but offset from main structural supports.
  - 1.2. Fixtures, fittings and service outlets. Mark framing positions clearly and accurately on linings.
  - 1.3. Board edges and lining perimeters, as recommended by board manufacturer to suit type and performance of lining.

## 75 New wet laid bases

---

1. Dpcs: Install under full width of partitions/ freestanding wall linings.
  - 1.1. Material: Bituminous sheet or plastics.

## 85 mineral wool insulation

---

1. Fitting insulation: Closely butted joints and no gaps. Use fasteners to prevent slumping or displacement.
2. Services
  - 2.1. Electrical cables overlaid by insulation: Size accordingly.
  - 2.2. Ceilings: Cut insulation around electrical fittings, etc.

## 86 Cavity fire barriers within partitions/ Wall linings

---

1. Metal framed systems
  - 1.1. Material: Wire-reinforced mineral wool 50 mm (minimum) thick
  - 1.2. Installation: Form accurately and fix securely with no gaps to provide a complete barrier to smoke and flame.
2. Adhesive fixed wall lining systems
  - 2.1. Material: Adhesive compound.
  - 2.2. Installation: Form in a continuous line with no gaps to provide a complete barrier to smoke and flame.

## 87 Sealing gaps and air paths

---

1. Sealing: Apply sealant to perimeter abutments and around openings as a continuous bead with no gaps.
2. Application: To clean, dry and dust free surfaces as a continuous bead with no gaps.
  - 2.1. Gaps greater than 6mm between floor and underside of gypsum board: After sealing, fill with joint compound.

## 88 Fire-stopping at perimeters of dry lining systems

---

1. Material: Tightly packed mineral wool or intumescent mastic/ sealant.
2. Application: To perimeter abutments to provide a complete barrier to smoke and flame.

## 89 Cavity fire barriers within suspended ceilings

---

1. Type: As recommended by board manufacturer to meet specified performance
2. Fire resistance: To BS EN 13501-2, REI 30
3. Ceiling void subdivision: Fix barriers not more than 20 m apart in any direction.
4. Fixing at perimeters and joints: Secure, stable and continuous with no gaps, to provide a complete barrier to smoke and flame.
5. Service penetrations: Cut and pack to maintain barrier integrity. Sleeve flexible materials. Adequately support services passing through barrier.

6. Ceiling systems for fire protection: Do not impair fire-resisting performance of ceiling system.

## 90 Seamless jointing

---

1. Cut edges of boards: Lightly sand to remove paper burrs.
2. Filling and taping: Fill joints, gaps and internal angles with jointing compound and cover with continuous lengths of tape, fully bedded.
3. Protection of edges/ corners: Reinforce external angles, stop ends, etc. with specified edge/ angle bead.
4. Finishing: Feather out jointing compound to give a flush, smooth, seamless surface.
5. Nail/ screw depressions and minor indents: Fill with jointing compound to give a flush surface.
6. Minor imperfections: Remove by light sanding.

## 91 Vertical joints

---

1. Joints: Centre on studs.
  - 1.1. Partitions: Stagger joints on opposite sides of studs.
  - 1.2. Two layer boarding: Stagger joints between layers.

## 92 Horizontal joints

---

1. Surfaces exposed to view: Horizontal joints not permitted. Seek instructions where height of partition/ lining exceeds maximum available length of board.
2. Two layer boarding: Stagger joints between layers by at least 600 mm.
3. Edges of boards: Support using additional framing.
  - 3.1. Two layer boarding: Support edges of outer layer.

## 93 Fixing gypsum board to metal framing/ Furrings

---

1. Partitions/ Wall linings: Fix securely and firmly at the following centres (maximum):
  - 1.1. Single layer boarding: To all framing at 300 mm centres. Reduce to 200 mm centres at external angles.
  - 1.2. Multi-layer boarding: Face layer at 300 mm centres, and previous layers around perimeters at 300 mm centres.
2. Ceilings: 230 mm. Reduce to 150 mm at board ends and at lining perimeters.
3. Position of screws from edges of boards (minimum): 10 mm.
  - 3.1. Screw heads: Set in a depression. Do not break paper or gypsum core.

## 94 Fixing gypsum board to timber

---

1. Fixing to timber: Securely at the following centres (maximum):
  - 1.1. Nails: 150 mm.
  - 1.2. Screws to partitions/ wall linings: 300 mm. Reduce to 200 mm at external angles.
  - 1.3. Screws to ceilings: 230 mm.
2. Position of nails/ screws from edges of boards (minimum)
  - 2.1. Bound edges: 10 mm.
  - 2.2. Cut/ unbound edges: 13 mm.
3. Position of nails/ screws from edges of timber supports (minimum): 6 mm.

## Finishing

### 97 Level of dry lining across joints

---

1. Sudden irregularities: Not permitted.
2. Joint deviations: Measure from faces of adjacent boards using methods and straightedges (450 mm long with feet/ pads) to BS 8212, clause 3.3.5.
  - 2.1. Tapered edge joints
    - 2.1.1. Permissible deviation (maximum) across joints when measured with feet resting on boards: 3 mm.
  - 2.2. External angles
    - 2.2.1. Permissible deviation (maximum) for both faces: 4 mm.
  - 2.3. Internal angles
    - 2.3.1. Permissible deviation (maximum) for both faces: 5 mm.

Ω End of Section

## K11

# Rigid sheet flooring/ sheathing/ decking/ sarking/ linings/ casings

To be read with preliminaries/ general conditions.

## 10 Wood-based sheets generally

---

1. Standard: To BS EN 13986.
  - 1.1. Evidence of compliance: All sheets to be UKCA/ UKNI/ CE marked. Submit Declaration of Performance (DoP).

## 37 Plywood flooring First Floor

---

1. Description: First Floor Level
2. Substrate: Timber floor joists
  - 2.1. Additional supports: as Clause 67
3. Flooring: Plywood manufactured to the relevant standards and quality control procedures specified in BS EN 636, and so marked.
  - 3.1. Finish: Smooth and sanded
  - 3.2. Use class: Class 1 generally.  
Class 2 to bathrooms
  - 3.3. Grade: BB
  - 3.4. Nominal thickness/ number of plies: 18mm
  - 3.5. Fire performance
    - 3.5.1. Reaction to fire: Class C fl, s1 reaction to fire to BS EN 13501-1 or better
  - 3.6. Edges: Tongued-and-grooved to all edges
4. Setting out: Long edges running across joists. End joints central over joists and staggered.
5. Fixing to joists
  - 5.1. Fasteners: 50 mm x 8 gauge wood screws into pilot holes
  - 5.2. Fixing centres: Fixings should be spaced at a maximum 100 mm centres around the perimeter of each plywood sheet, 12 mm from the edge and at a maximum 150 mm within the sheets.
6. Joint treatment: Bonded with Type 1 phenol resin (PRF) adhesive to BS EN 301.
7. Expansion provision
  - 7.1. Clear expansion gap around perimeter of floor area and upstands: 2 mm per metre run of floor, with a minimum gap of 10 mm
  - 7.2. Intermediate expansion/ movement joints: As recommended by flooring manufacturer.

## 38 Plywood wall sheathing To Bike / Bin Stores

---

1. Substrate: Timber Studs
  - 1.1. Additional supports: as Clause 67
2. Sheathing: Plywood manufactured to the relevant standards and quality control procedures specified in BS EN 636, and so marked.
  - 2.1. Finish: Smooth and sanded
  - 2.2. Use class: Class 2
  - 2.3. Grade: BB
  - 2.4. Nominal thickness/ number of plies: 12mm

3. Setting out: Long edges vertical and centred on supports.
  - 3.1. Expansion gap between adjacent boards (unless otherwise recommended by manufacturer): 2-3 mm.
4. Fixing to supports
  - 4.1. Fasteners: 60 x 3.35 mm galvanized annular ringed shank nails
  - 4.2. Fixing centres: 150 mm
  - 4.3. Fixing distance from edges (minimum): 25 mm from bottom edge of board and 10 mm from other edges.

## **61 Plywood Patressing**

---

1. Description: Patressing for heavy wall fixed units/fittings
2. Substrate: Timber studs (fix between studs within cavity of wall)
  - 2.1. Additional supports: Timber battens for fixing
3. Plywood: Manufactured to an approved national standard.
  - 3.1. Bonding quality to BS EN 314-2: class 1
  - 3.2. Appearance class to BS EN 635: Class IV.
  - 3.3. Finish: Unsanded
  - 3.4. Thickness: 18mm
  - 3.5. Edges: Square
4. Fixing to supports
  - 4.1. Fasteners: 50 mm x 8 gauge wood screws into pilot holes
  - 4.2. Fixing centres: Around board edges: 150 mm
  - 4.3. Fixing distance from edges (minimum): 10 mm

## **67 Additional supports**

---

1. Additional studs, noggings/ dwangs (Scot) and battens
  - 1.1. Provision: In accordance with board manufacturer's recommendations and as follows:
  - 1.2. Tongue and groove jointed rigid board areas: To all unsupported perimeter edges.
    - 1.2.1. Butt jointed rigid board areas: To all unsupported edges.
  - 1.3. Size: Not less than 50 mm wide and of adequate thickness.
  - 1.4. Treatment (where required): As for adjacent timber supports.
2. Additional floor supports.
  - 2.1. Type: Counterbattens

## **72 Board moisture content and conditioning**

---

1. Moisture content of boards at time of fixing: Appropriate to end use.
2. Conditioning regime: Submit proposals.

## **78 Air and vapour control layer in floating floor construction**

---

1. Location: Immediately below floating layer.
2. Installation
  - 2.1. Joints overlapped 150 mm and sealed with vapour-resistant tape.
  - 2.2. Treatment of membrane at perimeter of flooring and upstands: Turned up and sealed to top face of flooring using a method approved by the board manufacturer.
3. Excess material trimmed off neatly after fixing skirtings/ cover beads.

4. Condition of membrane before laying flooring: Clean and dry.

## **85 Fixing generally**

---

1. Timing: Building to be weathertight before fixing boards internally.
2. Moisture content of timber supports (maximum): 18%.
3. Boards/ sheets: Fixed securely to each support without distortion and true to line and level.
4. Joints between boards: Accurately aligned, of constant width and parallel to perimeter edges.
5. Methods of fixing, and fasteners: As section Z20 where not specified otherwise.
6. Fasteners: Evenly spaced in straight lines and in pairs across joints.
  - 6.1. Distance from edge of board: Sufficient to prevent damage.
7. Surplus adhesive: Removed as the work proceeds.

## **90 Open joints**

---

1. Perimeter joints and joints between boards: Free from plaster, mortar droppings and other debris.
2. Temporary wedges/ packings: Remove on completion of board fixing.

Ω End of Section

## K20

### Timber board flooring/ sarking/ linings/ casings

To be read with preliminaries/ general conditions. - Not Used

#### Workmanship

#### 40 Moisture content of new concrete/ Screed substrate for floating floors

---

1. Test for moisture content
  - 1.1. Standard: To BS 8201, Annex A, using an accurately calibrated hygrometer.
  - 1.2. Readings: Take in corners, along edges, and at random points over the area being tested.
2. Acceptability: Do not lay flooring until all readings show 75% relative humidity or less.

#### 41 Treated timber

---

1. Surfaces exposed by minor cutting and/ or drilling: Treat with two flood coats of a solution recommended for the purpose by main treatment solution manufacturer.

#### 50 Fixing boards

---

1. Protection during and after installation: Keep boards dry, clean and undamaged.
2. Boards to be used internally: Do not install until building is weathertight.
3. Moisture content of timber supports at time of fixing boards: Not more than 18%.
4. Fixing: Fix boards securely to each support to give flat, true surface free from undulations, lipping, splits and protruding fasteners.
5. Timber movement: Position boards and fixings to prevent cupping, springing, excessive opening of joints and other defects.
6. Heading joints: Tightly butted, central over supports and at least two boards widths apart on any one support.
7. Edges: Plane off proud edges.
8. Exposed nail heads: Neatly punch below surface.

Ω End of Section

## K21

### Wood strip/ board fine flooring/ linings

To be read with preliminaries/ general conditions.

#### 60 Fixtures

---

1. Fixtures around which flooring is to be fitted: Installed before starting work specified in this section.

#### 65 Workmanship generally

---

1. Moisture content of timber supports: 12-14%.
2. Methods of fixing and fasteners: As section Z20 where not specified.
3. Protection: Protect from dirt, stains and damage using suitable coverings and boards laid as the work proceeds.

#### 80 Expansion provision

---

1. Expansion gaps
  - 1.1. Edges of flooring parallel to lie of boards: To manufacturers recommendations
  - 1.2. Ends of flooring: To manufacturers recommendations
2. Spacer blocks and debris: Removed before fixing skirtings.

#### 85 Environmental conditions

---

1. General requirements prior to starting work specified in this section: Building weathertight, wet trades completed and affected areas dried out.

#### 90 Finish to flooring

---

1. Exposed fastener heads: Punched or set below surface and filled with stopping to match wood.
2. Strips/ Boards: Sanded to give a clean, smooth and flush surface free from score marks.
3. Finish: TBC

Ω End of Section



## L10

### Windows/ rooflights/ screens/ louvres

To be read with preliminaries/ general conditions.

#### 33 Proprietary windows

---

1. Description: Refer to Window schedule and window drawings
2. Standard: Non-fire and/ or smoke-rated windows to BS EN 14351-1
3. Manufacturer: Velfac
  - 3.1. Product reference: Velfac 200 Energy, Double or Single Casement.
4. Finish as delivered: Contractors Choice
5. Thermal performance (U-value maximum): 1.2 W/m<sup>2</sup>K
6. Glazing details: Triple. (note glazing for bathroom on window schedule)
7. Ironmongery/ accessories: Refer to window schedule
8. Fixing: To manufacturers recommendations

#### 45 Rooflights

---

1. Manufacturer: Velux
  - 1.1. Product reference: VELUX INTEGRA® electrically operated centre-pivot roof window, white painted or clear lacquered pine finish
2. Type: Rectangular, centre pivot
3. Frame: Aluminium
  - 3.1. Finish: lacquered aluminium
  - 3.2. Colour: dark grey
4. Kerb: Manufacturer's standard
5. Thermal performance (U-value maximum): 1.0 W/m<sup>2</sup>K
6. Glazing details: Triple Glazing --66  
Inner Pane: 2 x 3 mm laminated float with low ε coating.  
Middle Pane: 3 mm heat strengthened float with low ε coating.  
Outer Pane: 4 mm toughened with coatings  
Cavity: 2 x 13 mm  
Gas filling: Argon
7. Other requirements: Flashing Kit
8. Fixing: To manufacturers instructions

#### 51 Glazed screen system Fire Rated

---

1. Description: Glazed fire rated screen to first floor gallery.
2. Manufacturer: Contractors Proposal
  - 2.1. Product reference: Thin frame aluminium with silicone joints between glass panels.
3. Screen height: 3m
4. Fire performance
  - 4.1. Fire resistance: To BS EN 13501-2, EI 30 or better
  - 4.2. Reaction to fire: To BS EN 13501-1, Class B or better
5. Materials
  - 5.1. Frames: Aluminium outer edge. (silicone joints between panels)
    - 5.1.1. Finish: Colour TBC

5.2. Panels: Full height clear glass

6. Glazing details: 30/30 fire rated  
Laminated Safety Glass  
Sufficient to provide containment as a guarding to an upper level floor.  
Impact rating compliant with BS6399 Part 1
7. Fixing: Manufacturer's standard

## **70 Fire-resisting frames**

---

1. Gap between back of frame and reveal: Completely fill with intumescent mastic or tape.

## **80 Ironmongery**

---

1. Fixing: In accordance with any third party certification conditions applicable. Assemble and fix carefully and accurately using fasteners with matching finish supplied by ironmongery manufacturer. Do not damage ironmongery and adjacent surfaces.
2. Checking/ adjusting/ lubricating: Carry out at completion and ensure correct functioning.

Ω End of Section

## L20 Doors/ shutters/ hatches

To be read with preliminaries/ general conditions.

### 10 Timber procurement

---

1. Timber (including timber for wood-based products): Obtained from well-managed forests and/ or plantations in accordance with:
  - 1.1. The laws governing forest management in the producer country or countries.
  - 1.2. International agreements such as the Convention on International Trade in Endangered Species of wild fauna and flora (CITES).
2. Documentation: Provide either in accordance with chain of custody certification scheme requirements:
  - 2.1. Documentary evidence (which has been or can be independently verified) regarding the provenance of all timber supplied; or
  - 2.2. Evidence that suppliers have adopted and are implementing a formal environmental purchasing policy for timber and wood-based products.
3. Chain of custody certification scheme:

### 30 Wood doors Internal Doors

---

1. Description: Refer to Door schedule.  
Note fire requirements for some doors
2. Materials: Generally to BS EN 942.
  - 2.1. Species: Contractors Choice
  - 2.2. Appearance Class: Contractors Choice
3. Panels: Contractors Choice
4. Assembly
  - 4.1. Adhesive: PVAC to BS EN 204, Class D4
  - 4.2. Joinery workmanship: As section Z10.
  - 4.3. Accuracy: To BS 4787-1.
5. Moisture content on delivery: 9-13%
6. Finish as delivered: Contractors Choice
7. Glazing/ infill details: Contractors Choice
8. Fire performance
  - 8.1. Fire resistance: Refer to Door Schedule

### 45 Doors External Entrance Doors

---

1. Description: Refer to Door Schedule and Door drawings
2. Manufacturer: Velfac
  - 2.1. Product reference: Ribo (See door schedule for open in / out and glazing requirements / pattern)
3. Finish as delivered: Contractors Choice
4. Glazing/ infill details: Where door glazed = Triple glazed, safety glass
5. Ironmongery: Contractors Choice
6. Thermal performance (U-value maximum): 1.0 W/m<sup>2</sup>K for solid doors  
1.2 W/m<sup>2</sup>K for glazed doors

## 50 Wood door frames and Architraves

---

1. Description: Internal doors
2. Manufacturer: Contractors Choice
  - 2.1. Product reference: Contractors Choice
3. Species: Contractors Choice
4. Finish as delivered: Contractors Choice
5. Fire performance
  - 5.1. Fire resistance: Refer to Door Schedule
6. Fixing: Contractors Choice
  - 6.1. Spacing of fixings (frames not predrilled): Maximum 150 mm from ends of each jamb, adjacent to each hanging point and at 600 mm maximum centres.

## 55A Doorsets External Sliding

---

1. Description: Sliding doors
2. Manufacturer: Velfac
  - 2.1. Product reference: Velfac 200 Energy Sliding casement 1 leaf with 24mm threshold and 2no fixed side screens with corresponding 24mm thresholds.
3. Finish as delivered: Contractors Choice
4. Glazing/ Infill details: 48mm Triple, Safety
5. Ironmongery: Contractors Choice
6. Thermal performance (U-value maximum): 1.2 W/m<sup>2</sup>K
7. Fixing: To manufacturers requirements
  - 7.1. Spacing of fixings (frames not predrilled): Maximum 150 mm from ends of each jamb and at 600 mm maximum centres.

## 55B Doorsets External Glazed Casement

---

1. Description: Casement glazed doors
2. Manufacturer: Velfac
  - 2.1. Product reference: Velfac 200 Energy French Casement door 2 leaf or 1 leaf casement (refer to door schedule)
3. Finish as delivered: Contractors Choice
4. Glazing/ Infill details: 48mm triple, safety
5. Ironmongery: Contractors Choice
6. Thermal performance (U-value maximum): 1.2 W/m<sup>2</sup>K
7. Fixing: To manufacturers details
  - 7.1. Spacing of fixings (frames not predrilled): Maximum 150 mm from ends of each jamb and at 600 mm maximum centres.

## 70 Fire and smoke resistance

---

1. Requirement: Specified performance to be the minimum period attained when tested for integrity in accordance with BS 476-22, BS EN 1634-1 or BS EN 1634-3.
2. Components and assemblies will be marked to the relevant product standard and/ or third party certification rating.

## 75 Fire-resisting/ smoke control doors/ doorsets

---

1. Gaps between frames and supporting construction: Filled as necessary in accordance with door/ doorset manufacturer's instructions.

## **85 Fixing ironmongery generally**

---

1. Fasteners: Supplied by ironmongery manufacturer.
  - 1.1. Finish/ Corrosion resistance: To match ironmongery.
2. Holes for components: No larger than required for satisfactory fit/ operation.
3. Adjacent surfaces: Undamaged.
4. Moving parts: Adjusted, lubricated and functioning correctly at completion.

Ω End of Section

## L30

# Stairs/ ladders/ walkways/ handrails/ balustrades

## To be read with preliminaries/ general conditions

### 10 Wood stairs

---

1. Components
  - 1.1. Treads: 22 mm timber, bullnose edge
  - 1.2. Risers: 22 mm timber
  - 1.3. Strings: Timber
  - 1.4. Newels: 90 x 90 mm oak - square
  - 1.5. Guarding: 35 x 35mm oak spindles - square
  - 1.6. Handrails: 44 x 66 mm Oak, Oval
2. Moisture content at time of installation: 9-13%.
3. Finish as delivered: Oiled finish & Paint finish as M60
4. Other requirements: Treads to receive Carpet finish.  
Refer to drawing: 21.02.04.26

### 15 Timber procurement

---

1. Timber (including timber for wood-based products): Obtained from well managed forests and/ or plantations in accordance with:
  - 1.1. The laws governing forest management in the producer country or countries.
  - 1.2. International agreements such as the Convention on International Trade in Endangered Species of wild fauna and flora (CITES).
2. Documentation: Provide either in accordance with chain of custody certification scheme requirements:
  - 2.1. Documentary evidence (which has been or can be independently verified) regarding the provenance of all timber supplied or
  - 2.2. Evidence that suppliers have adopted and are implementing a formal environmental purchasing policy for timber and wood-based products.
3. Chain of Custody Certification scheme: Contractor's choice in accordance with UK Government timber procurement policy (UKTPP), i.e. FSC, GiB or PEFC.

### 50 Purpose-made balustrades

---

1. Description: Continuation of staircase at first floor level around opening.
2. Component material, grade and finish as delivered
  - 2.1. Guarding: 35 x 35mm oak spindles - square
  - 2.2. Handrails: 44 x 66 mm Oak, Oval
3. Workmanship
  - 3.1. Joinery: To section Z10
4. Fixing: Through fixing to timber

### 75 Priming/ Sealing/ Painting

---

1. Surfaces inaccessible after assembly/ installation: Before fixing components, apply full protective/ decorative treatment/coating system.

## **80 Installation generally**

---

1. **Fasteners and methods of fixing:** To Section Z20.
2. **Structural members:** Do not modify, cut, notch or make holes in structural members, except as indicated on drawings.
3. **Temporary support:** Do not use stairs, walkways or balustrades as temporary support or strutting for other work.
4. **Applied features (finishes, inserts, nosings, etc.):** Substrates to be even, dry, sound and free from contaminants. Make good substrate surfaces and prepare/ prime as applied feature manufacturer's recommendations before application.

## **90 Inspection**

---

1. **Timing:** Two weeks prior to date when contractor expects work to be practically complete
2. **Period of notice (minimum):** Three working days

Ω End of Section

## L40 General glazing

To be read with preliminaries/ general conditions.

### 10 Workmanship and positioning generally

---

1. Glazing
  - 1.1. **Generally:** In accordance with BS 6262 series.
  - 1.2. **Integrity:** Wind and watertight under all conditions. Make full allowance for deflections and other movements.
2. Glass
  - 2.1. **Standards:** Generally to BS 952 and to the relevant parts of:
    - 2.1.1. BS EN 572 for basic soda lime silicate glass.
    - 2.1.2. BS EN 1096 for coated glass.
    - 2.1.3. BS EN 12150-2 for thermally toughened soda lime silicate glass.
    - 2.1.4. BS EN ISO 12543 for laminated glass.
  - 2.2. **Quality:** Free from scratches, bubbles and other defects.
  - 2.3. **Dimensional tolerances:** Panes/ sheets to be accurately sized.
  - 2.4. **Material compatibility:** Glass/ plastics, surround materials, sealers primers and paints/ clear finishes to be compatible. Comply with glazing/ sealant manufacturers' recommendations.
  - 2.5. **Protection:** Keep materials dry until fixed. Protect insulating glass units and plastics glazing sheets from the sun and other heat sources.

### 30 Preparation

---

1. **Surrounds, rebates, grooves and beads:** Clean and prepare before installing glazing; ensure compliance with any certified installation requirements.

Ω End of Section



# M10

## Cement based levelling/ wearing screeds

To be read with preliminaries/ general conditions.

### 7 Proprietary quick drying levelling screeds

---

1. Description: Ground floor
2. Substrate: In situ concrete slab
3. Screed manufacturer: Cemex
  - 3.1. Product reference: ReadyScreed Reinforced
4. Screed construction: Floating, as clause 40
5. Thickness
  - 5.1. Nominal: 65 mm
  - 5.2. Maximum: 65 mm
6. Mix
  - 6.1. Cement: Manufacturer's standard
  - 6.2. Proportions (cement:sand): Manufacturer's standard.
7. Finish: Smooth floated finish, as clause 70
  - 7.1. To receive: Various floor finishes, refer to Drawings/schedules
8. Other requirements: Movement joints, as clause 460  
Pipe ducts, as section P31  
Perimeter foam isolating strips  
**Under floor heating system laid within screed TBC**

### 21 Suitability of substrates

---

1. General
  - 1.1. Suitable for specified levels and flatness/ regularity of finished surfaces. Consider permissible minimum and maximum thicknesses of screeds.
  - 1.2. Sound and free from significant cracks and gaps.
2. Concrete strength: In accordance with BS 8204-1, Table 2.
3. Cleanliness: Remove plaster, debris and dirt.
4. Moisture content: To suit screed type. New concrete slabs to receive fully or partially bonded construction must be dried out by exposure to the air for minimum six weeks.

### 22 Proprietary levelling/wearing screeds

---

1. General: Materials, mix proportions, mixing methods, minimum/ maximum thicknesses and workmanship must be in accordance with recommendations of screed manufacturer.

### 40 Floating construction

---

1. Insulation
  - 1.1. Type: 120mm Kingspan Kooltherm K103 board
  - 1.2. Installation: Lay with tight butt joints. Continue up at perimeter abutments for full depth of screed.
2. Separating layer
  - 2.1. Type: Polyethylene sheet to Insulation manufacturers recommendations
  - 2.2. Installation: Lay over insulation and turn up at perimeter abutments. Lap 100 mm at joints.

## 45 Aggregates and cements

---

1. Sand: To BS EN 13139.
  - 1.1. Grading limits: In accordance with BS 8204-1, Table B.1.
2. Coarse aggregates
  - 2.1. Standard: To BS EN 12620.
  - 2.2. Lightweight aggregates: In accordance with BS 8204-1, Annex A.
  - 2.3. Designation 4/10.
3. Cement
  - 3.1. Cement types: In accordance with BS 8204-1, clause 5.1.3.

## 46 Proprietary polymer modified screeds

---

1. Cement types: In accordance with BS 8204-3.
2. Sand: To BS EN 13139:
  - 2.1. Grading limits: 0/4 mm (MP) category 1 generally. For screeds of 20 mm or less: 0/2 mm (MP) category 1
3. Aggregates: In accordance with BS 8204-3.

## 47 Admixtures

---

1. Standards; In accordance with BS 8204-1, Table 1.
2. Calcium chloride: Do not use in admixtures.

## 50 Mixing

---

1. Water content: Minimum necessary to achieve full compaction, low enough to prevent excessive water being brought to surface during compaction..
2. Mixing: Mix materials thoroughly to uniform consistency in a suitable forced action mechanical mixer. Do not use a free fall drum type mixer.
3. Consistency: Use while sufficiently plastic for full compaction.
4. Ready-mixed retarded screed mortar: Use within working time and site temperatures recommended by manufacturer. Do not retemper.

## 52 Compaction

---

1. General: Compact thoroughly over entire area.
2. Screeds over 50 mm thick: Lay in two layers of equal thickness. Roughen surface of compacted lower layer then immediately lay upper layer.

## 53 General reinforcement

---

1. Steel fabric: In accordance with BS 4483.
  - 1.1. Type: To Screed Manufacturers recommendations
2. Installation: In accordance with BS 8204-1.

## 55 Joints in levelling screeds

---

1. Laying screeds: Lay continuously using 'wet screeds' between strips or bays. Minimize defined joints.
2. Daywork joints: Form with vertical edge.

## 60 Joints in polymer modified wearing screeds

---

1. Bay sizes (maximum): 4.5 m

2. Location of bay joints: Over construction/ movement joints in base slab.

## **65 Strip movement joints**

---

1. Description: FOR DOOR THRESHOLDS
2. Manufacturer: Contractor's choice
  - 2.1. Product reference: Contractor's choice
  - 2.2. Size: 5 mm
3. Installation: Set securely into screed to exact finished level of floor. Extend joints through to substrate.
  - 3.1. Secure fixing to substrate: To manufacturer's recommendation.

## **70 Smooth floated finish**

---

1. Finish: Even texture with no ridges or steps.

## **75 Trowelled finish to levelling screeds**

---

1. Floating: To an even texture with no ridges or steps.
2. Trowelling: To a uniform smooth surface, free from trowel marks and other blemishes, and suitable to receive specified flooring material.

## **80 Trowelled finish to wearing screeds**

---

1. Floating: To an even texture with no ridges or steps.
2. Trowelling: Successively trowel at intervals, applying sufficient pressure to close surface and give a uniform, smooth finish free from trowel marks and other blemishes.

## **85 Finishing generally**

---

1. Timing: Carry out all finishing operations at optimum times in relation to setting and hardening of screed material.
2. Prohibited treatments to screed surfaces
  - 2.1. Wetting to assist surface working.
  - 2.2. Sprinkling cement.

## **90 Curing**

---

1. General: Prevent premature drying. Immediately after laying, protect surface from wind, draughts and strong sunlight. As soon as screed has set sufficiently, closely cover with polyethylene sheeting.
2. Curing period (minimum): As soon as screed has set sufficiently, closely cover with polyethylene sheeting for period recommended by screed manufacturer.
3. Drying after curing: Allow screeds to dry gradually. Do not subject screeds to artificial drying conditions that will cause cracking or other shrinkage related problems.

Ω End of Section

## M20

# Plastered/ rendered/ roughcast coatings

To be read with preliminaries/ general conditions.

### 30 Lightweight gypsum plaster

---

1. Description: To Blockwork walls of Fireplace/chimneys
2. Substrate: Concrete blockwork as section F10
  - 2.1. Preparation: Bonding agent recommended by plaster manufacturer
3. Manufacturer: British Gypsum
4. Undercoats: To BS EN 13279-1.
  - 4.1. Product reference: Thistle BondingCoat
  - 4.2. Thickness (excluding dubbing out and keys): 11mm
5. Final coat: Finish plaster to BS EN 13279-1, class B.
  - 5.1. Product reference: Thistle MultiFinish
  - 5.2. Thickness: 2-3 mm.
  - 5.3. Finish: Smooth.
6. Accessories: Beads and stops

### 50 Gypsum plaster skim coat on plasterboard

---

1. Plasterboard: As K10/15, K10/20, K10/45, K10/57 & P10/40
  - 1.1. Preparation: Bonding agent recommended by plaster manufacturer
2. Plaster: Board finish/ plaster to BS EN 13279-1, class B.
  - 2.1. Manufacturer: British Gypsum
    - 2.1.1. Product reference: Thistle MultiFinish
  - 2.2. Thickness: 2-3 mm
  - 2.3. Finish: Smooth.

### 65 Mixing

---

1. Render mortars (site-made)
  - 1.1. Batching: By volume using gauge boxes or buckets.
  - 1.2. Mix proportions: Based on damp sand. Adjust for dry sand.
  - 1.3. Lime:sand: Mix thoroughly. Allow to stand, without drying out, for at least 16 hours before using.
2. Mixes: Of uniform consistence and free from lumps.
3. Contamination: Prevent intermixing with other materials.

### 67 Cold weather

---

1. General: Do not use frozen materials or apply coatings on frozen or frost bound substrates.
2. Internal work: Take precautions to prevent damage to internal coatings when air temperature is below 3°C.
3. External work: Avoid when air temperature is at or below 5°C and falling or below 3°C and rising.

### 71 Suitability of substrates

---

1. General: Suitable to receive coatings. Sound, free from contamination and loose areas.
2. Cutting, chasing, making good, fixing of conduits and services outlets and the like: Completed.

3. **Tolerances:** Permitting specified flatness/ regularity of finished coatings.
4. **Cleanliness:** Free from dirt, dust, efflorescence and mould, and other contaminants incompatible with coatings.

### **81 Beads/ stops for internal use**

---

1. **Standard:** In accordance with BS EN 13914-2.
2. **Material:** Stainless steel to BS EN 13658-1

### **87 Application of coatings**

---

1. **General:** Apply coatings firmly and achieve good adhesion.
2. **Appearance of finished surfaces:** Even and consistent. Free from rippling, hollows, ridges, cracks and crazing.
  - 2.1. **Accuracy:** Finish to a true plane, to correct line and level, with angles and corners to a right angle unless specified otherwise, and with walls and reveals plumb and square.
3. **Drying out:** Prevent excessively rapid or localized drying out.
4. **Keying undercoats:** Cross scratch plaster coatings and comb render coatings. Do not penetrate undercoat.

### **93 Curing and drying of render coatings**

---

1. **General:** Prevent premature setting and uneven drying of each coat.
2. **Curing:** Keep each coat damp by covering with polyethylene sheet and/ or spraying with water.
  - 2.1. **Curing period (minimum):** As render manufacturer's recommendations
3. **Drying:** Allow each coat to dry thoroughly, with shrinkage substantially complete before applying next coat.

### **94 Flatness/ surface regularity**

---

1. **Sudden irregularities:** Not permitted.
2. **Deviation of plaster surface:** Measure from underside of a straight edge placed anywhere on surface.
  - 2.1. **Permissible deviation (maximum) for plaster not less than 13 mm thick:** 3 mm in any consecutive length of 1800 mm.

### **99 Render final coat – plain floated finish**

---

1. **Finish:** Even, open texture free from laitance.

Ω End of Section

## M40

# Stone/ concrete/ quarry/ ceramic tiling/ mosaic

To be read with preliminaries/ general conditions.

### 15 New backgrounds/ bases

---

1. Background drying times (minimum)
  - 1.1. Brick/block walls: six weeks.
  - 1.2. Rendering: two weeks.
  - 1.3. Gypsum plaster: four weeks.
2. Base drying times (minimum)
  - 2.1. Concrete slabs: six weeks.
  - 2.2. Cement:sand screeds: three weeks.

### 25 New plaster

---

1. Plaster: Dry, solidly bedded, free from dust and friable matter.
2. Plaster primer: Apply if recommended by adhesive manufacturer.

### 27 Intermediate substrate

---

1. Type: Tile matting
  - 1.1. Manufacturer: Contractor's choice
    - 1.1.1.Product reference: Contractor's choice
2. Joints: Close butt.
3. Penetrations: Seal.

### 30 Fixing generally

---

1. Colour/ shade: Avoid unintended variations within tiles for use in each area/ room.
  - 1.1. Variegated tiles: Mix thoroughly.
2. Adhesive: Compatible with background/ base.
3. Cut tiles: Neat and accurate.
4. Fixing: Provide adhesion over entire background/ base and tile backs.
5. Final appearance: Before bedding material sets, make adjustments necessary to give true, regular appearance to tiles and joints.
6. Deviation of surface: Measure from underside of a 2 m straightedge with 3 mm thick feet placed anywhere on surface. The straightedge should not be obstructed by the tiles/ mosaics and no gap should be greater than 6 mm, i.e. a tolerance of
7. Surplus bedding material: Clean from joints and face of tiles/ mosaics.

### 32 Mortar bedding

---

1. Bedding mix
  - 1.1. Cement: Portland to BS EN 197-1, type CEM I/42.5.
  - 1.2. Sand for walls: Fine aggregate to BS EN 13139.
    - 1.2.1.Grading designation: 0/2 (CP or MP) category 2 fines.
  - 1.3. Sand for floors: Fine aggregate to BS EN 13139.
2. Grading designation: 0/4 (MP) category 1 fines and between 20-66% passing a 0.5 sieve.
3. Batching: Select from:

- 3.1. Batch by weight.
- 3.2. Batch by volume: Permitted on the basis of previously established weight:volume relationships of the particular materials. Use accurate gauge boxes. Allow for bulking of damp sand.
4. Mixing: Mix materials thoroughly to uniform consistence. Use a suitable forced action mechanical mixer. Do not use a free fall type mixer.
5. Application: At normal temperatures use within two hours. Do not use after initial set. Do not retemper.

## **35 Setting out**

---

1. Joints: True to line, continuous and without steps.
  - 1.1. Joints on walls: Horizontal, vertical and aligned round corners.
  - 1.2. Joints in floors: Parallel to main axis of space or specified features.
2. Cut tiles: Minimize number, maximize size and locate unobtrusively.
3. Joints in adjoining floors and walls: Align.
4. Joints in adjoining floors and skirtings: Align.
5. Movement joints: Where locations are not indicated, submit proposals.
6. Setting out of ..... : Drawing references: .....
7. Setting out of ..... : Submit proposals.

## **50 Adhesive bed – notched trowel method to walls**

---

1. Application: By 3 mm floated coat of adhesive to dry background. Comb surface.
2. Tiling: Press tiles firmly onto float coat.

## **55 Adhesive bed – notched trowel and buttering method to walls**

---

1. Application: By floated coat of adhesive to dry background. Comb surface.
2. Tiling: Apply thin even coat of adhesive to backs of dry tiles. Fill any profiles. Press tiles firmly onto float coat.
3. Finished adhesive thickness: 3 mm or within the range allowed by the adhesive manufacturer.

## **57 Adhesive bed – buttering method**

---

1. Tiling: Apply even coat of adhesive to backs of dry tiles. Fill any ribbed, deep keyed or button profiles.
2. Finished adhesive thickness
  - 2.1. Walls: 3 mm or within the range allowed by the adhesive manufacturer.
  - 2.2. Floors: Within the range allowed by the adhesive manufacturer.

## **60 Adhesive bed – notched trowel and buttering method to floors**

---

1. Application: Floated coat of adhesive to dry base and comb surface.
2. Tiling: Apply coat of adhesive to backs of dry tiles. Fill any profiles. Press tiles firmly onto float coat.
3. Finished adhesive thickness: Within range allowed by manufacturer.

## **62 Adhesive bed – notched trowel method for mesh backed mosaic to walls**

---

1. Application: By 3 mm floated coat of adhesive to dry background. Comb surface.
2. Placing mosaic sheets: Hang in horizontal rows, working downwards. Stagger vertical joints. Prevent slippage of sheets. Lightly beat mosaics into adhesive.
3. Width, plane and alignment of joints between sheets: To match joints between mosaic tiles.

## **64 Adhesive bed – notched trowel method for paper faced mosaic to walls**

---

1. Application: By 3 mm floated coat of adhesive to dry background. Comb surface.
2. Preparing mosaic sheets: Pregrout. Remove surplus before fixing.
3. Placing mosaic sheets: Hang in horizontal rows, working downwards. Stagger vertical joints.
4. Width, plane and alignment of joints between sheets: To match joints between mosaic tiles.
5. Paper face: Before adhesive hardens completely, remove paper face. Complete grouting. Wash off glue from face of mosaic.

## **70 Grouting**

---

1. Sequence: Grout when bed/ adhesive has set sufficient to prevent disturbance of tiles.
2. Joints: 6 mm deep (or depth of tile if less). Free from dust and debris.
3. Grouting: Fill joints completely, tool to profile, clean off surface. Leave free from blemishes.
4. Profile: Slightly concave
5. Polishing: When grout is hard, polish tiling with dry cloth.

## **80 Strip movement joints**

---

1. Manufacturer: Contractor's choice
  - 1.1. Product reference: Contractor's choice
2. Joints: Extend through tiles and bedding to base.

Ω End of Section



# M51

## Edge fixed carpeting

### Types of carpeting

#### 110 Carpeting

---

1. Location: Refer to drawings/schedule
2. Base: Timber boarding / Screed
  - 2.1. Preparation: As clause 340 / 350
3. Interlay: Dry Felt Paper where required
4. Underlay to BS 5808 and BS EN 14499
  - 4.1. Manufacturer: Contractors Choice
    - 4.1.1. Product reference: Submit proposals
  - 4.2. Type: Rubber crumb
  - 4.3. Class: Min GD/U
  - 4.4. Recycled content: Contractor's choice
5. Carpet
  - 5.1. Manufacturer: TBC
    - 5.1.1. Product reference: TBC
  - 5.2. Type: TBC
  - 5.3. BS EN 1307 classification
    - 5.3.1. Level of use class: Generally: 22 Stairs/Hallways: 23
    - 5.3.2. Luxury rating class: TBC
    - 5.3.3. Additional performance properties to BS EN 1307: Stairs: Suitability for use on stairs (Occasional use)
  - 5.4. Colour/ pattern: TBC
  - 5.5. Width: TBC
6. Method of seaming: To approval
7. Method of fixing: Carpet gripper.
8. Methods of fixing at openings/ free edges: Carpet gripper at raised thresholds. Edging strip at junctions with plastics flooring

#### 150 Carpeting for stairs

---

1. Location: Stairs
2. Base: Timber boarding
3. Nosings: Carpet to bullnosed edges
4. Carpet: As clause 110
5. Method of fixing: Adhesive.

### General/ preparation

#### 210 Workmanship generally

---

1. Finished carpeting: Tightly seamed, accurately fitted, neatly and securely fixed, smooth and evenly tensioned.

## **250 Carpet layout – pre-order requirements**

---

1. **Setting out:** Agree seam locations and pattern.

## **290 Conditioning carpet**

---

1. **Requirements:** As recommended by manufacturer.

## **310 Condition of works prior to laying**

---

1. **General requirements**
  - 1.1. Building weathertight and well dried out.
  - 1.2. Wet trades complete.
  - 1.3. Paintwork complete and dry.
  - 1.4. Floor service outlets, duct covers and other fixtures around which carpet is to be cut, fixed.

## **320 Environment**

---

1. **Temperature and humidity:** Before, during and after laying, maintain approximately at levels which will prevail after building is occupied.

## **330 Suitability of bases**

---

1. **General:** Commencement of laying carpeting will be taken as acceptance of suitability of bases.

## **340 New wet laid bases**

---

1. **Base drying aids:** Not used for at least four days prior to moisture content testing.
2. **Base moisture content test:** Carry out in accordance with BS 5325, Annexe A.
  - 2.1. **Locations for readings:** In all corners, along edges, and at various points over area being tested.
3. **Commencement of laying carpeting:** Not until all readings show 75% relative humidity or less.

## **350 Timber boarding/ strip flooring**

---

1. **Substrate:** Boards securely fixed and acceptably level with no protruding fasteners. Plane, sand or apply smoothing underlayment compound as necessary to give smooth, even surface.

## **Laying carpeting**

### **470 Laying carpet generally**

---

1. **Appearance of laid carpet:** Pieces of the same carpet type capable of being seen together to be of consistent appearance with pile lying in the same direction.
2. **Carpet perimeter:** Accurately and closely fitted leaving no gaps. Edges turned down and secured to grippers.
3. **Carpet tension:** Even, and such that carpet lies flat and will not ruck, ripple or become slack.
4. **Doorways and recesses:** Cut carpet in. Do not piece in without prior approval.

### **480 Power stretching**

---

1. **General:** Power stretch carpets greater than 5 metres in any dimension.

### **490 Doorways**

---

1. **Carpet joint:** On centre line of door leaf.

### **510 Edgings and cover strips**

---

1. Manufacturer: Contractors Choice
  - 1.1. Product reference: Submit Proposals
2. Material/ finish: Metal
3. Fixing: Secure with edge of carpet firmly gripped. Use matching fasteners where exposed to view.

### **530 Laying stair carpet with gripper**

---

1. Shifting allowance: Provide a minimum additional length of carpet equivalent to one tread and riser. Conceal by substituting for underlay at top or bottom of stairs.
2. Gripper locations
  - 2.1. One on each tread and each riser, close to intersection.
  - 2.2. To edge of each winder over 300 mm deep and abutting a wall.
  - 2.3. Along a landing over 300 mm deep and abutting a wall.
3. Pile direction: Towards bottom of stairs and perpendicular to nosings.

### **570 Completion**

---

1. Debris: Remove stay tacks and cut away partly loose warp and face yarns.
2. Surface irregularities and tension: Check and make necessary tension adjustments.

### **580 Waste**

---

1. Spare covering material: Retain suitable material for patching. On completion submit pieces for selection. Hand over selected pieces to Employer.

Ω End of Section

## M60

# Painting/ clear finishing

To be read with preliminaries/ general conditions.

### 22 Handling and storage

---

1. Coating materials: Deliver in sealed containers, labelled clearly with brand name, type of material and manufacturer's batch number.
2. Materials from more than one batch: Store separately. Allocate to distinct parts or areas of the work.

### 28 Protection

---

1. 'Wet paint' signs and barriers: Provide where necessary to protect other operatives and general public, and to prevent damage to freshly applied coatings.

### 30 Preparation generally

---

1. Standard: In accordance with BS 6150.
2. Refer to any pre-existing CDM Health and Safety File and CDM Construction Phase Plan where applicable.
3. Risk assessments and method statements for suspected hazardous materials: Prepare for operations, disposal of waste, containment and reoccupation, and obtain approval before commencing work.
4. Preparation materials: Types recommended by their manufacturers and the coating manufacturer for the situation and surfaces being prepared.
5. Substrates: Sufficiently dry in depth to suit coating.
6. Efflorescence salts, dirt, grease and oil: Remove. Give notice if contamination of surfaces/ substrates has occurred.
7. Surface irregularities: Provide smooth finish.
8. Organic growths and infected coatings
  - 8.1. Remove with assistance of biocidal solution.
  - 8.2. Apply residual effect biocidal solution to inhibit regrowth.
9. Joints, cracks, holes and other depressions: Fill with stoppers/ fillers. Provide smooth finish.
10. Dust, particles and residues from preparation: Remove and dispose of safely.
11. Water-based stoppers and fillers
  - 11.1. Apply before priming unless recommended otherwise by manufacturer.
  - 11.2. If applied after priming: Patch prime.
12. Doors, opening windows and other moving parts
  - 12.1. Ease, if necessary, before coating.
  - 12.2. Prime resulting bare areas.

### 36 Ironmongery

---

1. Removal: Before commencing work remove ironmongery from surfaces to be coated.
2. Replacement: Refurbish as necessary; refit when coating is dry.

### 37 Wood preparation

---

1. General: Provide smooth, even finish with lightly rounded arrises.
2. Degraded or weathered surface wood: Take back surface to provide suitable substrate.

3. Degraded substrate wood: Repair with sound material of same species.
4. Heads of fasteners: Countersink sufficient to hold stoppers/ fillers.
5. Resinous areas and knots: Apply two coats of knotting.
6. Defective primer: Take back to bare wood and reprime.

### **39 Steel preparation**

---

1. Areas of defective primer, corrosion and loose scale: Take back to bare metal. Reprime as soon as possible.
2. Defective paintwork: Remove to leave a firm edge and clean bright metal.
3. Sound paintwork: Provide key for subsequent coats.
4. Corrosion and loose scale: Take back to bare metal.
5. Residual rust: Treat with a proprietary removal solution.
6. Bare metal: Apply primer as soon as possible.
7. Remaining areas: Degrease.

### **41 Masonry and rendering preparation**

---

1. Loose and flaking material: Remove.

### **43 Plaster preparation**

---

1. Nibs, trowel marks and plaster splashes: Scrape off.
2. Overtrowelled 'polished' areas: Provide suitable key.
3. Depressions around fixings: Fill with stopper/ filler.

### **52 Sealing of internal movement joints**

---

1. General: To junctions of walls and ceilings with architraves, skirtings and other trims.
2. Sealant: Water-borne acrylic.
  - 2.1. Manufacturer: Contractor's choice
    - 2.1.1. Product reference: Contractor's choice
  - 2.2. Preparation and application: As section Z22.

### **61 Coating generally**

---

1. Application: In accordance with BS 6150,
2. Conditions: Maintain suitable temperature, humidity and air quality.
3. Surfaces: Clean and dry at time of application.
4. Thinning and intermixing: Not permitted unless recommended by manufacturer.
5. Overpainting: Do not paint over intumescent strips or silicone mastics.
6. Priming coats: Apply as soon as possible on same day as preparation is completed.
7. Finish
  - 7.1. Even, smooth and of uniform colour.
  - 7.2. Free from brush marks, sags, runs and other defects.
  - 7.3. Cut in neatly.
8. Doors, opening windows and other moving parts: Ease before coating and between coats.

### **65 Concealed joinery surfaces**

---

1. General: After priming, apply additional coatings to surfaces that will be concealed when component is fixed in place.

## **68 Staining wood**

---

1. **Primer:** Apply, if recommended by stain manufacturer.
2. **Application:** Apply in flowing coats and brush out excess stain to produce uniform appearance.

Ω End of Section

## **N10**

### **General fixtures/ furnishings/ equipment**

To be read with preliminaries/ general conditions.

#### **50 Solid fuel room heaters**

---

1. Flues:
2. Installation: To BS 8303-2 by a SFA/ HETAS Ltd registered installer.

#### **90 Fireplace hearths**

---

1. Standard: To BS 1251.

#### **96 Mailboxes**

---

1. Standard: To BS EN 13724.

Ω End of Section

# N11

## Domestic kitchen fittings, furnishings and equipment

To be read with preliminaries/ general conditions

### 10 Fitted base units and wall units

---

1. Description: Contractors Choice
2. Standard: To BS EN 14749.

### 20 Worktops

---

1. Description: Contractors Choice
2. Standard: To BS 6222-3

### 30 Sinks, taps, traps and wastes

---

1. Description: Contractors Choice
2. Sinks
  - 2.1. Standard: To BS EN 13310
3. Wastes:
  - 3.1. Standard: To BS EN 274-1, -2 and -3
4. Traps:
  - 4.1. Standard: To BS EN 274-1, -2 and -3

### 50 Sealant

---

1. Standard: To BS EN ISO 11600, Class F20 HM
2. Type: One-part silicone
  - 2.1. Manufacturer: Contractor's choice
    - 2.1.1. Product reference: Contractor's choice
3. Colour: To match worktop

## Execution

### 60 Moisture content of wood and wood-based boards

---

1. Control and monitoring
  - 1.1. Method statement: Submit.

### 65 Installation generally

---

1. Fixings and adhesives: As section Z20.
2. Services: As sections S90 and V90

### 70 Installing units and worktops

---

1. General: Well fitting, stable and secure.

### 75 Installing appliances

---

1. Connections: Provide to electric, gas, and hot and cold water services.

### 80 Installing sinks, taps and wastes

---

1. Water supply: According to BS EN 806-2 and -4.



2. Taps
  - 2.1. Fixing: Secure, watertight seal with the appliance.
  - 2.2. Positioning: Hot tap to left of cold tap as viewed by the user of the appliance.
3. Wastes
  - 3.1. Bedding: Waterproof jointing compound.
  - 3.2. Fixing: With resilient washer between appliance and backnut.

## **85 Sealant bedding and pointing**

---

1. Application: As section Z22.
2. Bedding: TBC
3. Pointing: Between units and floor.  
Between units and splash backs

## **90 Installing trims and mouldings**

---

1. Lengths: Un-jointed between angles or ends of runs.
2. Angle joints: Mitred.

Ω End of Section

## N13 Sanitary appliances and fittings

To be read with preliminaries/ general conditions.

### 68 Sealant for pointing

---

1. Standard: To BS EN ISO 11600
  - 1.1. Class: F20 HM
2. Type: Silicone
  - 2.1. Manufacturer: Contractor's choice
    - 2.1.1. Product reference: Contractor's choice
3. Colour: To match fittings and finishes

### 70 Installation generally

---

1. Standards: In accordance with BS 6465-1, -2 and -3.
2. Assembly and fixing: Fix appliances securely to structure, without taking support from pipelines, level and plumb and so that surfaces designed to fall drain as intended.
3. Fasteners: Nonferrous or stainless steel.
4. Jointing and bedding compounds: Recommended by manufacturers of appliances, accessories and pipes, to form watertight joints between appliances and backgrounds (except cisterns) and between appliances and discharge pipes.
5. Supply and discharge pipework: Fix before appliances.
6. Timing: Tiled backgrounds, other than splashbacks, complete before fixing appliances. Do not overstress tiles when fixing appliances.
7. On completion: Components and accessories working correctly with no leaks.
8. Labels and stickers: Remove.

### 75 Installing cisterns

---

1. Cistern operating components: Obtain from cistern manufacturer.
2. Inlet and flushing valves: Match to pressure of water supply.
3. Internal overflows: Into pan, to give visible warning of discharge.
4. External overflows: Fix pipes to falls, and locate to give visible warning of discharge. Agree position.

### 76 Installing taps

---

1. Fixing: Secure against twisting.
2. Seal with appliance: Watertight.
3. Positioning: Hot tap to left of cold tap as viewed by user of appliance.

### 77 Installing wastes and overflows

---

1. Bedding: Waterproof jointing compound.
2. Fixing: With resilient washer between appliance and backnut.

### 81 Sealant bedding and pointing

---

1. Bedding: Bed and point basins to underside of vanity units
2. Pointing: Joints between appliances and splashbacks. Joints between appliances and walls. Joints between appliances and floors

Ω End of Section

## **P10**

### **Sundry insulation/ proofing work**

To be read with preliminaries/ general conditions.

#### **15 Insulation fitted between rafters ROOF**

---

1. Manufacturer: Knauf Insulation Ltd
  - 1.1. Product reference: Knauf Insulation Rafter roll 32
2. Material: Mineral wool to BS EN 13162
  - 2.1. Thickness: 250mm (made up of 3 layers)
3. Installation requirements
  - 3.1. General: Insulation to be friction fitted between rafters with no gaps.
  - 3.2. Joints: Butted, no gaps.
  - 3.3. Fasteners: Used where necessary to retain insulation and/or prevent slumping.
  - 3.4. Vapour control facing (if specified): Fit insulation with facing on warm side. Staple overlap (if provided) to underside of rafters; tape joints between adjacent overlaps using vapour impermeable adhesive tape.
  - 3.5. Air space above insulation: Not required
  - 3.6. Eaves ventilation: Unobstructed

#### **40 Insulation fitted between or to the face of studs PITCHED CEILINGS**

---

1. Location: Underside of rafters to pitched ceilings
2. Manufacturer: Knauf Insulation Ltd
  - 2.1. Product reference: Knauf PIR Laminate
3. Material: Insulated plasterboard
  - 3.1. Facing: Plasterboard
  - 3.2. Thickness: 75mm Overall
4. Installation requirements
  - 4.1. Joints: Butted, no gaps.
  - 4.2. Fasteners: Use where necessary to retain insulation and/ or prevent slumping.

#### **45 Insulation laid between floor joists**

---

1. Manufacturer: Isover
  - 1.1. Product reference: Acoustic partition roll
2. Material: Glass wool to BS EN 13162
3. Thickness: 100mm
4. Installation requirements
  - 4.1. Joints: Butted, no gaps.
  - 4.2. Service openings: Sealed.
  - 4.3. Electric cables overlaid by insulation: Sized accordingly.

#### **60 Air and vapour control layer**

---

1. Description: To roof
2. Manufacturer: DuPont Tyvek
  - 2.1. Product reference: AirGuard Control

3. Material: Plastic and rubber vapour control layers EN 13984: 2013
4. Minimum vapour resistance: 500 MN s/g
5. Installation requirements
  - 5.1. Setting out: Joints minimized.
  - 5.2. Method of fixing: To manufacturers recommendations
  - 5.3. Joints: At supports only, lapped 150 mm minimum.
  - 5.4. Openings: Membrane fixed to reveals.
  - 5.5. Joints and edges: Sealed with double sided tape with vapour resistivity not less than the air and vapour control layer.
  - 5.6. Penetrations: Sealed.
  - 5.7. Other requirements: Moisture content of timber at time of fixing (maximum): 20%

## **65 Breather membrane**

---

1. Manufacturer: DuPont Tyvek
  - 1.1. Product reference: Supro
2. Standard: BS EN 13859-1
  - 2.1. Characteristics: Reaction to fire: To BS EN 13501-1, Class B-s3, d0 or better
3. Installation requirements
  - 3.1. Setting out: Joints minimized. Membrane to form a continuous barrier to prevent water, snow and wind blown dust reaching the substrate.
  - 3.2. Method of fixing: To manufacturers recommendations
  - 3.3. Joints: Lapped 100 mm minimum horizontally and 150 mm minimum vertically
  - 3.4. Openings: Membrane fixed to reveals.
  - 3.5. Bottom edges: Membrane lapped over flashings, sills, etc. to allow free drainage to the exterior.
  - 3.6. Penetrations: Sealed.

Ω End of Section

## P20

### Unframed isolated trims/ skirtings/ sundry items

To be read with preliminaries/ general conditions.

#### 10A Softwood Skirtings

---

1. Description: SKIRTINGS GENERALLY
2. Quality of wood and fixing: To BS 1186-3.
  - 2.1. Species: Contractor's choice
  - 2.2. Class: 2
3. Moisture content at time of fixing: 9 -13%
4. Profile: Ogee
  - 4.1. Finished size: 19 x 120 mm
5. Finish as delivered: Sanded, to receive paint finish as M60
6. Fixing: Plugged, and screwed at 450 centres

#### 10B Softwood Window Boards

---

1. Description: WINDOW BOARDS
2. Quality of wood and fixing: To BS 1186-3.
  - 2.1. Species: Contractor's choice
  - 2.2. Class: 2
3. Moisture content at time of fixing: 9 -13%
4. Profile: Bullnosed
  - 4.1. Finished size: Refer to drawings
5. Finish as delivered: Prepared and primed, as section M60
6. Fixing: Plugged, and screwed at 450mm centres and to edges

#### 80 Installation generally

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1. Joinery workmanship: As section Z10.
2. Metal workmanship: As section Z11.
3. Methods of fixing and fasteners: As section Z20 where not specified.
4. Straight runs: To be in one piece, or in long lengths with as few joints as possible.
5. Running joints: Location and method of forming to be agreed where not detailed.
6. Joints at angles: Mitre, unless shown otherwise
7. Position and level: To be agreed where not detailed.

Ω End of Section

## **P21**

### **Door/ window ironmongery**

To be read with preliminaries/ general conditions.

#### **3 Quantities and locations**

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1. Quantities and locations of ironmongery are in the door schedule .
2. Fixing: As sections L10 and L20.

#### **4 Ironmongery range selected by contractor for internal doors & Bin/Bike Store doors**

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1. Source: Single coordinated range.
2. Notification: Submit details of selected range, manufacturer and/ or supplier.
3. Principal material/ finish: Satin stainless steel, grade 1.4301 (304) for internal doors.  
External grade with black finish for external bin/bike stores
4. Items unavailable within selected range: Submit proposals.

Ω End of Section

# P31

## Holes, chases, covers and supports for services

### Clauses

#### 10 Holes, recesses and chases in masonry

---

1. Locations: To maintain integrity of strength, stability and sound resistance of construction.
2. Sizes: Minimum needed to accommodate services.
  - 2.1. Holes (maximum): 300 mm<sup>2</sup>.
3. Walls of hollow or cellular blocks: Do not chase.
4. Walls of other materials
  - 4.1. Vertical chases: No deeper than one third of single leaf thickness, excluding finishes.
  - 4.2. Horizontal or raking chases: No longer than 1 m. No deeper than one sixth of the single leaf thickness, excluding finishes.
5. Chases and recesses: Do not set back to back. Offset by a clear distance at least equal to the wall thickness.
6. Cutting: Do not cut until mortar is fully set. Cut carefully and neatly. Avoid spalling, cracking and other damage to surrounding structure.

#### 20 Notches and holes in structural timber

---

1. General: Avoid if possible.
2. Sizes: Minimum needed to accommodate services.
3. Position: Do not locate near knots or other defects.
4. Notches and holes in same joist: Minimum 100 mm apart horizontally.
5. Notches in joists
  - 5.1. Position: Locate at top. Form by sawing down to a drilled hole.
  - 5.2. Depth (maximum): 0.15 x joist depth.
  - 5.3. Distance from supports: Between 0.1 and 0.2 x span.
6. Holes in joists
  - 6.1. Position: Locate on neutral axis.
  - 6.2. Diameter (maximum): 0.25 x joist depth.
  - 6.3. Centres (minimum): 3 x diameter of largest hole.
  - 6.4. Distance from supports: Between 0.25 and 0.4 of span.
7. Notches in roof rafters, struts and truss members: Not permitted.
8. Holes in struts and columns: Locate on neutral axis.
  - 8.1. Diameter (maximum): 0.25 x minimum width of member.
  - 8.2. Centres (minimum): 3 x diameter of largest hole.
  - 8.3. Distance from ends: Between 0.25 and 0.4 of span.

#### 30 Pipe sleeves

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1. Material: Match pipeline.
2. Sleeves: Extend through full thickness of wall or floor. Position accurately.
  - 2.1. Clearance around service (maximum): 20 mm or diameter of service, whichever is the lesser.
  - 2.2. Installation: Bed solid.



#### **40 Sealing around services**

---

1. Service: Electrical cabling and fittings
2. Location: Walls and ceilings
3. Sealing material: Silicone sealant
4. Method: Bed backboxes on sealant and seal neatly around cable entry into fittings.
5. Requirements: Moisture vapour and airtight

#### **40 Sealing around services Type A**

---

1. Service: Hot and cold water pipes, Gas pipes, Waste pipes, Soil vent pipes, Warning/Overflow/Vent pipes
2. Location: Walls and ceilings and floors
3. Sealing material: Silicone sealant generally, submit proposals where not viable. Tightly rammed mineral wool where fire rated requirement.
4. Method: Completely fill gaps with sealant and finish neatly
5. Requirements: Moisture vapour and airtight, Watertight, Prevent insect ingress

Ω End of Section

## Q25 Slab/ brick/ sett/ cobble pavings

### To be read with preliminaries/ general conditions

#### 11 Laying pavings – general

---

1. Appearance: Smooth and even with regular joints and accurate to line, level and profile.
2. Falls: To prevent ponding.
3. Bedding of paving units: Firm so that rocking or subsidence does not occur or develop.
  - 3.1. Bedding/ Laying course: Consistently and accurately graded, spread and compacted to produce uniform thickness and support for paving units.
4. Slopes: Lay paving units upwards from the bottom of slopes.
5. Paving units: Free of mortar and sand stains.
6. Cutting: Cleanly and accurately, without spalling, to give neat junctions with edgings and adjoining finishes.

#### 16 Levels of paving

---

1. Permissible deviation from specified levels (generally)
  - 1.1. Generally:  $\pm 6$  mm.
2. Height of finished paving above features
  - 2.1. At gullies: +6 to +10 mm.
  - 2.2. At drainage channels and kerbs: +3 to +6 mm.

#### 18 Regularity of paved surfaces

---

1. Maximum undulations in the surface of pavings (except tactile paving surfaces) under a 1 m straight edge placed anywhere on the surface (where appropriate in relation to the geometry of the surface): 3 mm.
2. Joints between paving units or utility access covers
  - 2.1. Joints flush with the surface: difference in level between adjacent units to be no more than twice the joint width (with a 5mm max difference in level).
  - 2.2. Recessed, filled joints: difference in level between adjacent units to be no greater than 2 mm; the recess to be no deeper than 5 mm.
  - 2.3. Unfilled joints: difference in level between adjacent units to be no greater than 2 mm.
3. Sudden irregularities: Not permitted.

#### 21 Protection

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1. Cleanliness: Keep paving clean and free from mortar droppings, oil and other materials likely to cause staining.
2. Materials storage: Do not overload pavings with stacks of materials.
3. Handling: Do not damage paving unit corners, arrises, or previously laid paving.
4. Mortar bedded pavings: Keep free from traffic after laying:
  - 4.1. Pedestrian traffic (minimum): 4 days
  - 4.2. Vehicular traffic (minimum): 10 days
5. Access: Restrict access to paved areas to prevent damage from site traffic and plant.

#### 41 Laying natural stone cobble paving

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1. Bedding, laying, jointing and completion: In accordance with BS 7533-7 and -10.

## **66 Sand/ fine aggregate for unbound laying course and jointing of concrete flag paving**

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1. **Standard:** To BS 7533-4, unbound construction laying course and jointing material.
2. **Purity:** Free from deleterious salts, contaminants, lime and cement.
3. **Procurement:** Obtain from one source and ensure consistent grading.

## **72 Laying geotextile sheet overlays**

---

1. **Location:** Immediately below the laying course.
2. **Laying:** Fit neatly at edge restraints and other features that interrupt the laying course, e.g. drainage fittings, channels, manholes and kerbs.
3. **Edge detail:** Turn sheet up to form an upstand against features, height not less than thickness of the laying course.
4. **Jointing:** Lap by 300 mm.

## **74 Laying flag and slab paving – sand/ fine aggregate laying course and jointing**

---

1. **Standard:** In accordance with BS 7533-4.
2. **Flag installation and cutting:** To Interpave 'Concrete flag paving'.
3. **Laying course**
  - 3.1. **Nominal thickness after compaction:** 25 mm
4. **Joint width:** 2-5 mm.

## **76 Laying flag and slab paving – mortar laying course and jointing**

---

1. **Standard generally:** In accordance with BS 7533-4.
2. **Flag installation and cutting:** To Interpave 'Concrete flag paving'.
3. **Laying course**
  - 3.1. **Nominal thickness:** 25 mm after compaction

## **82 Tooled joints in mortar-bedded units**

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1. **Joints:** Completely filled with bedding mortar as work proceeds.
  - 1.1. **Finish:** Neat flush profile.

## **90 Completion of paving with dry sand or fine aggregate filled joints**

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1. **Sand dressing:** Leave a thin layer of dry jointing sand/ fine aggregate over the paving, sweep clean before practical completion
2. **Final compaction of the surface course:** In accordance with BS 7533-3.
3. **Vacuum cleaning machines:** Not allowed.

Ω End of Section

## **Q50**

### **Site/street furniture/equipment**

To be read with preliminaries/ general conditions.

#### **40A Nesting boxes**

---

1. Description: Bat Box for Tree (as per Ecological Survey recommendations)
2. Manufacturer: Schwegler
  - 2.1. Product reference: 1FD Bat Box
3. Method of fixing: In tree, direction, height and fixing to manufacturers recommendations.

#### **40B Nesting boxes**

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1. Description: Bat Boxes for Timber Garden Store (as per Ecological Survey recommendations)
2. Manufacturer: Schwegler
  - 2.1. Product reference: 2no Schwegler 1FF bat boxes
3. Method of fixing: direction, height and fixing to manufacturers recommendations.

Ω End of Section

## R10 Rainwater drainage systems

To be read with preliminaries/ general conditions.

### 12 Cast iron gutters

---

1. Standard: To BS 460
2. Manufacturer: Alumasc Water Management Solutions
  - 2.1. Product reference: Apex Heritage Cast Iron Gutters
3. Profile: Half-round
4. Jointing type: Jointing clips
5. Nominal size: 100
6. Finish as supplied: Paint finish, colour **Black (as required by Planning Conditions)**
7. Brackets: Drive in Rise & Fall with 330mm Stay - Half Round
  - 7.1. Fixings: To manufacturers recommendations
    - 7.1.1. Size: To manufacturers recommendations
8. Accessories: Stop ends
9. Fixing: To manufacturers recommendations
10. Jointing: To prevent water penetration whilst accommodating thermal movement. Installation & Fixing to manufacturers recommendations.

### 32 Cast iron pipework - flexible couplings

---

1. Standard: To BS EN 877, Agrément certified.
2. Manufacturer: Alumasc
  - 2.1. Product reference: Apex Heritage Range
3. Coupling type: Push fit
4. Nominal size: Round 63mm
5. Finish as supplied: Paint finish, colour to match gutters. **Black (as required by Planning Conditions)**
6. Brackets: Cast iron holderbats
  - 6.1. Fixings: To manufacturers recommendations
    - 6.1.1. Size: To manufacturers recommendations
7. Accessories: Access fittings, Swan necks / bends
8. Fixing: To manufacturers recommendations
9. Jointing: To manufacturers recommendations

### 50 Installation generally

---

1. Electrolytic corrosion: Avoid contact between dissimilar metals where corrosion may occur.
2. Discharge of rainwater: Complete, and without leakage or noise nuisance.
3. Components: Obtain from same manufacturer for each type of pipework and guttering.
4. Allowance for thermal and building movement: Provide and maintain clearance as fixing and jointing proceeds.
5. Fixings and fasteners: As section Z20.
6. Protection
  - 6.1. Fit purpose made temporary caps to prevent ingress of debris.

6.2. Fit access covers, cleaning eyes and blanking plates as the work proceeds.

## **60 Gutters laid to fall**

---

1. **Setting out:** To true line and even gradient to prevent ponding or backfall. Position high points of gutters as close as practical to the roof and low points not more than 50 mm below the roof.
2. **Joints:** Watertight.
3. **Roofing underlay:** Dressed into gutter.

## **65 Gutters laid level**

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1. **Setting out:** Level and as close as practical to roof.
2. **Joints:** Watertight.
3. **Roofing underlay:** Dressed into gutter.

## **70 Pipework**

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1. **Fixing:** Securely, plumb and/ or true to line with additional supports as necessary to support pipe collars, particularly at changes in direction.
2. **Cut ends of pipes and gutters:** Clean and square with burrs and swarf removed.

## **92 Gutter test**

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1. **Preparation:** Temporarily block all outlets.
2. **Testing:** Fill gutters to overflow level and after 5 minutes closely inspect for leakage.

Ω End of Section

# Z10

## Purpose-made joinery

To be read with preliminaries/ general conditions.

### 110 Fabrication

---

1. Standard: To BS 1186-2.
2. Sections: Accurate in profile and length, and free from twist and bowing. Formed out of solid unless shown otherwise.
  - 2.1. Machined surfaces: Smooth and free from tearing, wooliness, chip bruising and other machining defects.
3. Joints: Tight and close fitting.
4. Assembled components: Rigid. Free from distortion.
5. Screws: Provide pilot holes.
  - 5.1. Screws of 8 gauge (4 mm diameter) or more and screws into hardwood: Provide clearance holes.
  - 5.2. Countersink screws: Heads sunk at least 2 mm below surfaces visible in completed work.
  - 5.3. Adhesives: Compatible with wood preservatives applied and end uses of timber.

### 120 Cross section dimensions of timber

---

1. General: Dimensions on drawings are finished sizes.
2. Maximum permitted deviations from finished sizes
  - 2.1. Softwood sections: To BS EN 1313-1:-
    - 2.1.1. Clause 6 for sawn sections.
  - 2.2. Hardwood sections: To BS EN 1313-2:-
    - 2.2.1. Clause 6 for sawn sections.
    - 2.2.2. Clause NA.3 for further processed sections.

### 130 Preservative treated wood

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1. Cutting and machining: Completed as far as possible before treatment.
2. Extensively processed timber: Retreat timber sawn lengthways, thickened, planed, ploughed, etc.
3. Surfaces exposed by minor cutting and/ or drilling: Treat as recommended by main treatment solution manufacturer.

### 140 Moisture content

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1. Wood and wood-based products: Maintained within range specified for the component during manufacture and storage.

### 250 Finishing

---

1. Surfaces: Smooth, even and suitable to receive finishes.
  - 1.1. Arrises: Eased unless shown otherwise on drawings.
2. End grain in external components: Sealed with primer or sealer as section M60 and allowed to dry before assembly.

Ω End of Section

## Z20

# Fixings and adhesives

### Products

#### 310 Fasteners generally

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1. Materials: To have:
  - 1.1. Bimetallic corrosion resistance appropriate to items being fixed.
  - 1.2. Atmospheric corrosion resistance appropriate to fixing location.
2. Appearance: Submit samples on request.

#### 320 Packings

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1. Materials: Non-compressible, corrosion proof.
2. Area of packings: Sufficient to transfer loads.

#### 340 Masonry fixings

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1. Light duty: Plugs and screws.
2. Heavy duty: Expansion anchors or chemical anchors.

#### 350 Plugs

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1. Type: Proprietary types to suit substrate, loads to be supported and conditions expected in use.

#### 390 Adhesives generally

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1. Standards
  - 1.1. Hot-setting phenolic and aminoplastic: To BS 1203.
  - 1.2. Thermosetting wood adhesives: To BS EN 12765.
  - 1.3. Thermoplastic adhesives: To BS EN 204.

#### 410 Powder actuated fixing systems

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1. Types of fastener, accessories and consumables: As recommended by tool manufacturer.

### Execution

#### 610 Fixing generally

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1. Integrity of supported components: Select types, sizes, quantities and spacings of fixings, fasteners and packings to retain supported components without distortion or loss of support.
2. Components, substrates, fixings and fasteners of dissimilar metals: Isolate with washers/ sleeves to avoid bimetallic corrosion.
3. Appearance: Fixings to be in straight lines at regular centres.

#### 620 Fixing through finishes

---

1. Penetration of fasteners and plugs into substrate: To achieve a secure fixing.

#### 630 Fixing packings

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1. Function: To take up tolerances and prevent distortion of materials and components.
2. Limits: Do not use packings beyond thicknesses recommended by fixings and fasteners manufacturer.



3. Locations: Not within zones to be filled with sealant.

### **640 Fixing cramps**

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1. Cramp positions: Maximum 150 mm from each end of frame sections and at 600 mm maximum centres.
2. Fasteners: Fix cramps to frames with screws of same material as cramps.
3. Fixings in masonry work: Fully bed in mortar.

### **670 Pelleted countersunk screw fixing**

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1. Finished level of countersunk screw heads: Minimum 6 mm below timber surface.
2. Pellets: Cut from matching timber, match grain and glue in to full depth of hole.
3. Finished level of pellets: Flush with surface.

### **680 Plugged countersunk screw fixing**

---

1. Finished level of countersunk screw heads: Minimum 6 mm below timber surface.
2. Plugs: Glue in to full depth of hole.
3. Finished level of plugs: Projecting above surface.

### **690 Using powder actuated fixing systems**

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1. Powder actuated fixing tools: To BS 4078-2 and Kitemark certified.
2. Operatives: Trained and certified as competent by tool manufacturer.

### **700 Applying adhesives**

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1. Surfaces: Clean. Adjust regularity and texture to suit bonding and gap filling characteristics of adhesive.
  - 1.1. Support and clamping during setting: Provide as necessary. Do not mark surfaces of or distort components being fixed.
2. Finished adhesive joints: Fully bonded. Free of surplus adhesive.

Ω End of Section

# Z21 Mortars

## Cement gauged mortars

### 110 Cement gauged mortar mixes

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1. Specification: Proportions and additional requirements for mortar materials are specified elsewhere.

### 120 Sand for site made cement gauged masonry mortars

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1. Standard: To BS EN 13139.
2. Grading: 0/2 (FP or MP).
  - 2.1. Fines content where the proportion of sand in a mortar mix is specified as a range (e.g. 1:1: 5-6):
    - 2.1.1. Lower proportion of sand: Use category 3 fines.
    - 2.1.2. Higher proportion of sand: Use category 2 fines.
3. Sand for facework mortar: Maintain consistent colour and texture. Obtain from one source.

### 131 Ready-Mixed lime:sand for cement gauged masonry mortars

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1. Standard: To BS EN 998-2.
2. Lime: Nonhydraulic to BS EN 459-1.
  - 2.1. Type: CL 90S.
3. Pigments for coloured mortars: To BS EN 12878.

### 135 Site made lime:sand for cement gauged masonry mortars

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1. Permitted use: Where a special colour is not required and in lieu of factory made ready-mixed material.
2. Lime: Nonhydraulic to BS EN 459-1.
  - 2.1. Type: CL 90S.
3. Mixing: Thoroughly mix lime with sand, in the dry state. Add water and mix again. Allow to stand, without drying out, for at least 16 hours before using.

### 160 Cements for mortars

---

1. Cement: To BS EN 197-1 and CE marked.
  - 1.1. Types: Portland cement, CEM I.
2. Portland limestone cement, CEM II/A-L or CEM II/A-LL.
3. Portland slag cement, CEM II/B-S.
4. Portland fly ash cement, CEM II/B-V.
  - 4.1. Strength class: 32.5, 42.5 or 52.5.
5. White cement: To BS EN 197-1 and CE marked.
  - 5.1. Type: Portland cement, CEM I.
  - 5.2. Strength class: 52.5.
6. Sulfate resisting Portland cement
  - 6.1. Types: To BS EN 197-1 Sulfate resisting Portland cement, CEM I/SR and CE marked.
7. To BS EN 197-1 fly ash cement, CEM II/B-V and CE marked.
  - 7.1. Strength class: 32.5, 42.5 or 52.5.

8. Masonry cement: To BS EN 413-1 and CE marked.
  - 8.1. Class: MC 12.5.

### **180 Admixtures for site made cement gauged mortars**

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1. Air entraining (plasticizing) admixtures: To BS EN 934-3 and compatible with other mortar constituents.
2. Other admixtures: Submit proposals.
3. Prohibited admixtures: Calcium chloride, ethylene glycol and any admixture containing calcium chloride.

### **190 Retarded ready to use cement gauged masonry mortars**

---

1. Standard: BS EN 998-2.
2. Lime for cement:lime:sand mortars: Nonhydraulic to BS EN 459-1.
  - 2.1. Type: CL 90S.
3. Pigments for coloured mortars: To BS EN 12878.
4. Time and temperature limitations: Use within limits prescribed by mortar manufacturer.
  - 4.1. Retempering: Restore workability with water only within prescribed time limits.

### **210 Making cement gauged mortars**

---

1. Batching: By volume. Use clean and accurate gauge boxes or buckets.
  - 1.1. Mix proportions: Based on dry sand. Allow for bulking of damp sand.
2. Mixing: Mix materials thoroughly to uniform consistency, free from lumps.
  - 2.1. Mortars containing air entraining admixtures: Mix mechanically. Do not overmix.
3. Working time (maximum): Two hours at normal temperatures.
4. Contamination: Prevent intermixing with other materials.

### **Lime:sand mortars**

#### **310 Lime:sand mortar mixes**

---

1. Specification: Proportions and additional requirements for mortar materials are specified elsewhere.

#### **320 Sand for lime:sand masonry mortars**

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1. Type: Sharp, well graded.
  - 1.1. Quality, sampling and testing: To BS EN 13139.
  - 1.2. Grading/ Source: As specified elsewhere in relevant mortar mix items.

#### **345 Admixtures for hydraulic lime:sand mortars**

---

1. Air entraining (plasticizing) admixtures: To BS EN 934-3 and compatible with other mortar constituents.
2. Prohibited admixtures: Calcium chloride, ethylene glycol and any admixture containing calcium chloride.

#### **360 Making lime:sand mortars generally**

---

1. Batching: By volume. Use clean and accurate gauge boxes or buckets.
2. Mixing: Mix materials thoroughly to uniform consistency, free from lumps.
3. Contamination: Prevent intermixing with other materials, including cement.

### **370 Site prepared nonhydraulic lime:sand mortars**

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1. **Mixing:** Mix materials thoroughly by compressing, beating and chopping. Do not add water.
  - 1.1. **Equipment:** Roller pan mixer or submit proposals.
2. **Maturation period before use (maximum):** Seven days

### **400 Making hydraulic lime:sand mortars**

---

1. **Mixing hydrated hydraulic lime:sand:** Follow the lime manufacturer's recommendations for each stage of the mix.
  - 1.1. **Water quantity:** Only sufficient to produce a workable mix.
2. **Working time:** Within limits recommended by the hydraulic lime manufacturer.

Ω End of Section



Specification created using NBS Chorus