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TOL - Tower Education: Reveller Learning Centre

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Tender DRAFT

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F10 **Brick/ block walling**

Types of walling

230 Reclaimed brick facing brickwork

1. Description: To Tower Bridge Arches
2. Reclaimed bricks: To match existing
 - 2.1. Condition: Sound, free from mortar and deleterious matter.
 - 2.2. Supplier/ Source: Submit proposals
 - 2.3. Format: To match existing
3. Mortar: As section Z21.
 - 3.1. Standard: BS EN 491-1
 - 3.2. Mix: To match existing.
 - 3.3. Additional requirements: Submit samples of sand for approval
4. Bond: To match existing
5. Joints: To match existing
6. Features: None

395 Damp-proof course brickwork

1. Bricks to BS EN 771-1.
 - 1.1. Manufacturer: Submit proposals
 - 1.1.1. Product reference: Submit proposals
 - 1.2. Water absorption: Equal to or less than 4.5%
 - 1.3. Net dry density: Equal to or greater than 2100 kg/m³
 - 1.4. Freeze/ thaw category: F2.
 - 1.5. Active soluble salts content category: S2.
 - 1.6. Additional requirements: None
2. Mortar: As section Z21.
 - 2.1. Standard: To BS EN 998-2
 - 2.2. Mix: To match existing
 - 2.3. Additional requirements: None
3. Bond: To match existing
4. Joints: To match existing

Testing - Not Used

Workmanship generally

430 Conditioning of clay bricks and blocks

1. Bricks and blocks delivered warm from manufacturing process: Do not use until cold.
2. Absorbent bricks in warm weather: Wet to reduce suction. Do not soak.

440 Conditioning of concrete bricks/ blocks

1. Autoclaved concrete bricks/ blocks delivered warm from manufacturing process: Do not use.
2. Age of nonautoclaved concrete bricks/ blocks: Do not use until at least four weeks old.
3. Avoidance of suction in concrete bricks/ blocks: Do not wet.
 - 3.1. Use of water retaining mortar admixture: Submit details.

460 Mortar designations

1. Mix proportions: Submit proposals. All mortar mixes must be sampled, presented to the Client and Historic England and agreed before commencement of work.
2. Batching: Mix proportions by volume.
3. Mortar type: Continuous throughout any one type of masonry work.

500 Laying generally

1. Mortar joints: Fill vertical joints. Lay bricks, solid and cellular blocks on a full bed.
2. AAC block thin mortar adhesive and gypsum block adhesive joints: Fill vertical joints. Lay blocks on a full bed.
3. Clay block joints
 - 3.1. Thin-layer mortar: Lay blocks on a full bed.
 - 3.2. Interlocking perpend: Butted.
4. Bond where not specified: Half-lap stretcher.
5. Vertical joints in brick and concrete block facework: Even widths. Plumb at every fifth cross joint.

520 Accuracy

1. Courses: Level and true to line.
2. Faces, angles and features: Plumb.
3. Permissible deviations
 - 3.1. Position in plan of any point in relation to the specified building reference line and/ or point at the same level: ± 10 mm.
 - 3.2. Straightness in any 5 m length: ± 5 mm.
 - 3.3. Verticality up to 3 m height: ± 10 mm.
 - 3.4. Verticality up to 7 m height: ± 14 mm.
 - 3.5. Overall thickness of walls: ± 10 mm.
 - 3.6. Level of bed joints up to 5 m (brick masonry): ± 11 mm.
 - 3.7. Level of bed joints up to 5 m (block masonry): ± 13 mm.

535 Height of lifts in walling using cement-gauged or hydraulic lime mortar

1. Quoins and advance work: Rack back.
2. Lift height (maximum): 1.2 m above any other part of work at any time.
3. Daily lift height (maximum): 1.5 m for any one leaf.

540 Height of lifts in walling using thin-layer mortar

1. Quoins and advance work: Rack back.
2. Lift height (maximum): 1.3 m above any other part of work at any time.

545 Levelling of separate leaves

1. Locations for equal levelling of cavity wall leaves: As follows:
 - 1.1. Every course containing vertical twist type ties or other rigid ties.
 - 1.2. Every third tie course for double triangle/ butterfly ties.
 - 1.3. Courses in which lintels are to be bedded.

560 Coursing brickwork

1. Gauge: Four brick courses including bed joints to 300 mm.

561 Coursing brickwork with existing

1. Gauge: Line up with existing brick courses.

580 Laying frogged bricks

1. Single frogged bricks: Frog uppermost.
2. Double frogged bricks: Larger frog uppermost.
3. Frog cavity: Fill with mortar.

585 Laying cellular bricks

1. Orientation: Cavities downward.

595 Lintels

1. Bearing: Ensure full length masonry units occur immediately under lintel ends.

610 Support of existing work

1. Joint above inserted lintel or masonry: Fully consolidated with semidry mortar to support existing structure.

620 Block bonding new walls to existing

1. Pocket requirements: Formed as follows:
 - 1.1. Width: Full thickness of new wall.
 - 1.2. Depth (minimum): 100 mm.
 - 1.3. Vertical spacing
 - 1.3.1. Brick to brick: 4 courses high at 8 course centres.
 - 1.3.2. Block to block: Every other course.
2. Pocket joints: Fully filled with mortar.

635 Jointing

1. Profile: Consistent in appearance.

645 Accessible joints not exposed to view

1. Jointing: Struck flush as work proceeds.

665 Pointing

1. Description: To brickwork above DPC
2. Joint preparation: Remove debris. Dampen surface.
3. Mortar: As section Z21.
 - 3.1. Standard: To BS EN 998-2
 - 3.2. Mix: To match existing
 - 3.3. Additional requirements: Coloured mortar to match existing
4. Profile: Bucket handle

671 Fire-stopping

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

690 Adverse weather

1. General: Do not use frozen materials or lay on frozen surfaces.
2. Air temperature requirements: Do not lay bricks/ blocks:
 - 2.1. In cement-gauged mortars when at or below 3°C and falling or unless it is at least 1°C and rising.
 - 2.2. In hydraulic lime:sand mortars when at or below 5°C and falling or below 3°C and rising, or as manufacturer's/ supplier's recommendations.
 - 2.3. In thin-layer mortars when outside the limits set by the mortar manufacturer.

3. Temperature of walling during curing: Above freezing until 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.

Additional requirements for facework

710 The term facework

1. Definition: Applicable in this specification to brick/ block walling finished fair.
 - 1.1. Painted facework: The only requirement to be waived is that relating to colour.

730 Brick/ Concrete block samples

1. General: Before placing orders with suppliers submit for approval of appearance labelled samples of the following: Bricks as in clause F10/230.
2. Selection of samples: Representative of the range in variation of appearance in a 1mx1m panel size

740 Finished masonry work reference panels

1. General: Before proceeding to construct the following walling types, construct panels as specified. Give notice when panels are dry.
2. Selection of masonry units: Randomly to BS EN 771-1
3. **Panel types**
 - 3.1. Walling type: F10/230
 - 3.1.1. Location: The panels should be located in good natural light and, if possible, so that they can be seen in conjunction with the finished work. A viewing distance of 3 m will normally be satisfactory.
 - 3.1.2. Size: 1.5 x 1.5 m
 - 3.1.3. Other requirements: None

745 Masonry sample panels

1. Sampling frequency: A panel for each type and delivery of masonry unit.
2. Selection of masonry units: Randomly to BS EN 771-1
3. **Panel types**
 - 3.1. Walling type: F10/230
 - 3.1.1. Location: The panels should be located in good natural light and, if possible, so that they can be seen in conjunction with the finished work. A viewing distance of 3 m will normally be satisfactory.
 - 3.1.2. Size: 1.5 x 1.5 m
 - 3.1.3. Other requirements: None

750 Colour consistency of masonry units

1. Colour range: Submit proposals of methods taken to ensure that units are of consistent and even appearance within deliveries.
2. Conformity: Check each delivery for consistency of appearance with previous deliveries and with approved reference panels; do not use if variation is excessive.
3. Facing bricks should be blended on site from a minimum of three packs to ensure an even distribution of colour and texture variation.
4. Finished work: Free from patches, horizontal stripes and racking back marks.

760 Appearance

1. Brick/ block selection: Do not use units with damaged faces or arrises.
2. Cut masonry units: Where cut faces or edges are exposed cut with table masonry saw.

3. Quality control: Lay masonry units to match relevant reference panels.
 - 3.1. Setting out: To produce satisfactory junctions and joints with built-in features and components.
 - 3.2. Coursing: Evenly spaced using gauge rods.
4. Lifts: Complete in one operation.
5. Methods of protecting facework: Submit proposals.

780 Ground level

1. Commencement of facework: Not less than 150 mm below finished level of adjoining ground or external works level.

790 Putlog scaffolding

1. Use: Not permitted in facework.

800 Toothed bond

1. New and existing facework in same plane: Bond together at every course to achieve continuity.

830 Cleanliness

1. Facework: Keep clean.
2. Mortar on facework: Allow to dry before removing with stiff bristled brush.
3. Removal of marks and stains: Rubbing not permitted.

Ω End of Section

F30

Accessories/ sundry items for brick/ block/ stone walling

Cavities

120 Cleanliness

1. Cavity base and faces, ties, insulation and exposed dpcs: Free from mortar and debris.

Reinforcing/ fixing accessories

241 Wall starters/ connectors

1. Standard: To [BS EN 845-1](#)
2. Manufacturer: Contractor's choice
 - 2.1. Product reference: Contractor's choice
3. Material/ finish: Galvanised Stainless Steel
4. Sizes: Submit proposals

260 Angle supports

1. Description: For brickwork above openings
2. Standard: To [BS EN 1090-1](#)
3. Manufacturer: Submit proposals
 - 3.1. Product reference: Submit proposals
4. Material: Austenitic stainless steel - material/ coating reference 1 to BS EN 845-1.
5. Size: Refer to drawing
6. Fixings (complete with washers and shims): Submit proposals

265 Support systems

1. Description: For brickwork above openings
2. Manufacturer: Submit proposals
 - 2.1. Product reference: Submit proposals
3. Material: Austenitic stainless steel - material/ coating reference 1 to BS EN 845-1.
4. Components, arrangement and dimensions: As shown on drawings.

Flexible damp-proof courses/ cavity trays

330 Damp-proof courses

1. Description: Polymeric
2. Manufacturer: IKO Group
 - 2.1. Product reference: Hyload

345 Site-formed flexible sheet cavity trays – plastics

1. Standard: to BS EN 14909 and BS 6515
2. Material: Polymeric
3. Manufacturer: IKO Group
 - 3.1. Product reference: Hyload

390 Junction cloaks/ stop ends for site-formed dpcs/ cavity trays

1. Three dimensional changes in shape: Form to provide a free draining and watertight installation. Seal laps.
2. Alternative use of preformed junction cloaks/ stop ends: Submit proposals.

Installation of dpcs/ cavity trays

415 Installation of horizontal dpcs

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 leaf unless otherwise specified. 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.

425 Installation of ground-level dpcs

1. Joint with damp-proof membrane: Continuous and effectively sealed.

435 Installation of stepped dpcs in external walls

1. External walls on sloping ground: Install dpcs not less than 150 mm above adjoining finished ground level.

445 Installation of sill dpcs

1. Form and placement: In one piece and turned up at back when sill is in contact with inner leaf.

455 Installation of coping/ capping dpcs

1. Placement: Bed in one operation to ensure maximum bond between masonry units, mortar and dpc.
2. Dpcs crossing cavity: Provide rigid support to prevent sagging.

465 Sealing of dpcs

1. Description: Parapet walls
2. Overlaps and junctions: Seal with Adhesive recommended by dpc manufacturer.

475 Installation of site-formed cavity trays

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.

485 Installation of cavity trays over openings and other cavity bridgings

1. Length: To extend not less than 150 mm beyond ends of lintels/ bridgings.

525 Dpc/ cavity tray leading edge in facework – set back

1. Treatment at face of masonry: Set back 5 mm from face of wall with recessed mortar joint to expose edge at the following locations: Generally.

560 Installation of vertical dpcs

1. Form: In one piece wherever possible.
 - 1.1. Joints: Upper part overlapping lower not less than 100 mm.

570 Installation of jamb dpcs at openings

1. Joint with cavity tray/ lintel at head: Full underlap.
2. Joint with sill/ horizontal dpc at base: Full overlap.

3. Projection into cavity: Not less than 25 mm.
4. Relationship with frame: In full contact.

580 Installation of jamb dpcs to built-in timber frames

1. Fixing: Securely fastened to back of frame.
 - 1.1. Fasteners: Galvanized clout nails or staples.

Joints

630 Unexposed contraction joints

1. Formation: Close butt as work proceeds.

650 Pointing in flashings

1. Joint preparation: Free of debris and lightly wetted.
2. Pointing mortar: As for adjacent walling.
3. Placement: Fill joint and finish flush.

660 Pinning up to soffits

1. Top joint of loadbearing walls: Fill and consolidate with mortar.

Proprietary sills/ lintels/ copings/ dressings

720 Sills

1. Standard: To [BS 5642-1](#).
2. Material: Precast concrete
3. Manufacturer: Contractor's Choice
 - 3.1. Product reference: Submit Proposals
4. Dimensions: As shown on drawings Refer to Internal Layout.
5. Finish: Smooth
6. Mortar for bedding/ jointing: Cement-gauged, as section Z21.
 - 6.1. Standard: To BS EN 998-2
 - 6.2. Mix: Mortar batched and mixed on site
 - 6.3. Additional requirements: None
7. Joints: Flush
8. Bedding one-piece sills: Leave bed joints open except under end bearings and masonry mullions. On completion, point to match adjacent brickwork.

Miscellaneous items - Not Used

Ω End of Section

F31

Precast concrete sills/ lintels/ copings/ features

Types of component - Not Used

General requirements

210 Moulds

1. Permissible fabrication and operating tolerances: Length 0 to +6 mm, other dimensions +/- 3 mm.

255 Quality assurance of reinforcement

1. Reinforcement: To BS 4449 and BS 4483. Obtain valid certificates of approval for product conformity issued by the UK Certification Authority for Reinforcing Steels (CARES).

260 Casting and curing

1. Placing of concrete: Thoroughly compact.
2. Protection against drying out: Methods and duration to BS EN 13369.
3. Immature components: Avoid movement, vibration, overloading, physical shock, rapid cooling and thermal shock.
4. Delivery to site: Minimum of 14 days after casting.

261 Cutting

1. Cutting of precast concrete components: Not permitted.

262 Records

1. Keep records for each type of component; maintain details including:
 - 1.1 - Unique identification number. Identification of the producer.
 - 1.2 - Identification of the place of production. Correlation with records of mixes, including batch numbers.
 - 1.3 - Date of each stage of manufacture. Dates and results of all tests, checks and inspections, including certification where relevant.
 - 1.4 - Dimensions related to specified levels of accuracy.
 - 1.5 - Specific location in the finished work.
 - 1.6 - Weight of the unit.
 - 1.7 - Damage and making good.
 - 1.8 - Any other pertinent data, e.g. if unit is a production control unit.
2. Availability of records for inspection: On request.

Fair-faced components

310 Control samples

1. Required samples after finalization of design, one each of the following components: Coping unit.
2. Coping unit
3. Approval of appearance: Obtain before manufacture of remaining units.
4. Identification and storage location: Clearly label and retain at factory for comparison with production units.

320 Details of samples

1. Submittals after approval of appearance and before manufacture of production units
 - 1.1. Aggregates: To be sourced from recycled content where possible. Confirm type, maximum size, grading and source prior to commencement.
2. Conformity of designed concrete: Evidence of compliance for compressive strength class and limiting values of composition.

330 Mixes for visible faced components

1. Constituent materials and mix design for each finish type: To remain constant.

2. Colour and appearance of each finish type: To remain constant.
3. Aggregates: To BS EN 12620.
 - 3.1. Origin: Single source for each finish type, having sufficient quantity for the whole contract.

341 Conditions for separate facing and backing mixes

1. Difference in cement content: Not greater than 80 kg/m³.
2. Thickness of facing mix: 10 mm greater than maximum aggregate size, minimum 25 mm.
3. Location of reinforcement: Minimum 20 mm away from the interface between mixes.
4. Compaction of facing and backing mix: Carry out to create monolithic construction.

350 Quality of finishes

1. Appearance standard: As established by samples.

365 Cover on exposed aggregate faces

1. Nominal cover: Exclusive of aggregate projection.

370 Cover on visible faces

1. Spacers: Not permitted.
2. Proposed method statement: Submit.

380 Consistency of production methods

1. Production methods: To remain consistent for each matching type of finish.
2. Finish appearance: To remain within the range of variation indicated by the samples.
3. Changes to production methods: If variations are proposed for components of the same finish, submit evidence that there will be no difference in appearance.

390 Inspection

1. Completed components: Give notice when ready to be inspected at factory.

Installation

430 Support of existing work over new lintels

1. Joint above lintels: Fully fill and compact with semi-dry mortar.

440 One-piece sills/ thresholds

1. Bed joints: Leave clear of mortar, except at end bearings and beneath masonry mullions.
 - 1.1. On completion: Point with mortar to match adjacent work.

Ω End of Section

G20

Carpentry/ timber-framing/ first fixing

General

100 Clauses

1. To be read in conjunction with preliminaries / general conditions.

101 Fabrication Tolerances

1. Comply with the tolerances given in NSTS Version 1.0 section 7.

102 Erection tolerances

1. Comply with the tolerances given in NSTS Version 1.0 section 8.

105 Timber procurement

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.
3. Chain of Custody Certification scheme: In accordance with UK Government Timber Procurement Policy (UKTPP), i.e. FSC, GiB or PEFC
 - 3.1. Other evidence: UK Government Timber Procurement Policy (UKTPP) Category B evidence

150 Strength grading of timber

1. Grader: A company currently registered under a third party quality assurance scheme operated by a certification body approved by the UK Timber Grading Committee.

160 Grading and marking of softwood

1. Timber of a target/ finished thickness less than 100 mm and not specified for wet exposure: Graded at an average moisture content not exceeding 20% with no reading being in excess of 24% and clearly marked as 'DG' (dry-graded).
2. Timber wet-graded and specified for installation at higher moisture contents: graded at an average moisture content above 20% and unmarked.
3. Structural timber members cut from large graded sections: Regraded to approval and marked accordingly.

Products

270 Ungraded softwood

1. Description: For internal non structural 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: Planed all round
4. Treatment
 - 4.1. Preservative treatment: Organic solvent impregnation to NBS section Z12 and Wood Protection Association Commodity Specification C8
 - 4.1.1. Design service life: 30 years

4.2. Flame-retardant treatment: As clause M60.172

310 Structural plywood

1. Description: In general
2. Standard: To BS EN 636.
3. Service class to BS EN 1995-1-1: Class 2
4. Use class to BS EN 335: Subclass 3.1
5. Load duration class to BS EN 12369-2: Permanent
6. Characteristic strength class to BS EN 12369-2: F25
7. Characteristic modulus class to BS EN 12369-2: E100
8. Appearance class to BS EN 635: IV
9. Bonding quality to BS EN 314-2: Class 1
10. Nominal thickness: As shown on drawings
11. Finish: Sanded
12. Treatment: None required
 - 12.1. Preservative treatment: Organic solvent impregnation to NBS section Z12 and Wood Protection Association Commodity Specification C11
 - 12.1.1. Design service life: 20 years
 - 12.2. Flame-retardant treatment: None required

311 Non-structural plywood

1. Description: Pattsressing
2. Standard: To an approved national standard.
3. Thickness: 18mm unless stated otherwise
4. Appearance class to BS EN 635: II
5. Use class to BS EN 335: Use Class 1
6. Bonding quality to BS EN 314-2: Class 2
7. Finish: Unsanded
8. Edges: Square
9. Treatment
 - 9.1. Preservative treatment: Organic solvent impregnation to NBS section Z12 and Wood Protection Association Commodity Specification C11
 - 9.1.1. Design service life: 30 years
 - 9.2. Flame-retardant treatment: Flame-retardant impregnation to NBS section Z12 and Wood Protection Association Commodity Specification FR2, Type INT1

Workmanship generally

401 Cross section dimensions of structural softwood and hardwood

1. Dimensions: Dimensions in this specification and shown on drawings are target sizes as defined in BS EN 336.
2. Tolerances: The tolerance indicators (T1 and T2) specify the maximum permitted deviations from target sizes as stated in BS EN 336, clause 4.3:
 - 2.1. Tolerance Class 1 (T1) for sawn surfaces.
 - 2.2. Tolerance Class 2 (T2) for further processed surfaces.

402 Cross section dimensions of non-structural softwood

1. Dimensions: Dimensions in this specification and shown on drawings are finished sizes.
2. Maximum permitted deviations from finished sizes: As stated in BS EN 1313-1, clause 6 for sawn sections.

403 Cross section dimensions of non-structural hardwood

1. Dimensions: Dimensions in this specification and shown on drawings are finished sizes.
2. Maximum permitted deviations from finished sizes: As stated in BS EN 1313-2:
 - 2.1. Clause 6 for sawn sections.
 - 2.2. Clause NA.3 for further processed sections.

420 Warping of timber

1. Bow, spring, twist and cup: Not greater than the limits set down in BS EN 14081-1 and BS 4978 for softwood, or BS EN 14081-1 and BS 5756 for hardwood

430 Selection and use of timber

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

435 Notches, holes and joints in timber

1. Notches and holes
 - 1.1. General: Avoid if possible.
 - 1.2. Sizes: Minimum needed to accommodate services.
 - 1.3. Position: Do not locate near knots or other defects.
 - 1.4. In same joist: Minimum of 100 mm apart horizontally.
 - 1.5. Notches in joists
 - 1.5.1. Position: Locate at top. Form by sawing down to a drilled hole.
 - 1.5.2. Depth (maximum): 0.15 x joist depth.
 - 1.5.3. Distance from supports: Between 0.1 and 0.2 x span.
 - 1.6. Holes in joists
 - 1.6.1. Position: Locate on neutral axis.
 - 1.6.2. Diameter (maximum): 0.25 x joist depth.
 - 1.6.3. Centres (minimum): Three x diameter of largest hole.
 - 1.6.4. Distance from supports: Between 0.25 and 0.4 of span.
 - 1.7. Notches in roof rafters, struts and truss members: Not permitted.
 - 1.8. Holes in struts and columns: Locate on neutral axis.
 - 1.8.1. Diameter (maximum): 0.25 x minimum width of member.
 - 1.8.2. Centres (minimum): Three x diameter of largest hole.
 - 1.8.3. Distance from ends: Between 0.25 and 0.4 of span.
2. Scarf joints, finger joints and splice plates: Do not use without approval.

440 Processing treated timber

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.

450 Moisture content

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%.

451 Moisture content testing

1. Procedure: When instructed, test timber sections with an approved electrical moisture meter.
2. Test sample: Test 5%, but not less than ten lengths of each cross section in the centre of the length.
3. Test results: 90% of values obtained to be within the specified range. Provide records of all tests.

510 Protection

1. Generally: Keep timber dry and do not overstress, distort or disfigure sections or components during transit, storage, lifting, erection or fixing.
2. Timber and components: Store under cover, clear of the ground and with good ventilation. Support on regularly spaced, level bearers on a dry, firm base. Open pile to ensure free movement of air through the stack.
3. Trussed rafters: Keep vertical during handling and storage.

520 Exposed end grain protection

1. Components: Seal exposed end grain of the following before delivery to site: Clear end grain sealer.
2. Sealer: Clear end grain sealer

530 Painted finishes

1. Structural timber to be painted: Primed as specified before delivery to site.

540 Clear finishes

1. Structural timber to be clear finished: Keep clean and apply first coat of specified finish before delivery to site.

550 Exposed timber

1. Planed structural timber exposed to view in completed work: Prevent damage to and marking of surfaces and arrises.

Jointing timber

570 Jointing/ fixing generally

1. Generally: Where not specified precisely, select methods of jointing and fixing and types, sizes and spacings of fasteners in compliance with section Z20.

630 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 in the completed building.
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 up to completion. Tighten as necessary.

670 Anti-corrosion finishes for fasteners

1. Galvanizing: To BS 7371-6, with internal threads tapped and lightly oiled following treatment.
2. Sherardizing: To BS 7371-8, Class 1.
3. Zinc plating: To BS EN ISO 4042 and passivated.

Erection and installation - Not Used

Ω End of Section

H20 Rigid sheet cladding

Clauses

Read in conjunction with Preliminaries and general conditions

Type(s) of sheet cladding

150 Sheet cladding (attached to metal support systems)

1. Description: Stainless Steel Cladding with Electrochemical Colouring
2. Manufacturer: POHL Metal Surfaces or equivalent approved
 - 2.1. Product reference: POHL Charcoal Matt
3. Backing wall: To be installed over ventilated rainscreen or other approved substrate systems. POHL Europanel cladding system or equal approved.
4. Board/ Sheet
 - 4.1. Material: Chemically Blackened Stainless Steel
 - 4.2. Thickness: 2mm
 - 4.3. Finish/ Colour: Charcoal Matt
 - 4.4. Fasteners: To manufacturers recommendations
 - 4.4.1. Number and location: To manufacturers recommendations
 - 4.5. Joints
 - 4.5.1. Type/ Treatment: To manufacturers recommendations
 - 4.5.2. Width: Close-buttet
5. Air gap: To manufacturers recommendations
6. Support system: Vertical and horizontal metal carrier rails
 - 6.1. Material: Aluminium
7. Breather membrane: Not required
8. Cavity barriers: Not required
9. Thermal insulation: Not required
10. Vapour control layer: Not required
11. Accessories: None
12. Samples:: Obtain 300x300 panel before proceeding

155 Sheet cladding (wrapped lining)

1. Description: Stainless Steel Wrap with Electrochemical Colouring
2. Manufacturer: POHL Metal Surfaces or equal approved
 - 2.1. Product reference: POHL Charcoal Matt
3. Backing wall: Plywood as clause G20.310
4. Board/ Sheet
 - 4.1. Material: Chemically Blackened Stainless Steel
 - 4.2. Thickness: 2mm
 - 4.3. Finish/ Colour: Charcoal Matt
 - 4.4. Fasteners: 5mm glavanised steel strap fixed back to structure
5. Accessories: Sealant to close gaps between finished surface and adjacent materials
6. Other requirements: Obtain 300x300 sample panel before proceeding

General requirements

230 Timber battens

1. General: Regularized softwood free from decay, insect attack and with no knots wider than half the width of the section.
2. Preservative treatment: As section Z12 and [Wood Protection Association \(WPA\)](#) guidance.
 - 2.1. Type: Organic solvent
3. Moisture content at time of fixing (maximum): 19%.

240 Treated timber

1. Exposed cut and drilled surfaces: Treat with two flood coats of a solution recommended for the purpose by main treatment solution manufacturer.

260 Fixing sheets

1. General: Secure to supports without producing distortion.
2. Fasteners: Evenly spaced in straight lines, in pairs across joints and sufficient distance from edge of sheet to prevent damage.

270 Cover strips

1. General: Form straight runs in single lengths wherever possible.
2. Location and method of forming joints: Submit proposals where not detailed.

Ω End of Section

H21 Timber weatherboarding

To be read with preliminaries/ general conditions.

001 General Note

1. The intent of any new external weatherboarding is that it matches the existing weatherboarding. Discrepancies between the proposed and existing condition should be highlighted to the Architect prior to commencement.

110 Vertical timber weatherboarding

1. Description: On facade to match existing
2. Fire performance
 - 2.1. Breather membrane: Refer clause H21-130
3. Sheathing: 18mm Plywood
4. Thermal insulation: As clause P10/190
5. Breather membrane: As clause 130
6. Accessories: Insect mesh to close cavity
7. Counterbattens
 - 7.1. Size: Nom 44 x 110mm typically finished size regularised, thickness adjusted on site or packed to suit façade outer finish set out.
 - 7.2. Centres: 450mm
 - 7.3. Fixing: Stainless steel fixings to Architect's approval.
8. Battens
 - 8.1. Size: 44 x 44 finished size regularised with sloping top edge back into cavity
 - 8.2. Centres: 450mm
 - 8.3. Fixing to each counterbatten: Stainless steel fixings to Architect's approval
9. Boarding
 - 9.1. Standard: To BS EN 14915.
 - 9.2. Quality of timber (exposed surfaces): To BS 1186-3, Class 3
 - 9.3. Species: To match existing
 - 9.4. Profile: Square Edged
 - 9.5. Finished face dimension (overall width): To match existing
 - 9.6. Finished thickness: 22mm
 - 9.7. Moisture content at time of fixing: 13-19%
 - 9.8. Treatment: As existing
 - 9.8.1. Standard: To NBS section Z12 and Wood Protection Association Commodity Specification C6.
 - 9.8.2. Type: Organic solvent (coated softwood)
 - 9.9. Service life: 30 years.
 - 9.10. Method of fixing to each support: 60mm long stainless steel lost-head nail, 2no at 80mm centres about the centre line of the board.
10. Other requirements: Boards to be supplied in full lengths ie, + 5m long with fully glued finger jointing. Front face of boards to be supplied with 'sawn face'. Alignment of finger joints between to be to agreed set out on façade once boards have been delivered and inspected by Architect. Contractor to make allowance of 1 week for inspection and set out directions between delivery and installation.

112 Horizontal timber weatherboarding

1. Description: To match existing
2. Fire performance

- 2.1. Breather membrane: Refer Clause H21 - 130.
 3. Sheathing: WBP Plywood Sheathing on steel and SW frame typically.
 4. Thermal insulation: As clause P10/190
 5. Breather membrane: As clause 130
 6. Accessories: Insect mesh to close cavity
 7. Battens
 - 7.1. Size: Nom 44 x 44mm finished size regularised, thickness adjusted on site or packed to suit façade outer finish set out
 - 7.2. Centres: 450mm
 - 7.3. Fixing: Stainless steel fixings to Architect's approval
 8. Boarding
 - 8.1. Standard: To BS EN 14915.
 - 8.2. Quality of timber (exposed surfaces): To BS 1186-3, Class 3
 - 8.3. Species: To match existing
 - 8.4. Profile: Top and bottom edges chamfered as detailed.
 - 8.5. Finished face dimension (overall width): Nom 137mm with chamfers. Board planed down from 150mm width.
 - 8.6. Finished thickness: 22 mm
 - 8.7. Moisture content at time of fixing: 13-19 %
 - 8.8. Treatment: As existing
 - 8.8.1. Standard: To NBS section Z12 and Wood Protection Association Commodity Specification C6.
 - 8.8.2. Type: EXT
 - 8.9. Service life: 30 years.
 - 8.10. Method of fixing to each support: 60mm long stainless steel lost-head nail, 2no at 80mm centres about the centre line of the board.
 9. Other requirements: Boards to be supplied in full lengths ie, + 10.2m long (where forming the main fascia and soffit) with fully glued finger jointing. Front face of boards to be supplied with 'sawn face'. Alignment of finger joints between to be to agreed set out on façade once boards have been delivered and inspected by Architect. Contractor to make allowance of 1 week for inspection and set out directions between delivery and installation.
- 120 Control sample
1. General: Complete an area of boarding in an approved location and obtain approval of appearance before proceeding.
- 130 Breather membrane
1. Standard: To BS EN 13859-2
 2. Material: Reinforced polyethylene
 3. Manufacturer: DuPont Tyvek
 - 3.1. Product reference: Housewrap
 4. Installation: Fix carefully and neatly to provide a complete barrier to water, snow and wind blown dust. Extend membrane below lowest timber member and into reveals of openings
 - 4.1. Laps: Horizontal: 100 mm. Vertical: 150 mm and staggered, to shed water away from substrate
 - 4.2. Fasteners: Galvanized, sherardized or stainless steel large head nails or stainless steel staples
- 135 Battens/ Counterbattens
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: Organic solvent

- 2.1. Standard: To NBS section Z12 and Wood Protection Association Commodity Specification C6.
- 2.2. Type: Organic solvent
3. Moisture content: Not exceeding 20% at time of fixing.

140 Fixing battens/ counterbattens to masonry

1. Setting out: In straight, vertical lines.
2. Batten/ Counterbatten length (minimum): 1200 mm.
3. Installation: Fastener heads to finish flush with or slightly below batten face.

141 Fixing battens/ counterbattens to framing/ sheathing

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.

142 Fixing battens to counterbattens

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.

145 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.

150 Surface treatment

1. Finishing system: Before fixing boards, apply first coat of specified system to all surfaces. Apply liberally to end grain.

160 Fixing boarding

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.

220 Fire performance of cladding

1. Reaction to fire

- 1.1. External surfaces: To BS EN 13501-1, Class B-s3, d2 or better
- 1.2. Support system: To BS EN 13501-1, Class B-s3, d2 or better
- 1.3. Sheathing: To BS EN 13501-1, Class B-s3, d2 or better
- 1.4. Insulation: To BS EN 13501-1, Class B-s3, d2 or better
- 1.5. Internal (cavity) surfaces: To BS EN 13501-1, Class B-s3, d2 or better
- 1.6. Breather membrane: To BS EN 13501-1, Class B-s3, d0

2. Fire resistance

- 2.1. Cavity fire barriers: Not required
3. Verification of fire performance: In accordance with BRE 135 and BS 8414-2

Ω End of Section

H71

Lead sheet fully supported roof and wall coverings/ flashings

Types of leadwork

420 Cover flashings

1. Description: To clerestory lantern
2. Sheet underlay: Building paper to BS 1521, Class A1
3. Lead sheet
 - 3.1. Type of lead: Rolled to BS EN 12588
 - 3.2. Thickness: 1.75 or 1.80 mm (Code 4)
4. Dimensions
 - 4.1. Lengths: not more than: 1500.
 - 4.2. End-to-end joints: Laps of not less than 100 mm.
 - 4.3. Cover: Overlap to upstand of not less than 75 mm.
5. Fixing: Lead wedges into bed joint, clips to lead upstand at laps and 500 mm centres

General requirements/ preparatory work

510 Workmanship generally

1. Standard: In accordance with BS EN 14783, BS EN 12588, BS 6915 and the latest edition of Rolled lead sheet - the complete manual published by the Lead Sheet Training Academy (LSTA).
2. Fabrication and fixing: To provide a secure, free-draining and completely weathertight installation.
3. Operatives: Trained in the application of lead coverings/ flashings. Submit records of experience on request.
4. Preforming: Measure, mark, cut and form lead prior to assembly, wherever possible.
5. Marking out: With pencil, chalk or crayon. Do not use scribes or other sharp instruments without approval.
6. Bossing and forming: Straight and regular bends, leaving sheets free from ripples, kinks, buckling and cracks.
7. Solder: Use only where specified.
8. Sharp metal edges: Fold under or remove as work proceeds.
9. Finished work: Fully supported, adequately fixed to resist wind uplift but also able to accommodate thermal movement without distortion or stress.
10. Protection: Prevent staining, discolouration and damage by subsequent works.

515 Lead welding

1. In situ lead welding: Not permitted.

520 Lead sheet

1. Production method: Rolled, to BS EN 12588; or Machine-cast and British Board of Agrément (BBA)-certified; or Sand-cast, from lead that is free from bitumen, solder, other impurities, inclusions, laminations, cracks, air, pinholes and blowholes. To code thicknesses but with a tolerance (by weight) of +/-10%
2. Identification: Labelled to show compliance with the harmonized standard (hEN) BS EN 14783 where appropriate, and detail of the thickness/ code, weight and type.
3. Manufacturer: Contractor's choice
 - 3.1. Product reference: Contractor's choice
4. Verification: To demonstrate compliance with the product manufacturing standard,, performance standard, test standard, characteristics requirements and manufacturer set out in clause 520 'Lead sheet'.

- 4.1. Submittals: Manufacturer's product technical data sheet, Third-party product certificate (BBA or equivalent), Clerk of works inspection reports and photographic records for the product as supplied/ as installed.
- 4.2. Timing: Before commencement of installation.

610 Suitability of substrates

1. Condition: Dry and free of dust, debris, grease and other deleterious matter.

620 Preparation of existing timber substrates

1. Remedial work: Adjust boards to level and securely fix. Punch in protruding fasteners, and plane or sand them to achieve an even surface.
2. Defective boards: Give notice.
3. Moisture content: Not more than 22% at time of covering. Give notice if greater than 16%.

625 Existing membrane

1. Defective, unsuitable or missing membrane: Give notice.

627 Existing AVCL

1. Defective, unsuitable or missing AVCL: Give notice.

640 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 the 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.

Fixing lead

705 Head fixing lead sheet

1. Top edge: Secured with two rows of fixings, 25 mm and 50 mm from the top edge of the sheet, at 75 mm centres in each row, evenly spaced and staggered.
2. Sheets less than 500 mm deep: May be secured with one row of fixings, 25 mm from the top edge of the sheet, and evenly spaced at 50 mm centres.

710 Fixings

1. Nails to timber substrates: Copper clout nails to BS 1202-2, or stainless steel (austenitic) clout nails to BS 1202-1.
 - 1.1. Shank type: Annular ringed, helical threaded or serrated.
 - 1.2. Shank diameter: Not less than 2.65 mm for light duty, or 3.35 mm for heavy duty.
 - 1.3. Length: Not less than 20 mm, or equal to substrate thickness.
2. Screws to concrete or masonry substrates: Brass or stainless steel.
 - 2.1. Diameter: Not less than 3.35 mm.
 - 2.2. Length: Not less than 19 mm.
 - 2.3. Washers and plastic plugs: Compatible with screws and lead.
3. Screws to composite metal decks: Self-tapping, as recommended by the deck and lead manufacturer/ supplier for clips.

770 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: Submit proposals.
 - 3.1. Application: As section Z22.

780 Wedge fixing into damp-proof course joints

1. Joint: Rake/ cut out under damp-proof course to a depth of not less than 25 mm.
2. Lead: Dress lead into joint.
 - 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: Contractor's choice
 - 3.1. Application: As section Z22.

Jointing lead

810 Forming details

1. Method: Bossing or lead welding, except where bossing is specifically required.
2. Lead-welded seams: Neatly and consistently formed.
 - 2.1. Seams: Do not undercut or reduce sheet thickness.
 - 2.2. Filler strips: Of the same composition as the sheets being joined.
 - 2.3. Butt joints: Formed to a thickness of one third more than the sheets being joined.
 - 2.4. Lap joints: Formed with 25 mm laps and two loadings to the edge of the overlap.
3. Bossing: Carried out without thinning, cutting or otherwise splitting the lead sheet.
 - 3.1. Details where bossing must be used: Not applicable.

Ω End of Section

H72

Aluminium strip/ sheet fully supported roof and wall coverings/ flashings

Types of aluminium work

420 Cover flashings

1. Description: Generally
2. Aluminium: Coated sheet/ strip, as clause 525
 - 2.1. Alloy designation: EN AW-1050A
 - 2.2. Temper: O
 - 2.3. Finish: Polyvinylidene fluoride (PVDF) coating
 - 2.4. Thickness: 0.8 mm
3. Dimensions
 - 3.1. Lengths: Not more than 2 m, with end to end joints lapped not less than 100 mm.
 - 3.2. Cover to roofing upstand: Not less than 75 mm, with bottom edge welted 15 mm.
4. Fixing: Aluminium wedges into bed joint, clips to bottom edge, at laps and 450 mm centres

General requirements/ preparatory work

510 Workmanship generally

1. Standard: Generally to BS EN 14783, BS EN 507, CP 143-15 and latest edition of the FTMRC publication 'UK guide to good practice in fully supported metal roofing and cladding'.
2. Fabrication and fixing: To provide a secure, free draining and completely weathertight installation.
3. Operatives: Trained in the application of aluminium coverings/ flashings. Submit records of experience on request.
4. Measuring, marking, cutting and forming: Prior to assembly wherever possible.
5. Marking out: With pencil, chalk or crayon. Do not use scribes or other sharp instruments without approval.
6. Folding: With mechanical or manual presses to give straight, regular and tight bends, leaving panels free from ripples, kinks, buckling and cracks. Use hand tools only for folding details that cannot be pressed.
7. Surface protection: Fully coat surfaces to be embedded in concrete or mortar with high build bitumen-based paint, after folding.
8. Sharp metal edges: Fold under or remove as work proceeds.
9. Joints: Do not use sealants to attain waterproofing.
10. Finished aluminium work: Fully supported, adequately fixed to resist wind uplift and able to accommodate thermal movement without distortion or stress.
 - 10.1. Protection: Prevent staining, discolouration and damage by subsequent works.

515 Welding

1. In situ welding: Not permitted.

520 Aluminium strip/ sheet

1. Standard: To BS EN 14783
 - 1.1. Stamped or labelled with alloy designation, temper, finish and thickness.
2. Manufacturer: Contractors choice
 - 2.1. Product reference: Contractors choice

525 Coated aluminium strip/ sheet

1. Standard: To BS EN 14783 and BS EN 1396
2. Manufacturer: Contractors choice
 - 2.1. Product reference: Contractors choice

535 Integrity of aluminium

1. Requirement: Design coverings/ flashings and methods of attachment to prevent loss of weathertightness and permanent deformation due to wind pressure or suction.
2. Design: Complete in accordance with the designated code of practice to satisfy specified performance criteria.

555 Layout

1. Setting out of longitudinal and cross joints: Submit proposals.

560 Control samples

1. General: Complete areas of finished work and obtain approval of appearance before proceeding:
2. Size: Contractor's choice
3. Location: Contractor's choice

610 Suitability of substrates

1. Condition: Dry and free of dust, debris, grease and other deleterious matter.

620 Preparation of existing timber substrates

1. Remedial work: Adjust boards to level and securely fix. Punch in any protruding fasteners and plane or sand to achieve an even surface.
2. Defective boards: Give notice.
3. Moisture content: Not more than 22% at time of covering.

625 Existing membrane

1. Defective, unsuitable or missing membrane: Give notice.

627 Existing AVCL

1. Defective, unsuitable or missing AVCL: Give notice.

630 Plywood overlay

1. Standard: Manufactured to an approved national standard and to BS EN 636, section 8 (plywood for use in humid conditions).
 - 1.1. Sheet size: 2400 or 1200 x 1200 mm and 6 mm thick.
2. Laying: Parallel to perimeter edges with cross joints staggered and a 0.5 to 1 mm gap between sheets.
3. Fixing: With 25 mm annular ringed shank aluminium or galvanized steel nails, at 300 mm grid centres over the area of each sheet and at 150 mm centres along edges, set in 10 mm from perimeter edges and in pairs across joints.
 - 3.1. Nail heads: Set flush with or just below surface.

640 Timber for use with aluminium work

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

650 Laying sheet underlay

1. Handling: Prevent tears and punctures.
2. Laying: Butt jointed onto a dry substrate.
 - 2.1. Fixing edges: With aluminium or galvanized steel staples or 20 x 3 mm extra large head clout nails.

- 2.2. Do not lay over eaves and drip/ step aluminium underlaps.
3. Ventilation paths: Do not obstruct.
4. Protection: Keep dry and cover with aluminium at the earliest opportunity.

Fixing - Not Used

Jointing

810 Forming details

1. Folds and welts: Form without thinning or splitting the strip/ sheet.
2. Thermal movement: Form details with appropriate allowance for movement, without impairment of security at full expansion or contraction.

Ω End of Section

H74

Zinc strip/ sheet fully supported roof and wall coverings/ flashings

Types of zinc work

110 Zinc sheet fully supported roof covering

1. Description: To sentry
2. Covering system: Preformed standing seam sheet
3. Insurance and warranties: As clause 205
4. Air and vapour control layer: Plastic sheet to BS EN 13984
5. Sarking or roof boarding: As G20/310
6. Membrane: Vapour-permeable sheet, in accordance with BS EN 13859-1
7. Insulation: As P10/190
8. Substrate: As G20/310
 - 8.1. Preparation: Lay plywood, as clause 630
9. Sheet underlay: Vapour-permeable underlay, in accordance with BS EN 13859-1
10. Zinc
 - 10.1. Type: Standard temper alloy, as clause 520
11. Thickness: 0.7 mm
 - 11.1. Finish: Natural
12. Joints in direction of fall: Standing seams
 - 12.1. Spacing: Determined by contractor
13. Cross joints: Not permitted
 - 13.1. Spacing: Determined by contractor
14. Eaves detail: Standing seam termination
15. Ridge/ hip detail: Standing seam
16. Verge detail: Standing seam termination
17. Accessories: None
18. Other requirements: None

205 Insurance and warranties

1. Requirements and testing: To LPS 1582
2. Additional requirements: To NHBC Standards

206 Fire performance of insulation

1. Reaction to fire: To BS EN 13501-1, Class A2-s1, d0

320 Ridge/ hip standing seams

1. Type: Double-lock welt standing seam not less than 40 mm high.
2. Abutting roof standing seams: Fold down with allowance for lateral thermal movement and turn up into Ridge/ hip double-lock welt.

340 Standing seam eaves with closed ends

1. Zinc underlap: Vertical cladding
 - 1.1. Cover to roof slope: Not less than 100 mm with anticapillary welt at top edge.
 - 1.2. Projection: 25 mm for forming into drip welt.
 - 1.3. Fixing: To roof slope at 100 mm centres avoiding through fixings at standing seam positions.
2. Standing seams: Cut and fold ends square .
3. Roof covering: Fold around underlap projection and single welt to form a drip.

General requirements/ preparatory work

510 Workmanship generally

1. Standard: Generally to CP 143-5 and Federation of Traditional Metal Roofing Contractors' 'UK Guide to Good practice in fully supported metal roofing and cladding'.
2. Fabrication and fixing: To provide a secure, free draining and completely weathertight installation.
3. Operatives: Trained in the application of zinc coverings/ flashings. Submit records of experience on request.
4. Preforming: Measure, mark, cut and form zinc prior to assembly wherever possible.
5. Metal temperature: Do not form zinc when the metal temperature is below the minimum recommended for working by the manufacturer.
6. Marking out: With pencil, chalk or crayon. Do not use scribes or other sharp instruments without approval.
7. Folding: With mechanical or manual presses to give straight, regular and tight bends, leaving panels free from ripples, kinks, buckling and cracks. Use hand tools only for folding details that cannot be pressed.
8. Sharp metal edges: Fold under or remove as work proceeds.
9. Sealants: Do not use in joints to attain waterproofing.
10. Solder: Use only where specified.
11. Finished zinc work: Fully supported, adequately fixed to resist wind uplift and able to accommodate thermal movement without distortion or stress.
 - 11.1. Protection: Prevent staining, discolouration and damage by subsequent works.

515 Soldering and naked flame preheating

1. In situ soldering and naked flame preheating: Not permitted.

516 Soldering and naked flame preheating

1. In situ soldering and naked flame preheating: Permitted, subject to completion of a 'hot work permit' form and compliance with its requirements.

520 Zinc strip/ sheet – standard temper alloy

1. Type: Zinc-titanium-copper, standard temper alloy
2. Standard: To BS EN 14783
 - 2.1. Stamped or labelled with type, finish and thickness.
3. Manufacturer: Submit proposals
 - 3.1. Product reference: Submit proposals

530 Integrity of zinc

1. Requirement: Design coverings/ flashings and methods of attachment to prevent loss of weathertightness and permanent deformation due to wind pressure or suction.
2. [Structural requirements](#)

535 Integrity of zinc

1. Requirement: Design coverings/ flashings and methods of attachment to prevent loss of weathertightness and permanent deformation due to wind pressure or suction.
2. [Structural requirements](#)
 - 2.1. Generally: As section B50.
 - 2.2. Design: Complete in accordance with the designated code of practice to satisfy specified performance criteria.

555 Layout

1. Setting out of joints in direction of fall and cross joints: Submit proposals.

560 Control samples

1. General: Complete areas of finished work and obtain approval of appearance before proceeding:
2. Size: Submit proposals
3. Location: Submit proposals

610 Suitability of substrates

1. Condition: Dry and free of dust, debris, grease and other deleterious matter.

620 Preparation of existing timber substrates

1. Remedial work: Adjust boards to level and securely fix. Punch in any protruding fasteners and plane or sand to achieve an even surface.
2. Defective boards: Give notice.
3. Moisture content: Not more than 22% at time of covering.

630 Plywood overlay

1. Standard: Manufactured to an approved national standard and to BS EN 636, section 8 (plywood for use in humid conditions).
 - 1.1. Sheet size: 2400 or 1200 x 1200 mm and 6 mm thick.
2. Laying: Parallel to perimeter edges with cross joints staggered and a 0.5 to 1 mm gap between sheets.
3. Fixing: With 25 mm annular ringed shank galvanized, sherardized or stainless steel nails, at 300 mm grid centres over the area of each sheet and at 150 mm centres along edges, set in 10 mm from perimeter edges and in pairs across joints.
 - 3.1. Nail heads: Set flush with or just below surface.

640 Timber for use with zinc work

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

650 Laying sheet underlay – fibrous or plastics

1. Handling: Prevent tears and punctures.
2. Laying: Butt jointed onto a dry substrate.
 - 2.1. Fixing edges: With galvanized, sherardized or stainless steel staples or 20 x 3 mm extra large head clout nails.
 - 2.2. Do not lay over eaves and drip/ step zinc underlaps.
3. Protection: Keep dry and cover with zinc at the earliest opportunity.

Fixing zinc

710 Fixings for clips

1. Nails to timber substrates: Galvanized or sherardized steel to BS 1202-1 for zinc clips. Stainless steel (austenitic) for stainless steel clips.
 - 1.1. Shank type: Annular ringed, helical threaded, or serrated.
 - 1.2. Shank diameter: Not less than 2.65 mm.
 - 1.3. Head: Flat.
 - 1.4. Length: Not less than 25 mm or equal to substrate thickness.
2. Screws to concrete/ masonry substrates: Sherardized or zinc plated steel to BS EN 14592 for zinc clips. Stainless steel (austenitic) to BS EN 14592 for stainless steel clips.

- 2.1. Diameter: Not less than 3.35 mm.
- 2.2. Length: Not less than 25 mm.
- 2.3. Washers and plastics plugs: Compatible with screws.
3. Screws to composite metal decks: Self tapping as recommended by the deck and zinc manufacturer for zinc or stainless steel clips.

715 Zinc clips

1. General: Cut from strip/ sheet with clip length in direction of rolling.

720 Standing seam fixed clips

1. Zinc clips: Cut from same thickness of metal as that being secured.
2. Dimensions
 - 2.1. Width: Not less than 30 mm.
 - 2.2. Base length: Not less than 20 mm.
 - 2.3. Upstand: To suit standing seam profile.
3. Stainless steel (austenitic) clips: As supplied or recommended by the zinc manufacturer to suit project conditions.
4. Fixing: Secure each clip to substrate with two fixings.

725 Standing seam sliding clips

1. Zinc clips: Cut from same thickness of metal as that being secured.
 - 1.1. Fixed component dimensions
 - 1.1.1. Width: Not less than 90 mm.
 - 1.1.2. Base length: Not less than 20 mm.
 - 1.1.3. Upstand: 20 mm, with slot for locating sliding component.
 - 1.2. Sliding component dimensions
 - 1.2.1. Width: Not less than 30 mm.
 - 1.2.2. Upstand: To suit standing seam profile.
2. Stainless steel (austenitic) clips: As supplied or recommended by the zinc manufacturer to suit project conditions.
3. Fixing: Secure each clip to substrate with three fixings.

Jointing zinc

810 Forming details

1. Folds and welts: Form without thinning, or splitting the strip/ sheet.
2. Thermal movement: Form details with appropriate allowance for movement, without impairment of security at full expansion or contraction.

815 Free edge details

1. Visible feature edges: Finish with 15 mm welts .

825 Soldering details

1. Solder (not less than 40% tin content) and flux: As recommended by the zinc manufacturer.
2. Flux residues: Wash away as work proceeds.
3. Seams: Neat and consistent with an overlap of clean zinc as recommended for the particular joint by the zinc manufacturer.

830 Standing seam joints

1. Joint allowances: 45 mm overlap, 35 mm underlap and 5 mm gap for thermal movement. Preformed interlocking profiles for overlap and underlap are permitted.
2. Clip positions

- 2.1. Fixed clips: Refer to drawings
- 2.2. Sliding clips: Refer to drawings
3. Forming: Double welt overlap and clips around underlap to form a standing seam 25 mm high of consistent cross section.

860 Drip/ Step joints

1. Strip/ Sheet from below step: Fold up full height of upstand and fix to top edge.
2. Form zinc underlap/ continuous clip
 - 2.1. Cover to roof slope: Not less than 100 mm with anticapillary welt at top edge.
 - 2.2. Projection: 25 mm for forming into drip welt.
 - 2.3. Downstand: Not less than 40 mm with welt at bottom edge.
 - 2.4. Fixing: To roof slope at 100 mm centres, avoiding through fixings at joints in direction of fall positions.
3. Strip/ Sheet from above step: Fold around underlap projection and single welt to form a drip.

880 Single-lock welt joints

1. Joint allowance: 100 mm overlap and 50 mm underlap.
2. Underlap: Welt and secure with clips two per bay.
3. Overlap: Welt around underlap and clips and dress down.

885 Single-lock welt with check welt joints

1. Underlap: Fold 30 mm anticapillary welt at top edge and secure with clips, two per bay.
2. Overlap: Welt bottom edge of overlap 30 mm and lay 250 mm over underlap.
 - 2.1. Fixing: Secure welt with continuous clip, 60 mm wide, soldered to underlap.

890 Double-lock welt joints

1. Joint allowance: 90 mm overlap, 60 mm underlap.
2. Underlap: Welt and secure with clips two per bay.
3. Overlap: Double welt around underlap and clips and dress down.

Ω End of Section

J10 **Cementitious mortar tanking/ damp-proofing**

Types of tanking/ damp-proofing

110 Proprietary mortar

1. Description: Waterproof Tanking Membrane
2. Substrate: Concrete
3. Manufacturer: Newton Waterproofing Systems
 - 3.1. Product reference: Newton HydroCoat 107 Elastic 2K - Cementitious Waterproofing Membrane
4. Coats (excluding dubbing out)
 - 4.1. Number (excluding keying mixes): As coating manufacturer's recommendations
 - 4.2. Thickness: As coating manufacturer's recommendations
5. Finish: Smooth, matt grey coating.
6. Other requirements: Movement joints

Materials and making of mortar

320 Admixtures for site-batched and mixed mortar

1. Admixtures other than proprietary waterproofing admixture: Do not use.

330 Movement joint system

1. Manufacturer: Submit proposals
 - 1.1. Product reference: Submit proposals
 - 1.2. Application: As [Section Z22](#).

340 Sealants

1. Manufacturer: Submit proposals
 - 1.1. Product reference: Submit proposals
2. Colour: To match surface finish
 - 2.1. Application: As [Section Z22](#).

350 Mixing

1. Site-batched constituents
 - 1.1. Batching: By volume. Use clean and accurate gauge boxes or buckets.
 - 1.2. Mix proportions: Adjust to suit moisture content of sand.
2. Factory-made pre-blended constituents: Mix using methods recommended by the coating manufacturer.
3. Mixes: Of uniform consistency and free from lumps.
 - 3.1. Free-fall drum mixers: Do not use.

360 Cold weather

1. General: Do not use frozen materials or apply coatings to frozen or frost-bound substrates.
2. Air temperature requirements: Do not apply coatings when at or below 5°C and falling, or below 3°C and rising.
3. Temperature of work: Maintain above 5°C until coatings have hardened sufficiently.

Preparing substrates

410 Suitability of substrates

1. Preparation generally: To tanking mortar/ admixture manufacturer's recommendations.

2. Stability and soundness: Free from movement, and loose or weak areas that will cause failure of tanking.
3. Key: To achieve firm adhesion of tanking.
4. Contamination: Free from previous coatings and contaminants including dirt, dust, efflorescence, mould, oil, paint and plaster.
5. Cracks, porous patches and other defective areas subject to water pressure and liable to admit water: Control and seal using waterproof mortar recommended by the tanking mortar manufacturer.
6. Holes/ recesses for fixings (where permitted): Prepared to receive fasteners.
7. Openings and chases: Prepared, including sleeves for pipe penetrations and chases to receive waterproofing compounds/ sealants.

420 Preparation of mortar joints and cavities

1. Mortar joints: Rake out to a depth of 12 mm (minimum).
 - 1.1. Debris: Remove and flush out with water.
 - 1.2. Fill: Repoint with waterproof mortar to the tanking mortar manufacturer's recommendations.
2. Blow holes, cavities, cracks, etc: Remove loose material and fill flush using waterproof mortar recommended by the tanking mortar manufacturer.

430 Tanking integrity

1. Penetrations for fixings, services, etc: Permitted for bolt fixings using coating manufacturer's recommended methods

Execution

510 Application generally

1. Application methods and coating sequence: As recommended by the tanking mortar/ admixture manufacturer to achieve a water-resistant structure.

520 Joints/ junctions and penetrations

1. Abutments, joints and active cracks: Sealed and watertight.
 - 1.1. Movement joints: Centred over joints in substrate and extended through waterproof coating and finishes.
 - 1.2. Daywork joints in successive coatings: Staggered and lapped.
 - 1.3. Angled joints: Not permitted.
2. Penetrations: Watertight.

530 Appearance of tanking

1. Render/ screed coatings: Even and consistent. Free from rippling, hollows, ridges, cracks and crazing.
 - 1.1. Accuracy: A true plane, to correct line and level. Walls and reveals plumb and square with neat arrises
2. Thin slurry coatings: Consistent and free from hollows, cracks and crazing. Suitable to receive specified finish.

540 Flatness/ surface regularity of tanking screeds

1. Measurement method: From the underside of a 3 m straight edge (between points of contact) placed anywhere on surface and using a slip gauge to [BS 8204-1](#) or [BS 8204-2](#)(or equivalent).
2. Deviation of surface: Sudden irregularities not permitted.
 - 2.1. Maximum permissible deviation: 3 mm

550 Curing and drying

1. General: Prevent premature setting, uneven drying and cracking of each coat.
2. Curing coatings: Prevent evaporation from surface.

2.1. Curing period (minimum): As the tanking mortar manufacturer's recommendations

560 Protection

1. Mechanical damage: Prevent impact and abrasion.
2. Application of protective coatings/ linings: After completion of curing.

Ω End of Section

J31 **Liquid-applied waterproof roof coatings**

Types of coating

120 Warm deck roof coating

1. Description: Refurbishment of Reveller lower roof
2. Substrate: Built-up bitumen membrane-covered plywood deck
 - 2.1. Preparation: Primer, as [clause 310](#)
3. Air and vapour control layer: As existing
4. Insulation: As existing
5. Overlay to insulation: Not required
6. Carrier membrane: Not required
7. Waterproof coating: Polyurethane 2-coats
8. Surface protection: Decorative shell topping
9. Accessories: Premium reinforcing fabric between coats.

Performance

202 Contractor's design of roofing

1. Design responsibility: Determine methods in attaching roofing
2. Structural and fire requirements
 - 2.1. Generally: As [section B50](#) and [section B05](#).
 - 2.2. Modifications: None
 - 2.3. Design: Complete the design in accordance with the designated code of practice to satisfy specified performance criteria.
3. Functional requirements
 - 3.1. Performance: As specified in this section
4. Additional requirements: None
5. Design and production information: As Preliminaries section A31
6. Timing of submissions: As Preliminaries section A31

205 Completion of roofing design

1. Requirement: Complete the detailed design to satisfy specified performance criteria and coordinate with the detailed design of related and adjacent work.
2. Structural requirements: As [section B50](#).
3. Additional requirements: Responsibility and coordination at design interfaces.
4. Design and production information: As Preliminaries section A31
5. Timing of submissions: As Preliminaries section A31

Products

310 Primer

1. Manufacturer: Submit proposals. BS EN ISO 9001-certified.
 - 1.1. Product reference: Submit proposals
2. Type: Water-based

355 Perimeter trims

1. Manufacturer: Submit proposals
 - 1.1. Product reference: Submit proposals
2. Type: Aluminum

3. Colour: To match existing

365 Stone ballast

1. Supplier: Submit proposals
 - 1.1. Product reference: Submit proposals
2. Type: To match existing
3. Size: To match existing
4. Colour: To match existing

387 Filter layer

1. Manufacturer: Submit proposals
 - 1.1. Product reference: Submit proposals
2. Type: Thermally strengthened polypropylene & polyethylene filter sheet

390 Water flow-reducing layer

1. Manufacturer: Submit proposals
 - 1.1. Product reference: Submit proposals
2. Type: As membrane manufacturer's/ supplier's recommendations

Execution generally

410 Adverse weather

1. Do not apply coatings: In wet conditions or at temperatures below 5°C, unless otherwise permitted by coating manufacturer.
2. Unfinished areas of roof: Keep dry.

420 Suitability of substrates

1. Substrates generally: Secure, clean, dry, smooth; free from frost, contaminants, loose material, voids, protrusions and organic growths. Compatible with coating system.
2. Complete preliminary work, including: Formation of upstands, kerbs, box gutters, sumps, grooves, chases and expansion joints.
3. Moisture content and stability: Must not impair integrity of roof.

Existing substrates

510 Removing existing coverings

1. Mechanical stripping: Permitted
2. Exposed substrate: Do not damage.

515 Existing flashings

1. General: Raise to facilitate cleaning of surfaces to receive coatings.
2. Timing: Leave raised during coating application and lower only after full curing.
3. Damaged lengths: Replace with new.

520 Preliminary power wash to existing coverings

1. Timing: Before renewing existing coverings, water jet-clean all areas. Allow to dry.

530 Making good existing liquid-applied waterproof roof coatings

1. General: Inspect for adherence and repair defective areas in accordance with proposed coating manufacturer's recommendations.

535 Making good existing reinforced bitumen membrane covering

1. Blisters: Star-cut, dry out and rebond.

2. Cracked and defective areas: Cut back to substrate.
3. Substrate: Dry out.
4. Bitumen membrane: Patch level with existing surface with layers of matching bitumen membrane, lapped minimum 100 mm onto existing membrane.

560 Existing edge trims

1. Fasteners: Check security. Replace as necessary.
2. Existing coverings: Cut out from edge trim recess sufficient to accommodate coatings.

565 Existing gutters/ outlets

1. Dirt, debris and build-up of previous coverings/ coatings: Remove to restore free flow of water.

570 Existing cracks/ gaps

1. General: Rake out, clean and make good with sealants or repair systems recommended by coating manufacturer.

580 Sterilization treatment to existing coverings

1. Preliminary work: Complete, including making good and cleaning down.
2. Biocidal solution: Apply to all areas previously subject to organic growth. Allow to dry.

New substrates/ vapour control layers/ warm deck roof insulation

660 Fixing perimeter trims

1. Setting out: 3 mm clear from wall or fascia.
2. Fasteners: 50 mm aluminium countersunk wood screws
 - 2.1. Fixing: 30 mm from ends and at 300 mm (maximum) centres.
3. Jointing
 - 3.1. Sleeves: Fixed one side only.
 - 3.2. GRP trims: Butt ends.
 - 3.3. Aluminium trims: 3 mm gaps between ends.
4. Corner pieces: Purpose made.

Roof coating system

710 Adhesion tests

1. Requirement: Carry out a trial coating to determine priming requirements and/ or system suitability.
2. Nature of test: 2 x 2 m application of coating system to existing membrane
3. Test results: Submit and arrange for inspection.

720 Applying primers/ conditioners

1. Coverage per coat (minimum): 0.5 L/m²
2. Surface coverage: Brushed well in to ensure local or full area coverage according to type.
3. Coats: Allow to dry before overcoating.

760 Application of roof coatings

1. Thickness: Monitor by taking wet/ dry film thickness readings.
2. Continuity: Maintain full thickness of coatings around angles, junctions and features.
3. Rainwater outlets: Form with watertight joints.
4. Drainage systems: Do not allow liquid coatings to enter piped rainwater or foul systems.
5. Edge trims: Apply coatings over horizontal leg of trim and into recess.

770 Skirtings and upstands

1. Top edges of coatings: Where not protected by flashings, apply into chases cut to a minimum depth of 10 mm.
2. Completion of chases: When coatings are fully cured, prepare chase and apply sealant as [section 722](#).
 - 2.1. Sealant: To [BS EN ISO 11600](#)
 - 2.1.1. Colour: As coating

Surfacing

840 Laying stone ballast

1. Condition of substrate: Clean.
2. Gravel guards: Fit to outlets.
3. Laying: Spread evenly. Do not pile to excessive heights.
 - 3.1. Depth (minimum): To match existing

Completion

910 Inspection

1. Coating surfaces: Check when cured for discontinuities.
 - 1.1. Defective areas: Apply another coating.

920 Electronic roof integrity test

1. Testing authority: UKAS-approved laboratory
2. Timing of test: Prior to completion
3. [Condition of roof prior to testing](#)
 - 3.1. Coating: Complete to a stage where integrity can be tested.
 - 3.2. Surface: Clean.
4. Test results: Submit.
5. Waterproof integrity certificate: Submit, on completion of testing.

940 Completion

1. Roof areas: Clean.
 - 1.1. Outlets: Clear.
 - 1.2. Flashings: Dressed into place.
2. Work necessary to provide a weathertight finish: Complete.
3. Storage of materials on finished surface: Not permitted.
4. Completed coatings: Protect against damage.

Ω End of Section

J40 **Flexible sheet waterproofing/ damp-proofing**

To be read with preliminaries/ general conditions.

001 Contractor Design Portion

1. System and associated features: Complete detailed design in accordance with this specification and the preliminary design drawings and submit before commencement of fabrication.
2. Standard: Complete the design in accordance with the designated code of practice to satisfy specified performance criteria.
3. Related works: Coordinate in the detailed design.
4. Detailed design: Complete and submit proposals for approval before fabrication or installation.
5. Submission of alternative proposals: Preliminary design drawings indicate intent. Other reasonable proposals will be considered.

Types of tanking/ damp proofing

290 High-density polyethylene/ polypropylene studded cavity drain membrane

1. Substrate: Existing
 - 1.1. Preparation: Fungicidal wash
2. Standard: To BS EN 13967
3. Manufacturer: Newton Waterproofing Systems
 - 3.1. Product reference: E-C-03
4. Stud height: System wrapped to internal walls, floors, and soffits.
5. Colour: Contractor's choice
6. Fixing: In accordance with manufacturer's recommendations
 - 6.1. Fasteners: In accordance with manufacturer's recommendations
 - 6.1.1. Fixing centres: In accordance with manufacturer's recommendations
 - 6.1.2. Sealing: Taped flush with the membrane
7. Joints: Lapped minimum three studs
 - 7.1. Sealing: Butyl rubber sealant between last two rows of studs and joints overtaped
8. Drainage components: Cavity drainage channels
9. Accessories: As per manufacturers recommendations and guidance.

Workmanship

310 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.

320 Inspection

1. Give notice: Before covering any part of membrane with overlying construction.

345 Cold-applied bonding compounds

1. Type and application: As recommended for the purpose by the membrane manufacturer.

360 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: Double-side tape

365 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: Mastic tape

370 Preformed collars for pipes, ducts, cables, etc.

1. Manufacturer: Contractor's Choice
 - 1.1. Product reference: Contractor's Choice
2. Sealing: Fully bond to penetrations and sheeting using double-sided jointing tape
3. Completed junctions: Impervious.

382 Floor channels

1. Manufacturer: Newton Waterproofing Systems
 - 1.1. Product reference: BaseDrain & FloorDrain - Drainage System - Newton CDM
2. Body
 - 2.1. Material: Unplasticized polyvinyl chloride (PVC-U).
 - 2.2. Sizes: 50 x 84 x 2000 mm, with six lengths per pack.
 - 2.3. Length: 2000 mm.
3. Cover or grating
 - 3.1. Material: PVC.
 - 3.2. Finish: Smooth.
4. Integral accessories: D22.

Ω End of Section

J42 **Single-layer polymeric sheet roof coverings**

Types of roof covering

110 Warm deck roof covering

1. Description: To lantern
2. Substrate: Plywood deck
 - 2.1. Preparation: Primer, as clause 320
3. Roof covering system: Fully adhered roof system
 - 3.1. Manufacturer: Submit proposals
4. Lower protection layer (loose-laid): Not required
5. Air and vapour control layer: As clause 395
6. Insulation: As clause 430
7. Waterproof membrane: Polyvinyl chloride (PVC)
8. Upper protection layer (loose-laid): Not required
9. Surface protection: Not required
10. Accessories: Perimeter trims, as clause 345 and pipe collars, as clause 480

Performance

202 Contractor's design of roof coverings

1. Design responsibility: Determine sizes, spacings and locations of fixings to suit the layout and details shown on drawing. Determine types and locations of fixings and joints in sheets
2. Structural and fire requirements
 - 2.1. Structural: As section B50.
 - 2.2. Fire: As section B05.
 - 2.3. Modifications: None
 - 2.4. Design: Complete the design in accordance with the designated code of practice to satisfy specified performance criteria.
3. Functional requirements
 - 3.1. Performance: As specified in this section
4. Additional requirements: None
5. Design and production information: As Preliminaries section A31
6. Timing of submissions: As Preliminaries section A31

210 Roof performance

1. Roof covering: Secure, free-draining and weathertight.

225 Avoidance of interstitial condensation: warm and inverted roofs

1. Interstitial condensation within roof construction: Determine risk as recommended in BS 5250.
2. Air and vapour control layer: If necessary, provide a suitable membrane so that damage and nuisance from interstitial condensation do not occur.

Products

320 Primer

1. Description: For vapour control layer
2. Manufacturer: Submit proposals
3. Type: As membrane manufacturer's recommendations

325 Adhesive

1. Description: For vapour control layer
2. Manufacturer: Submit proposals
3. Type: As membrane manufacturer's/ supplier's recommendations for conditions and surface

330 Timber trims, etc.

1. Supplier: Contractor's choice
2. Quality: Planed. Free from wane, pitch pockets, decay and insect attack, except ambrosia beetle damage.
3. Moisture content at time of covering (maximum): 22%
4. Preservative treatment: As membrane manufacturer's/ supplier's recommendations

340 Preformed sleeves

1. Manufacturer: Contractor's choice
2. Type: 0.6 mm galvanized steel flanged sleeve with 0.5 mm unreinforced membrane laminate
3. Colour: Medium grey
4. Size: As recommended by manufacturer

345 Perimeter trims

1. Manufacturer: Contractor's choice
2. Type: 0.6 mm galvanized steel with 0.5 mm unreinforced membrane laminate
3. Colour: Medium grey
4. Size: As recommended by manufacturer

360 Plywood overlay to metal deck

1. Manufacturer: Contractor's choice
2. Standard: To BS EN 636, section 8 (plywood for use in humid conditions)
 - 2.1. Quality: Naturally durable timber, free from preservatives.
3. Thickness: 18 mm

375 Minor movement joints in substrates

1. Manufacturer: Contractor's choice
2. Size: 50mm
3. Insert colour: Black

395 Air and vapour control layer

1. Manufacturer: Sarnafil
 - 1.1. Product reference: Sarnavap® 5000E SA
2. Type: Polyethylene sheet
3. Thickness: 0.6mm
4. Vapour resistance: 450 MN s/g

430 Warm deck roof insulation

1. Manufacturer: Sarnafil
 - 1.1. Product reference: SarnaTherm G
2. Type: Rigid
3. Reaction to fire: Class E EN 13501-1
4. Thermal conductivity : 0.025 W/mK
5. Thickness: Refer to drawing
6. Compressive strength (minimum): > 150 kPa at 10% deformation BS EN 826:1996

7. Edges: Square

Execution generally

510 Adverse weather

1. General: Do not lay membrane at temperatures below 5°C or in wet or damp conditions unless effective temporary cover is provided over working area.
2. Unfinished areas of roof: Keep dry and protect edges of laid membrane from wind action.

520 Incomplete work

1. End of working day: Provide temporary seal to prevent water infiltration.
2. On resumption of work: Cut away tail of membrane from completed area and remove from roof.

530 Applying primers

1. Coverage per coat (minimum): 0.1 L/m²
2. Surface coverage: Even and full.
3. Coats: Fully bonded. Allow volatiles to dry off thoroughly between coats.

Substrates/ air and vapour control layers/ warm deck roof insulation

610 Suitability of substrates

1. Surfaces to be covered: Secure, clean, dry, smooth, and free from frost, contaminants, voids and protrusions.
2. Preliminary work. Complete, including:
 - 2.1 Grading to correct falls.
 - 2.2 Formation of upstands, kerbs, box gutters, sumps, grooves, chases and expansion joints.
 - 2.3 Fixing of battens, fillets and anchoring plugs/ strips.
3. Moisture content and stability of substrate: Must not impair integrity of roof.

640 Fixing timber trims

1. Fasteners: Sherardized steel screws
2. Fixing centres (maximum): 600 mm

660 Joints in rigid board substrates

1. Cover strip: Lay centrally over substrate joints before laying air and vapour control layers or coverings. Adhere to substrate with bonding compound along edges only.

670 Laying air and vapour control layer

1. Laying: Fully bonded, flat and smooth
2. Side and head laps: fully sealed
3. Upstands, kerbs and other penetrations: Enclose edges of insulation. Fully seal at abutment by bonding or taping.

680 Laying warm deck roof insulation

1. **Setting out**

- 1.1. Long edges: Fully supported and running at right angles to direction of span.
- 1.2. End edges: Adequately supported.
- 1.3. Joints: Butted together.
- 1.4. End joints: Staggered.
2. Attachment: Not required
3. Mechanical fixing: Determined by contractor
4. Completion: Boards must be in good condition, well fitting and secure.

Waterproof membranes/ accessories

720 Adhesive bonding of waterproof membrane

1. Setting out: Perpendicular to the deck direction
2. Attachment: Fully adhered on a continuous even coating of adhesive
3. Membrane: Do not wrinkle or stretch.
4. Surface condition at completion: Fully sealed, smooth, weatherproof and free-draining.

740 Adhesive jointing of waterproof membrane

1. Side and end joints
 - 1.1. Laps (minimum): 20 mm
 - 1.2. Preparation: Prime, clean and dry surfaces beyond full width of joint and lap.
 - 1.3. Sealing: Apply continuous even coverage of adhesive to both surfaces. Mate and roll together. Do not wrinkle or stretch membrane.
2. Seam sealant: Even bead of liquid PVC to each joint
3. Condition at completion: Fully sealed, smooth, weatherproof and free-draining.

760 Perimeter of membrane

1. General: Secure membrane at roof edge conditions, changes of plane, curb flashings, upstands to roof lights, etc. with mechanical fasteners.

765 Perimeter details for thermoplastic membranes

1. Upstands, edge trims, drips, kerbs, etc.: Secure preformed metal sections to roof structure with mechanical fasteners
2. Roof membrane: Dress over perimeter profile. Overlap beyond fasteners by minimum of 50 mm
3. Sealing: Weld together

775 Perimeter details for elastomeric membranes

1. Upstands, edge trims, drips, kerbs, etc.: Preformed from waterproof membrane material.
2. Reinforcing strip: Lay at edge of horizontal roof plane.
 - 2.1. Securing: Mechanically fasten.
3. Roof membrane: Dress over perimeter profiles.
 - 3.1. Sealing: Bond to substrate and to secured perimeter reinforcing strip.

Surfacing - Not Used

Completion

910 Inspection

1. Interim and final roof inspections: Submit reports.

920 Electronic roof integrity test

1. Testing authority: UKAS-approved laboratory
2. Timing of test: Prior to, and on completion of access by other trades
3. Condition of roof prior to testing: Waterproof membrane complete to a stage where integrity can be tested. Surface clean and free from obstruction.
4. Test results and warranty: Submit on completion of testing.

940 Completion

1. Roof areas: Clean.
 - 1.1. Outlets: Clear.
2. Work necessary to provide a weathertight finish: Complete.

3. Storage of materials on finished surface: Not permitted.
4. Completed membrane: Do not damage. Protect from traffic and adjacent or high-level working.

Ω End of Section

K10

Gypsum board dry linings/ partitions/ ceilings

Types of dry lining

001 Contractor Design Portion

1. System and associated features: Complete detailed design in accordance with this specification and the preliminary design drawings and submit before commencement of fabrication.

To include design completion of but not limited to;
Fixings, support, fire stopping, compartmentation and protection to suspended ceilings

2. Standard: Complete the design in accordance with the designated code of practice to satisfy specified performance criteria.
3. Related works: Coordinate in the detailed design.
4. Detailed design: Complete and submit proposals for approval before fabrication or installation.
5. Submission of alternative proposals: Preliminary design drawings indicate intent. Other reasonable proposals will be considered.

125 Metal stud partition system

1. Description: WT-02
2. Manufacturer: British Gypsum
3. Partition type: Gypframe 48 S 50 'C' studs, fixed into base and head channels (Gypframe 50 FEC 50) securely to floor and soffit at same centres.
 - 3.1. Centres: 600 mm
4. Partition height: Refer to drawings
5. Head condition: Refer to drawings
 - 5.1. Deflection allowance: 15 mm
6. Damp-proof course: Not required
7. Insulation: Not required
8. Linings: 18 mm WBP (exterior-grade) plywood
 - 8.1. Pattressing: Fixed to the face of vertical metal channels behind plasterboard. Full-height behind all board areas. Securely screw-fixed to channels using self-drilling drywall screws. Screws at max. 300 mm centres and within 50 mm of board edges.
9. Access units: Refer to drawings

126 Metal stud partition system

1. Description: WT-03
2. Manufacturer: British Gypsum
 - 2.1. Product reference: GypWall Single Frame – A206A198-EN
3. Partition type: Gypframe 70 AS 50 AcouStuds, fixed into Gypframe 72 FEC 50 Folded-Edge Standard Floor & Ceiling Channels securely at floor and soffit. Stud spacing as per system requirements.
 - 3.1. Centres: 600 mm
4. Partition height: Refer to drawings
5. Head condition: Refer to drawings
 - 5.1. Deflection allowance: 15 mm
6. Damp-proof course: Not required
7. Insulation: 25 mm Isover Acoustic Partition Roll (APR 1200), friction-fitted between studs
 - 7.1. Recycled content: Insulation – up to 86% (Isover APR 1200); plasterboard and studs to manufacturer's declaration
 - 7.2. Thickness: 122mm overall

8. Moisture vapour resistance (minimum): Not required
9. Resilient layer: Not required
10. Linings: 2 x 12.5 mm Gyproc SoundBloc each side
 - 10.1. Plasterboard: Screw-fixed to studs using British Gypsum Drywall Screws (25 mm for first layer, 35 mm for second layer). Gyproc Joint Tape and Gyproc Joint Filler to joints.
11. Access units: Refer to drawings
12. Finishing: Skim coat plaster and seamless jointing
 - 12.1. Primer/ Sealer: Primer to painted areas
 - 12.2. Accessories: Metal beads at corners / junctions / stops as recommended by board manufacturer
13. Other requirements: Sealant continuous at perimeter junctions, service penetrations and base of lining

127 Shaftwall

1. Description: WT-06
2. Manufacturer: British Gypsum
 - 2.1. Product reference: GypWall Shaft
3. Partition type: Gypframe 60 I 70 'I' Studs at 600mm centres with Gyproc CoreBoard 19mm between studs, secured by Gypframe G102 Retaining Channel. Two layers of Gyproc FireLine 12.5mm to non-shaft side.
 - 3.1. Centres: 600 mm
4. Partition height: Refer to drawings
5. Head condition: Refer to drawings
 - 5.1. Deflection allowance: 15 mm
6. Damp-proof course: Not required
7. Moisture vapour resistance (minimum): Not required
8. Resilient layer: Not required
9. Linings: Gyproc CoreBoard 19mm, 2 x Gyproc Fireline
10. Access units: Refer to drawings
11. Finishing: Skim coat plaster and seamless jointing
 - 11.1. Primer/ Sealer: Primer to painted areas
 - 11.2. Accessories: Metal beads at corners / junctions / stops as recommended by board manufacturer
12. Other requirements: Sealant continuous at perimeter junctions, service penetrations and base of lining

145 Independent wall lining system

1. Description: WT-04
2. Partition type: Independent lining using Gypframe 60 I 70 'I' Studs fixed into Gypframe 62 FEC 50 folded-edge floor and ceiling channels. Ceiling channel includes vertical deflection allowance.
 - 2.1. Centres: 600 mm
3. Wall lining height: As shown on drawings
 - 3.1. Intermediate bracing: Gypframe GFS1 Fixing Straps at maximum 1200 mm centres
4. Head condition: Deflection head using Gypframe 62 FEC 50 channel with lining board stopped 5 mm below structural soffit. Flexible sealant (Gyproc Sealant) used at the board-to-soffit junction to maintain fire and acoustic integrity.
 - 4.1. Deflection allowance: 15mm vertical movement
5. Structural performance
 - 5.1. Strength grade to BS 5234-2: Severe Duty

- 5.1.1. Additional tests: Refer to manufacturer's technical data sheets for acoustic and robustness testing.
- 5.2. Air pressure and deflection: System suitable for standard internal pressure environments. Not pressure-tested for cleanroom or containment use.
- 5.3. Other requirements: Ensure fixing alignment allows for secure support of plywood pattressing and board layers. Avoid bridging the deflection gap with rigid fixings.
- 6. Fire performance
 - 6.1. Reaction to fire: WBP Plywood – Class D or better depending on treatment (confirm with supplier)
 - 6.2. Fire resistance of complete wall lining assembly: Up to 30 minutes (BS EN 1364-1) when installed with full-height lining and perimeter seals.
- 7. Metal framing: Type recommended by board manufacturer to complete the partition system and achieve specified performance.
- 8. Insulation: Not required
- 9. Linings: 18 mm WBP (exterior-grade) plywood pattressing to room side

Full-height, screw-fixed to vertical metal studs at max. 300 mm centres and within 50 mm of edges

165 Wall lining system (metal framing)

- 1. Description: WT-01
- 2. Manufacturer: British Gypsum
 - 2.1. Product reference: Gyplyner Single
- 3. Wall: Masonry
- 4. Framework:: To manufacturers guidance and accessories
 - 4.1. Bracket Type: Gypframe GL2 or GL9 bracket as required
 - 4.2. Base and Head Channels: Gypframe GL8 Track – fixed to floor and soffit at 600 mm centres
 - 4.3. Vertical lining channels: Gypframe GL1 – spaced at 600 mm centres.
 - 4.4. Fixing straps: Gypframe GFS1 – for horizontal plasterboard joint support.
- 5. Linings: 18 mm WBP (exterior-grade) plywood
 - 5.1. Pattressing: Fixed to the face of vertical metal channels behind plasterboard. Full-height behind all board areas. Securely screw-fixed to channels using self-drilling drywall screws. Screws at max. 300 mm centres and within 50 mm of board edges.
- 6. Cavity between wall and back of lining: Refer to drawings
 - 6.1. Framing centres: 600 mm
 - 6.2. Bracket centres (maximum): 600 mm
- 7. Fire performance
 - 7.1. Reaction to fire: Not required
- 8. Fire separation
 - 8.1. Cavity fire barriers: Not required
- 9. Insulation: Not required
- 10. Access units: Required see drawings

220 Proprietary suspended ceiling system

- 1. Standard: To BS EN 13964.
- 2. Evidence of compliance: Submit Declaration of Performance (DoP).
- 3. Manufacturer: Contractor's choice
 - 3.1. Product reference: Contractor's choice
- 4. Lining board: First layer 12.5 mm plasterboard; face layer acoustic panel lining to clause K13.170
 - 4.1. Finishing: As recommended by board manufacturer
 - 4.2. Accessories: Metal beads/ stops recommended by lining board manufacturer

5. Suspension system

- 5.1. Grid centres: 400mm
- 5.2. Hangers: Type recommended by board manufacturer
 - 5.2.1. Length: Varies
 - 5.2.2. Centres: 900mm
 - 5.2.3. Top fixing: To suit structural soffit of existing.
- 6. Insulation: Not required
 - 6.1. Thickness: Not applicable
- 7. Access units: Not required
- 8. Integrated services fittings: Hangers and housings for linear luminaires
- 9. Electrical continuity and earth bonding: Not required
- 10. Accessories/ Other requirements: None

221 Proprietary suspended ceiling system

- 1. Standard: To BS EN 13964.
- 2. Evidence of compliance: All ceiling kits to be CE marked. Submit Declaration of Performance (DoP).
- 3. Manufacturer: Contractors choice
 - 3.1. Product reference: Contractors choice
- 4. Lining board: First layer of 12.5mm MR plasterboard as clause 403
 - 4.1. Finishing: Seamless jointing. Skim coat plaster.
 - 4.2. Accessories: Metal beads/ stops recommended by lining board manufacturer
- 5. Suspension system
 - 5.1. Grid centres: 400mm mm
 - 5.2. Hangers: Type recommended by board manufacturer
 - 5.2.1. Length: Varies
 - 5.2.2. Centres: 900mm
 - 5.2.3. Top fixing: To suit structural soffit of metal deck steel beams and metal decking.
- 6. Insulation: Not required
 - 6.1. Thickness: Not applicable
- 7. Access units: Required
- 8. Integrated services fittings: Hangers and housings for linear luminaires
- 9. Electrical continuity and earth bonding: Not required
- 10. Accessories/ Other requirements: None

230 Arched plasterboard ceiling

- 1. Standard: To BS EN 13964.
- 2. Evidence of compliance: Submit Declaration of Performance (DoP).
- 3. Manufacturer: Contractor's choice
 - 3.1. Product reference: Contractor's choice
- 4. Lining board: First layer 12.5 mm plasterboard; face layer acoustic panel lining to clause K13.170
 - 4.1. Finishing: As recommended by board manufacturer
 - 4.2. Accessories: Metal beads/ stops recommended by lining board manufacturer
- 5. Channel: Gypframe MF7C Curved Support Channel
- 6. Insulation: Not required
 - 6.1. Thickness: Not applicable
- 7. Access units: Not required

8. Electrical continuity and earth bonding: Not required
9. Accessories/ Other requirements: None

245 Ceiling lining on timber

1. Description: MR plasterboard lining to timber rafters
2. Background: Structural timber joists
3. Linings: First layer of 12.5mm MR plasterboard as clause 403
 - 3.1. Fixings: Screws
4. Finishing: Skim coat plaster
 - 4.1. Primer/ Sealer: Primer to painted areas
 - 4.2. Accessories: Metal beads/ stops recommended by board manufacturer
5. Other requirements: Insulation between and above rafters to clause J42.430 at thicknesses to achieve required U-Value

265 Encasement system (frameless)

1. Description: To steel beams and posts
2. Manufacturer: British Gypsum
 - 2.1. Product reference: Firecase BG
3. Structural members: As drawings
 - 3.1. Extent of protection: To all exposed sides
4. Fire performance
 - 4.1. Fire resistance of encasement system: To BS EN 13501-2. REI 60
 - 4.2. Reaction to fire: To BS EN 13501-1, class B-s3, d2 or better
5. Support system: Sizes and spacings of intermediate backing strips/ noggings/ metal angles and fixings as recommended by board manufacturer.
6. Linings: 15mm Glasroc F Firecase
7. Finishing: Seamless jointing
 - 7.1. Primer/ Sealer: Not required
 - 7.2. Accessories: Metal beads/ stops recommended by the board manufacturer
8. Other requirements: 40mm Glasroc Firecase screws. 60min rating to beam enclosures.

400 Gypsum boards generally

1. Standard
 - 1.1. Gypsum plasterboard to BS EN 520.
 - 1.2. Gypsum fibre board to BS EN 15283-2.
 - 1.3. Evidence of compliance: Submit Declaration of Performance (DoP).

401 Gypsum plasterboard

1. Type: To BS EN 520, type A
2. Core density (minimum): 650 kg/m³.
3. Reaction to fire: Manufacturer's standard
4. Water vapour resistance factor: Manufacturer's standard
5. Thermal conductivity: Manufacturer's standard
6. Other BS EN 520 characteristics: None
7. Recycled content: Contractor's choice
8. Exposed surface and edge profiles: Suitable to receive specified finish

403 Gypsum plasterboard (moisture-resistant)

1. Type: To BS EN 520, type H1

2. Core: Moisture-resistant.
 - 2.1. Density (minimum): 710 kg/m³.
3. Paper facings: Moisture-resistant.
4. Reaction to fire: Manufacturer's standard
5. Water vapour resistance factor: Manufacturer's standard
6. Thermal conductivity: Manufacturer's standard
7. Recycled content: Submit proposals
8. Exposed surface and edge profiles: Clean and undamaged

415 Gypsum Tilebacker

1. Description: Glasroc H TileBacker 12.5mm
2. Type: To EN 15283-1:2008+A1:2009, Type GM-H1
3. Core density (minimum): Manufacturer's standard
4. Reaction to fire: Manufacturer's standard
5. Water vapour resistance factor: Manufacturer's standard
6. Thermal conductivity: Manufacturer's standard
7. Recycled content: Submit proposals
8. Exposed surface and edge profiles: Clean and undamaged

General/ preparation

325 Preparation of masonry to receive wall linings

1. General: Suitable to receive lining system. Redundant fixtures and services removed. Cutting, chasing and making good completed.
2. Holes, gaps, service penetrations, perimeter junctions and around openings: Seal.
3. Adhesive fixings: Prepare substrate to achieve effective bonding.
 - 3.1. Contaminants: Remove loose material, dirt, grease, oil, paper, etc.
 - 3.2. Absorption: Control by dampening, priming or applying bonding agents as necessary.

335 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.

375 New wet laid bases

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

Components

400 Gypsum boards generally

1. Standard
 - 1.1. Gypsum plasterboard to BS EN 520.
 - 1.2. Gypsum fibre board to BS EN 15283-2.
 - 1.3. Evidence of compliance: Submit Declaration of Performance (DoP).

401 Gypsum plasterboard

1. Type: To BS EN 520, type A
2. Core density (minimum): 650 kg/m³.

3. Reaction to fire: Manufacturer's standard
4. Water vapour resistance factor: Manufacturer's standard
5. Other BS EN 520 characteristics: None
6. Recycled content: Submit proposals
7. Exposed surface and edge profiles: Suitable to receive specified finish

403 Gypsum plasterboard (moisture-resistant)

1. Type: To BS EN 520, type H1
2. Core: Moisture-resistant.
 - 2.1. Density (minimum): 710 kg/m³.
3. Paper facings: Moisture-resistant.
4. Reaction to fire: Manufacturer's standard
5. Water vapour resistance factor: Manufacturer's standard
6. Thermal conductivity: Manufacturer's standard
7. Other BS EN 520 characteristics: None
8. Recycled content: Submit proposals
9. Exposed surface and edge profiles: Suitable to receive specified finish

404 Gypsum plasterboard (improved fire protection)

1. Type: To BS EN 520, type F
2. Core: Gypsum Fireline. Including fibres and/ or other additives for improved cohesion.
 - 2.1. Density (minimum): 800 kg/m³.
3. Reaction to fire: Manufacturer's standard
4. Water vapour resistance factor: Manufacturer's standard
5. Thermal conductivity: Manufacturer's standard
6. Other BS EN 520 characteristics: None
7. Recycled content: Submit proposals
8. Exposed surface and edge profiles: Suitable to receive specified finish

409 Gypsum plasterboard (improved sound insulation)

1. Type: To BS EN 520, type D
2. Board:: Gyproc SoundBloc
3. Core density (minimum): 820 kg/m³.
4. Reaction to fire: Manufacturer's standard
5. Water vapour resistance factor: Manufacturer's standard
6. Thermal conductivity: Manufacturer's standard
7. Other BS EN 520 characteristics: None
8. Recycled content: Submit proposals
9. Exposed surface and edge profiles: Suitable to receive specified finish

415 Gypsum plasterboard

1. Description: Circular column encasement
2. Type: To BS EN 520, type R
3. Lining: BG Pro Cut Circular Column Encasements or equal approved
4. Reaction to fire: Class A2-s1, d0 or better
5. Exposed surface and edge profiles: Suitable to receive specified finish

430 Access panels

1. Description: To suspended ceilings

2. Type: BASWA
 - 2.1. Sizes: As per drawings
 - 2.2. Fire performance
 - 2.2.1. Reaction to fire: Not required
 - 2.2.2. Fire resistance: Not required
3. Frame: Bead for taping and jointing
4. Panel: Plasterboard infill
5. Lock: Tamper-proof and operated by castellated key

432 Metal studs

1. Manufacturer: Contractor's Choice
 - 1.1. Product reference: Contractor's Choice

Installation

435 Dry linings generally

1. General: Use fixing, jointing, sealing and finishing materials, components and installation methods recommended by board manufacturer.
2. Cutting gypsum boards: Neatly and accurately without damaging core or tearing paper facing.
 - 2.1. Cut edges: Minimize and position at internal angles wherever possible. Mask with bound edges of adjacent boards at external corners.
3. Fixings boards: Securely and firmly to suitably prepared and accurately levelled backgrounds.
4. Finishing: Neatly to give flush, smooth, flat surfaces free from bowing and abrupt changes of level.

445 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.

455 Metal framing for partitions/ wall linings

1. Setting out: Accurately aligned and plumb.
 - 1.1. Frame/ Stud positions: Equal centres to suit specified linings, maintaining sequence across openings.
 - 1.2. Additional studs: To support vertical edges of boards.
2. Fixing centres at perimeters (maximum): 600 mm.
3. Openings: Form accurately.
 - 3.1. Doorsets: Use sleeved or boxed metal studs and/ or suitable timber framing to achieve strength grade requirements for framing assembly and adequately support weight of door.
 - 3.2. Services penetrations: Allow for associated fire-stopping.

465 Staggered stud partitions

1. Horizontal frame members (noggins, bearers, etc.) and boards: Fix between alternate studs and not touching adjacent offset studs.

475 Metal furrings for wall linings

1. Setting out: Accurately aligned and plumb.
 - 1.1. Vertical furring positions: Equal vertical centres to suit specified linings, maintaining sequence across openings. Position adjacent to angles and openings.
 - 1.2. Additional vertical furrings: To support vertical edges of boards and at junctions with partitions.
 - 1.3. Horizontal furring positions: To provide continuous support to edges of boards.

2. Adhesive bedding to furrings

- 2.1. Dabs: Length 200 mm (minimum). Located at ends of furrings and thereafter at 450 mm (maximum) centres.
- 2.2. Junctions with partitions: Continuous bed with no gaps across cavity.

485 Suspended ceiling grids

1. Setting out: Accurately aligned and level.
 - 1.1. Grid members and hangers: Centres to suit specified linings and imposed loads.
 - 1.2. Additional grid members: Provide bracing and stiffening at upstands, partition heads, access hatches, etc.
2. Fixing: Securely at perimeters, grid joints, top and bottom hanger fixings.

505 Installing 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: Sized accordingly.
 - 2.2. Ceilings: Cut insulation around electrical fittings, etc.

510 Sealing gaps and air paths

1. Location of sealant: To perimeter abutments and around openings.
 - 1.1. Pressurized shafts and ducts: At board-to-board and board-to-metal frame junctions.
2. Application: To clean, dry and dust free surfaces as a continuous bead with no gaps.
 - 2.1. Gaps greater than 6 mm between floor and underside of gypsum board: After sealing, fill with jointing compound.

530 Cavity fire barriers within partitions/ wall linings

1. Metal framed systems
 - 1.1. Material: Plasterboard 12.5 mm 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.

545 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, EI 60 or better
3. Ceiling void subdivision: Fix barriers as drawings.
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.

555 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.

560 Joints between boards

1. Tapered edged gypsum boards

- 1.1. Bound edges: Lightly butted.
- 1.2. Cut/ unbound edges: 3 mm gap.
2. Square edged plasterboards: 3 mm gap.
3. Square edged gypsum fibre boards: 5 mm gap.

565 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.

570 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.

580 Insulation backed plasterboard

1. General: Do not damage or cut away insulation to accommodate services.
2. Installation at corners: Carefully cut back insulation or plasterboard as appropriate along edges of boards to give a continuous plasterboard face, with no gaps in insulation.

590 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.

592 Fixing insulation backed plasterboard to metal furrings

1. Fixing to furrings: In addition to screw fixings apply continuous beads of adhesive sealant to furrings.

595 Deflection heads

1. Fixing boards: Do not fix to head channels.

610 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

650 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.

670 Seamless jointing to gypsum boards

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 paper tape, fully bedded.
3. Protection of edges/ corners: Reinforce external angles, stop ends, etc. with specified edge/ angle bead.
4. Finishing: Apply jointing compound. Feather out each application beyond previous application to give a flush, smooth, seamless surface.
5. Nail/ screw depressions: Fill with jointing compound to give a flush surface.
6. Minor imperfections: Remove by light sanding.

680 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.

692 Rigid beads/stops

1. Internal: To BS EN 13658-1.
2. External: To BS EN 13658-2.

695 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.

725 Repairs to existing gypsum board

1. Performance of repairs must match original specified performances.
2. Filling small areas with broken cores: Cut away paper facing, remove loose core material and fill with jointing compound.
 - 2.1. Finish: Flush, smooth surface suitable for redecoration.
3. Large patch repairs: Cut out damaged area and form neat hole with rectangular sides. Replace with matching gypsum board.
 - 3.1. Fixing: Use methods to suit type of dry lining, ensuring full support to all edges of existing and new gypsum board.
 - 3.2. Finishing: Fill joints, tape and apply jointing compound to give a flush, smooth surface suitable for redecoration.

Ω End of Section

K13 Rigid sheet fine linings and panelling

Types of lining and panelling

105 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).

170 Acoustic plaster lining

1. Description: Class A Acoustic Plaster
2. Substrate: Plasterboard
3. Battens: Softwood free from decay and active insect attack and with no knots wider than half the width of the section.
 - 3.1. Finished size: Not applicable
 - 3.2. Moisture content at time of fixing (maximum): 18%.
 - 3.3. Spacing (centres): Not applicable
 - 3.4. Method of fixing: Adhered to substrate
4. Acoustic insulation: Pre-coated mineral fibre
 - 4.1. Manufacturer: Baswa
 - 4.1.1. Product reference: Phon Classic
 - 4.2. Thickness: 40mm
5. Panels
 - 5.1. Manufacturer: Baswa
 - 5.1.1. Product reference: Fine
 - 5.2. Type: Marble Sand Plaster
 - 5.3. Thickness: As manufacturer's recommendation
 - 5.4. Finish: White
6. Installation
 - 6.1. Method of fixing panels: Adhered
7. Included features: Not applicable
8. Accessories: All accessories to manufacturers system and approval. Including but not limited to - BASWA Access Hatches; BASWA Aluminium L Profile; BASWA Installation Platform.

171 Acoustic panel lining

1. Description: Proprietary Acoustic Semi Rigid Panel
2. Substrate: Wall lining to manufacturers requirements
3. Battens: Horizon RAFNEX24 Channels mechanically fixed to substrate
 - 3.1. Finished size: As manufacturers guidance
 - 3.2. Moisture content at time of fixing (maximum): As manufacturers guidance
 - 3.3. Spacing (centres): As manufacturers guidance
 - 3.4. Method of fixing: Mechanically fixed to manufacturers guidance
4. Panels
 - 4.1. Manufacturer: Autex Acoustics Ltd
 - 4.1.1. Product reference: Cube
 - 4.2. Type: Semi Rigid Polyester fibre (PET)
 - 4.3. Panel size:: Refer to drawings
 - 4.4. Thickness: 24mm

- 4.5. Finish: Smooth
- 4.6. Edges: Square
- 4.7. Surface Pattern: Solid
- 4.8. Colour: As selected by Architect from standard range
- 5. Acoustic Performance: Class A to BS EN ISO 11654
- 6. Installation
 - 6.1. Method of fixing panels: Panels clipped to battens as manufacturers guidance
- 7. Included features: Not applicable
- 8. Accessories: Fittings for wall mounting. Autex edge trims as required.
- 9. Reaction to fire: To BS EN 13501-1, Class B-s2,d2

General requirements

210 Advance registration

- 1. Materials registered in advance by the employer: Obtain from supplier named in Preliminaries section A56.
 - 1.1. Ordering: Supersede employer's registration and take over responsibility by an order to the supplier covering price, supply and delivery to suit progress of the work.

220 Material samples

- 1. Representative samples of designated materials: Submit before placing orders.
- 2. Designated materials: Acoustic panel lining

260 Environmental conditions

- 1. General requirements prior to starting work specified in this section: Building weathertight; wet trades completed and affected areas dried out.
- 2. Temperature and humidity before, during and after fixing lining/ panelling: Maintained at levels approximating to those which will prevail after building is occupied.

Fabrication/ fixing/ finishing

310 Accuracy of fabrication

- 1. Site dimensions: Take as necessary before starting fabrication.
 - 1.1. Discrepancies with drawings: Report without delay and obtain instructions before proceeding.
- 2. Permissible deviations for panels
 - 2.1. Length: ± 1.5 mm.
 - 2.2. Width: ± 1.5 mm.
 - 2.3. Squareness (taking the longer of 2 sides at a corner as a baseline and measuring the deviation of the shorter side from the baseline perpendicular): ± 1.5 mm in 1 m.
 - 2.4. Flatness (of panels with a core thickness of 12 mm and over, as delivered to site): ± 1 mm under a 600 mm straightedge.

320 Laminated timber cores for wood-veneered panels

- 1. Face grain direction: Perpendicular to specified direction of veneer grain.
 - 1.1. Alternative arrangement: Panels cross-veneered before applying face veneer.

340 Holes/ cut-outs in laminated plastics veneers

- 1. Internal corners: Formed to a radius, minimum 5 mm when not specified otherwise.
- 2. Holes for fasteners: Formed slightly oversize.

350 Fixing linings and panelling

1. Setting out: Accurate, true to line and level, free from undulations and lipping, with lines and joints aligned, straight and parallel unless specified otherwise.
2. Movement allowance: Adequate for future moisture and temperature movement of boards.
3. Fixing of panels: Secure, to prevent pulling away, bowing, or other movement during use.
4. Methods of fixing and fasteners: As section Z20 unless specified otherwise.
5. Trims: Wherever possible, to be in unjointed lengths between angles or ends of runs.
 - 5.1. Running joints: Where unavoidable, submit proposals for location and method of jointing.
 - 5.2. Angle joints: Mitred, unless specified otherwise.

370 Sealant pointing

1. Sealant: Silicone based elastic sealant with fungicide
 - 1.1. Manufacturer: Submit Proposals
 - 1.2. Colour: Submit Proposals
2. Application: As section Z22.

400 Door frames

1. Hardwood packing between frames and reveals: To give even joints of specified width.
 - 1.1. Position of packs: Where fixings tighten frame against structure.
2. Positions of frames: Accurate, plumb, level, and aligned.
 - 2.1. Fixing of frames: Secure to prevent pulling away, deflection, or other movement during use.
 - 2.2. Fastener locations: 600 mm maximum centres with at least one fixing 150 mm from each end of jambs and one adjacent to each hanging point.

410 Fire-resisting frames

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

430 Hanging of prefinished doors

1. Planing/ Sanding: Not permitted.

440 Ironmongery

1. Supplier: Hafele
2. Installation: By nominated lining / panelling subcontractor
 - 2.1. Fasteners: Supplied by ironmongery manufacturer.
 - 2.2. Finish/ Corrosion resistance: To match ironmongery.
 - 2.3. Adjacent surfaces: Undamaged.
3. Moving parts: Adjusted, lubricated and functioning correctly at completion.

480 Clear finished wood

1. Nail holes: Filled with stopping coloured to match wood.
2. Prepared surface: Smooth, closed and free from sanding marks.
3. Finish: Smooth, free from brush marks, nibs, sags, runs and other defects.

Ω End of Section

K20 **Timber board flooring/ sarking/ linings/ casings**

To be read with preliminaries/ general conditions.

120 Timber board flooring

1. Description: To Reveller Studio
2. Manufacturer: Submit proposals
 - 2.1. Product reference: Submit proposals
3. Substrate: Floating Screed
4. Boards
 - 4.1. Standard: To BS EN 14342.
 - 4.1.1. Evidence of compliance: Submit.
 - 4.2. Wood species: Engineered European Oak
 - 4.3. Quality: To BS EN 13990, Grade A. Blue stain, fissures, knot holes and loose or unsound knots not permitted on face side of flooring.
 - 4.4. Finished face width (exposed width after fixing): 260mm
 - 4.5. Finished thickness: 15mm
 - 4.6. Edge profile: Square-edged
 - 4.7. Moisture content at time of fixing: 9–13%
5. Fixing: Secret-nailed with 40 mm lost head nails
 - 5.1. Fixing centres: In accordance with BS 8201.

Workmanship

310 Workmanship generally

1. Protection during and after installation: Keep boards dry. Protect from dirt, stain and damage until completion.
2. Boards to be used internally: Do not install until building is watertight.
3. Methods of fixing, and fasteners: As section Z20 'Fixings and adhesives'.
4. Moisture content of timber supports at time of fixing boards: Not more than 18%.

320 Moisture content of new concrete/ screed substrates 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.

330 Moisture content of timber

1. Conditions during and after installation: Control ambient temperature and humidity conditions to maintain moisture content at average level specified in BS EN 942, Table B.1 for the relevant service condition until completion.
2. Test for moisture content: When instructed, using an approved moisture meter.

340 Installing vapour control membrane to floating floors

1. Location: See drawings
2. Joints: Overlap by at least 150 mm and seal with vapour-resistant tape.
3. Perimeter/ upstands: Turn membrane up around perimeter of flooring and around any upstands and seal to top face of boards using: Polyethylene double-sided adhesive tape
 - 3.1. Excess material: Trim off neatly after fixing skirting boards/ cover beads.

4. Membrane condition: Intact, clean and dry prior to laying flooring.

350 Treated timber

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

360 Access panels

1. Size and position: Agree before fixing boards.
2. Additional noggings/ dwangs, battens, etc.: Provide as necessary.

370 Fixing boards

1. Environmental conditions: Do not fix boards when ambient temperature is at or below 0°C, or above 30°C.
2. Generally: Fix boards securely to each support to give flat, true surfaces free from undulations, lipping, splits and protruding fasteners.
3. Timber movement: Position boards and fixings to prevent cupping, springing, excessive opening of joints and other defects.
4. Heading joints: Tightly butted, central over supports and at least two board widths apart on any one support.
5. Edges: Plane off proud edges.
6. Exposed nail heads: Neatly punch below surface.

Ω End of Section

K32 **Panel cubicles/ duct and wall linings/ screens**

To be read with preliminaries/ general conditions.

140 Duct/ wall linings – panels only

1. Description: Kemmlit IPS Solid Grade Laminate Panels
2. Manufacturer: Kemmlit
 - 2.1. Product reference: Kemmlit/Skirmett Super Loo Interior
3. Panels
 - 3.1. Type: Manufacturer's standard
 - 3.1.1. Width (coordinating): Refer to drawings
 - 3.2. Core material: Solid-grade laminate
 - 3.2.1. Thickness: 13mm
 - 3.3. Facings: As cubicle panels
 - 3.3.1. Colour/ Pattern/ Species: To be confirmed by Architect from standard range
 - 3.4. Edge treatment: Laminate, square edge; colour to match
4. Fasteners: Manufacturer's standard
5. Framing/ Support
 - 5.1. Duct panels: Softwood frame, site-fabricated
 - 5.2. Wall panels: Softwood grounds, as panel manufacturer's recommendations
6. Flashgap panels: Manufacturer's standard
7. Skirting: In solid grade laminate to match
8. Pattressing:: Provide additional plywood pattressing locally within the subframe to support wall-mounted fixtures (e.g., sanitaryware, dispensers, handrails), in accordance with load requirements and manufacturer's guidance. Coordinate locations with M&E drawings.
9. Other requirements: 3mm solid grade laminate backing board to cover framework before fixing panels - colour to match panels. Steel clip system (Keku clips or Kemmlit concealed lift-off brackets) securely attached to timber subframe. Lift-off panels, lockable or non-lockable, as specified.

180 Duct panel support framing– site-fabricated softwood

1. Description: Treated softwood timber, site-assembled off the substrate, spaced to suit panel fixings and loadings.
2. Framing: Softwood, free from decay and active insect attack and with no knots wider than half the width of the section.
 - 2.1. Finished size: As panel manufacturer's recommendations
 - 2.2. Moisture content at time of fixing (maximum): 18%.
 - 2.3. Spacing (centres): As panel manufacturer's recommendations
 - 2.4. Method of fixing: As panel manufacturer's recommendations
3. Treatment: As section Z12 and Wood Protection Association Commodity Specification FR3, Type HR (Humidity-resistant)

210 Samples

1. General: Before placing orders submit representative samples of the following: Panel and door material and colours.
2. Delivered materials/ products: To match samples.

250 Installation

1. Programming: Do not install cubicles or duct/ wall panels before building is weathertight, wet trades have finished their work, wall and floor finishes are complete, and the building is well dried out.

2. Accuracy: Set out to ensure frames and/ or panels and doors are plumb, level and accurately aligned.
3. Modifications: Do not cut, plane or sand prefinished components except where shown on drawings.
4. Fixing: Secure components using methods and fasteners recommended by the cubicle/ panel manufacturer. Prevent pulling away, bowing or other distortions to frames, panels and doors.
5. Moisture and thermal movement: Make adequate allowance for future movement.

Ω End of Section

L10 Windows/ rooflights/ screens/ louvres

Clauses

To be read with Preliminaries/ general conditions

1. To be read with preliminaries/ general conditions.

General

115 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.
 - 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: In accordance with [UK Timber Procurement Policy \(UKTPP\)](#), i.e. [FSC](#), [GiB](#) or [PEFC](#)
 - 3.1. Other evidence: None

120 Pre-construction survey

1. Procedure: Before starting work on designated items take site dimensions, record on shop drawings and use to ensure accurate fabrication.
2. Designated items: Entrance screens and glazing package
3. Primary support structure: Carry out survey sufficient to verify that required accuracy and security of erection can be achieved.
4. Timing: Before fabrication.

140 Control samples

1. [Procedure](#)
 - 1.1. Finalize component details.
 - 1.2. Fabricate one of each of the following designated items as part of the quantity required for the project.
 - 1.3. Obtain approval of appearance and quality before proceeding with manufacturer of the remaining quantity.
2. Designated items: Entrance Screen

Products

260 Wood windows

1. Description: New window to match existing
2. Standard: Non-fire-rated windows to [BS EN 14351-1](#) and [BS 644](#)
3. Exposure category to BS 6375-1/ design wind load: 1200 Pa
4. Operation and strength characteristics: To [BS 6375-2](#).
5. Timber: Generally to [BS EN 942](#).
 - 5.1. Species: European oak to match existing

6. Appearance Class: J2 for glazing beads, drip mouldings, etc. J30 or better for all other members. Finger jointing and knots on arrises not permitted where exposed to view.
7. Moisture content on delivery: 12–19%.
8. Preservative treatment: Manufacturer's standard
9. Finish as delivered: Full stain system, as [section M60](#)
10. Thermal performance (U-value maximum): Manufacturer's standard
11. Acoustic performance rating: Manufacturer's standard
12. Glazing details: Refer to drawings
13. Beading: Refer to drawings
14. Ironmongery/ accessories: To match existing
15. Fixing: Stainless steel fixings. All fixings recessed but not countersunk. Screw heads concealed with pellets finished flush with frame and from timber to match frame material and finish.
16. Other requirements: Side panels made to match existing

310 Steel windows

1. Standard: Non-fire-rated and/ or non-smoke-rated windows to [BS EN 14351-1](#) and [BS 6510](#)
2. Manufacturer: MHB or equal approved
 - 2.1. Product reference: SL30-ISO
3. Finish as delivered: Polyester powder coated
4. Thermal performance (U-value maximum): Manufacturer's standard
5. Acoustic performance rating: Manufacturer's standard
6. Glazing details: Internal: Single Pane
External: Double Pane
7. Beading: Internal
8. Ironmongery/ accessories: Security glazing clips and manifestation
9. Fixing: Built as clause 781

Execution

710 Protection of components

1. General: Do not deliver components to site that cannot be installed immediately or placed in clean, dry-floored and covered storage.
2. Stored components: Stack them vertically or near-vertically on level bearers, separated with spacers to prevent damage by and to projecting ironmongery, beads, etc.

730 Priming/ sealing

1. Wood surfaces inaccessible after installation: Prime or seal as specified before fixing components.

750 Building in

1. General: Not permitted unless indicated on drawings.
 - 1.1. Brace and protect components to prevent distortion and damage during construction of adjacent structure.

760 Replacement window installation

1. Standard: In accordance with [BS 8213-4](#).

765 Window installation generally

1. Installation: Into prepared openings.
2. [Gap between frame edge and surrounding construction](#)
 - 2.1. Minimum: 3mm

2.2. Maximum: 10mm

3. Distortion: Install windows without twist or diagonal racking.

770 Damp-proof courses in prepared openings

1. Location: Ensure correct positioning in relation to window frames. Do not displace during fixing operations.

780 Fixing of wood frames

1. Standard: As [section Z20](#).

2. Fasteners: Stainless steel wood screws

2.1. Spacing: When not pre-drilled or specified otherwise, position fasteners not more than 150 mm from ends of each jamb, adjacent to each hanging point of opening lights, and at maximum 450 mm centres.

781 Fixing of steel frames

1. Standard: As [section Z20](#).

2. Fasteners: 25 x 3 x 150 mm galvanized carbon steel frame cramps

2.1. Spacing: When not pre-drilled or specified otherwise, position fasteners not less than 50 mm and not more than 190 mm from ends of each jamb, adjacent to each hanging point of opening lights and at maximum 900 mm centres.

790 Fire-resisting frames

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

800 Backfilling of steel frame sections

1. Windows fixed direct into openings: After fixing, fill back of steel frame with waterproof cement fillet.

810 Sealant joints

1. Sealant

1.1. Manufacturer: Submit proposals

1.1.1. Product reference: Submit proposals

1.2. Colour: To match frame

1.3. Application: As [section Z22](#) to prepared joints. Finish triangular fillets to a flat or slightly convex profile.

820 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

General

112 Timber procurement

1. Timber (including timber for wood-based products): Obtain 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: UK Timber procurement policy Category A evidence certification scheme.
 - 3.1. Other evidence: None

115 Fire-resisting and smoke control pedestrian doors/ door assemblies/ doorsets

1. UKCA/ UKNI/ CE marked fire-resisting and smoke control pedestrian doorsets: To BS EN 16034 and in conjunction with BS EN 13241, BS EN 14351-1 and BS EN 14351-2.
2. Door products: As defined in BS EN 12519.
3. Components, assemblies or sets will be marked to the relevant UKCA/ UKNI/ CE marking European product standard (hEN), national product standard and/ or third-party certification rating.

120 Non-fire-resisting pedestrian doors/ door assemblies/ doorsets

1. Evidence: Provide certified evidence, in the form of a product conformity certificate or engineering assessment, that each pedestrian door/ doorset/ assembly supplied will comply with the specified requirements to [BS EN 14351-1](#). Such certification must cover door and frame materials, glass and glazing materials and their installation, essential and ancillary ironmongery, hinges and seals.
2. Components and assemblies: Marked to the relevant UKCA/ UKNI/ CEI marking European product standard (hEN), national product standard and/ or third-party certification rating.

150 Site dimensions

1. Procedure: Before starting work on designated items take site dimensions, record on shop drawings and use to ensure accurate fabrication.
2. Designated items: All external doorsets and internal doorsets within existing fabric

170 Control samples

1. [Procedure](#)
 - 1.1. Finalize component details.
 - 1.2. Fabricate one of each of the following designated items as part of the quantity required for the project.
 - 1.3. Obtain approval of appearance and quality before proceeding with manufacture of the remaining quantity.
2. Designated items: Automatic hinged door system and steel framed doors

Products

215 External Panelled Matchboarded Door

1. Description: Painted external timber panel door
2. Standard:: BS 6375-1:2009
3. Manufacturer: Submit proposals
 - 3.1. Product reference: Submit proposals
4. Door leaf:
5. Core: Engineered laminated timber core, suitable for external exposure.
6. Thickness: 44mm
7. Facings: Weatherboarding panels with external grade paint finish
8. Lippings: Veneered, concealed to match face
9. Finish as delivered: Prepared and primed, as section M60
10. [Frame and architraves](#)
 - 10.1. Type: Single hinged on concealed hinges
11. Wood species: External-grade hardwood, FSC or PEFC certified.
12. Finish as delivered: Prepared and primed, as section M60
13. Preservative treatment: Not Required
14. Glazing/ infill details: Not applicable
 - 14.1. Manifestation: Not required
15. Beading: Not required
16. Ironmongery: As per Ironmongery Schedule
17. As ironmongery schedule
18. Thermal performance (U-value maximum): Manufacturer's standard
19. Other requirements: None
20. Fixing: Factory fitted.

280 Doors

1. Description: Steel framed
2. Manufacturer: MHB or equal approved
 - 2.1. Product reference: SL30-ISO
3. Finish as delivered: Polyester powder-coated to BS EN 12206-1 with anodic finish
4. Glazing/ infill details: Double glazing
 - 4.1. Manifestation: Required
 - 4.2. Beading: Internal
5. [Fire performance](#)
 - 5.1. Fire resistance: Manufacturer's standard
 - 5.2. Smoke leakage: Manufacturer's standard
 - 5.3. Reaction to fire: Not required
6. Ironmongery: As ironmongery schedule
7. Thermal performance (U-value maximum): Manufacturer's standard
8. Other requirements: None

281 Doors

1. Description: Steel framed pivot door
2. Manufacturer: Submit proposals
 - 2.1. Product reference: Submit proposals
3. Finish as delivered: Polyester powder-coated to BS EN 12206-1 with anodic finish

4. Glazing/ infill details: Clear single glazing
 - 4.1. Manifestation: Required
 - 4.2. Beading: Internal
5. Fire performance
 - 5.1. Fire resistance: Manufacturer's standard
 - 5.2. Smoke leakage: Manufacturer's standard
 - 5.3. Reaction to fire: Not required
6. Ironmongery: As ironmongery schedule
7. Thermal performance (U-value maximum): Manufacturer's standard
8. Other requirements: None

282 Doors

1. Description: External steel framed
2. Manufacturer: MHB or equal approved
 - 2.1. Product reference: SL30-ISO
3. Finish as delivered: Polyester powder-coated to BS EN 12206-1 with anodic finish
4. Glazing/ infill details: Double glazing
 - 4.1. Manifestation: Required
 - 4.2. Beading: Internal
5. Fire performance
 - 5.1. Fire resistance: Manufacturer's standard
 - 5.2. Smoke leakage: Manufacturer's standard
 - 5.3. Reaction to fire: Not required
6. Ironmongery: As ironmongery schedule
7. Thermal performance (U-value maximum): Manufacturer's standard
8. Other requirements: Automated opening operated by push button

410 Wood doorsets

1. Description: FD30 Flush Timber Door
2. Standard:: Door assembly fire integrity BS 476-22.
3. Manufacturer: Forza Doors Limited or equal approved
 - 3.1. Product reference: FD30 Flush Door Frame
4. Door leaf:
5. Core: Solid core
6. Thickness: 44mm
7. Facings: Primed
8. Lippings: Veneered, concealed to match face
9. Finish as delivered: Prepared and primed, as section M60
10. Frame and architraves
 - 10.1. Type: Flush
11. Wood species: Hardwood (Min density 450 Kg/m³) to comply with performance and appearance required
12. Finish as delivered: Prepared and primed, as section M60
13. Preservative treatment: Not Required
14. Glazing/ infill details: Not required
 - 14.1. Manifestation: Not required
15. Beading: Not required

16. Ironmongery: As per Ironmongery Schedule
17. As ironmongery schedule
18. Perimeter seals: Fire and smoke seal.
19. Fire performance
 - 19.1. Fire resistance: To BS 476-22, 30 minutes.
 - 19.2. Smoke leakage: To BS 476-31-1.
 - 19.3. Reaction to fire: To BS 476-7.
20. Thermal performance (U-value maximum): Manufacturer's standard
21. Other requirements: Back-to-back doorframes where required to comply with performance and appearance required.
22. Fixing: Factory fitted.

411 Wood doorsets

1. Description: Internal Hygienic to WCs
2. Manufacturer: Submit proposals
 - 2.1. Product reference: Submit proposals
3. Door leaf: Single leaf
4. Core: Manufacturer's choice
5. Thickness: 44mm
6. Facings: Manufacturer's Standard
7. Lippings: Concealed lippings to long edges
8. Finish as delivered: Prepared and primed, as section M60
9. Frame and architraves
 - 9.1. Type: Frameless to top and base. 3-part timber doorframe.
10. Finish as delivered: Prepared and primed, as section M60
11. Preservative treatment: Required
12. Beading: Not required
13. Ironmongery: As ironmongery schedule
14. Perimeter seals: Acoustic seal
15. Other requirements: Self closing on soft close hinges
16. Fixing: Factory fitted

412 Wood doorsets

1. Description: FD30 Timber Door
2. Standard:: Door assembly fire integrity BS 476-22.
3. Manufacturer: Forza Doors Limited or equal approved
 - 3.1. Product reference: FD30 3-Part Door Frame
4. Door leaf:
5. Core: Solid core
6. Thickness: 44mm
7. Facings: Primed
8. Lippings: Veneered, concealed to match face
9. Finish as delivered: Prepared and primed, as section M60
10. Frame and architraves
 - 10.1. Type: 3-Part Door Frame
11. Wood species: Hardwood (Min density 450 Kg/m³) to comply with performance and appearance required
12. Finish as delivered: Prepared and primed, as section M60

13. Preservative treatment: Not Required
14. Glazing/ infill details: Clear fire-resisting glazing - refer to door type.
 - 14.1. Manifestation: Not required
15. Beading: Not required
16. Ironmongery: As per Ironmongery Schedule
17. As ironmongery schedule
18. Perimeter seals: Fire and smoke seal.
19. Fire performance
 - 19.1. Fire resistance: To BS 476-22, 30 minutes.
 - 19.2. Smoke leakage: To BS 476-31-1.
 - 19.3. Reaction to fire: To BS 476-7.
20. Thermal performance (U-value maximum): Manufacturer's standard
21. Other requirements: None
22. Fixing: Factory fitted.

413 Wood doorsets

1. Description: FD30 Recessed Timber Door
2. Standard:: Door assembly fire integrity BS 476-22.
3. Manufacturer: Forza Doors Limited or equal approved
 - 3.1. Product reference: FD30 Double Action Door Frame
4. Door leaf:
5. Core: Solid core
6. Thickness: 44mm
7. Facings: Primed
8. Lippings: Veneered, concealed to match face
9. Finish as delivered: Prepared and primed, as section M60
10. Frame and architraves
 - 10.1. Type: Double Action Door Frame
11. Wood species: Hardwood (Min density 450 Kg/m³) to comply with performance and appearance required
12. Finish as delivered: Prepared and primed, as section M60
13. Preservative treatment: Not Required
14. Glazing/ infill details: Clear fire-resisting glazing - refer to door type.
 - 14.1. Manifestation: Not required
15. Beading: Not required
16. Ironmongery: As per Ironmongery Schedule
17. As ironmongery schedule
18. Perimeter seals: Fire and smoke seal.
19. Fire performance
 - 19.1. Fire resistance: To BS 476-22, 30 minutes.
 - 19.2. Smoke leakage: To BS 476-31-1.
 - 19.3. Reaction to fire: To BS 476-7.
20. Thermal performance (U-value maximum): Manufacturer's standard
21. Other requirements: None
22. Fixing: Factory fitted.

420 Purpose Made Joinery – MR MDF Units

1. Description: Factory-fabricated MDF joinery including cupboard carcasses, doors, and adjustable internal shelving for fixed furniture installations.
2. Manufacturer: Contractors choice
3. Certification: MDF to BS EN 622-5, Grade Type MDF.H2 (moisture resistant).
4. Standard: All materials and components to comply with BS 1186-2.
5. Door leaf: Moisture-resistant MDF, 18–22 mm thick, single-piece with square edges. Melamine facing.
6. Carcassing:: Moisture-resistant MDF, thickness 18 mm
7. Back panels:: Moisture-resistant MDF, thickness 6 mm. Rebated or housed as appropriate.
8. Shelving:: Moisture-resistant MDF, 18 mm thick. Allow for 4no. per unit.
9. Adjustable shelving system:: Shelf pin holes pre-drilled at 32 mm centres, fitted with nickel-plated adjustable shelf studs.
10. Finish:: Fully edge-sealed and lacquered. Clear finish.
11. Finish as delivered: Full factory finish
12. Preservative treatment: Not required
13. Beading: Not required
14. Ironmongery: Doors hung using concealed, adjustable soft-close hinges.
15. Perimeter seals: Not required
16. Other requirements: Kick to match fronts
17. Fixing: Plugged and screwed

450 External ASHP Plant Enclosure Doorset

1. Description: External Steel and Fixed Panel Doorset
2. Standard:: BS 1627
3. Manufacturer: Submit proposals
 - 3.1. Product reference: Submit proposals
4. Door leaf:
5. Core: Submit proposals
6. Thickness: To manufacturers standard
7. Facings: Metal
8. Fixed Panels: Metal
9. Finish as delivered: Anodic Powder Coated
10. [Frame and architraves](#)
 - 10.1. Type: Single leaf, outward opening steel doorset
Fixed Panel
Complete with frame, leaf, ironmongery, seals, threshold and all fixings
11. Finish as delivered: Anodic Powder Coated
12. Preservative treatment: Not Required
13. Glazing/ infill details: Not applicable
 - 13.1. Manifestation: Not required
14. Beading: Not required
15. Ironmongery: As manufacturers standard
16. As ironmongery schedule
17. Thermal performance (U-value maximum): Manufacturer's standard
18. Other requirements: Rigid wire mesh infill to soffit. Powder coated to match.
19. Fixing: Supported on proprietary steel framing system

480 Doorsets

1. Description: Metal doors to breakout space
2. Manufacturer: Selo or equal approved
 - 2.1. Product reference: Quadra+
3. Door leaf: Refer to drawings
 - 3.1. Finish as delivered: Textured, no wax, dead matt powder-coated finish to receive paint finish.
4. Frame and architraves: Concealed
 - 4.1. Finish as delivered: Textured, no wax, dead matt powder-coated finish to receive paint finish.
5. Glazing/ infill details: Not applicable
 - 5.1. Manifestation: Not applicable
 - 5.2. Beading: Not required
6. Ironmongery: Fully concealed lock
7. Perimeter seals: Fire and smoke seal. Intumescent seal integral with frame for fire stopping to structural opening.
8. Fire performance
 - 8.1. Fire resistance: E120 to BS EN 1634-1.
 - 8.2. Smoke leakage: Manufacturer's standard
 - 8.3. Reaction to fire: To [BS EN 13501-1](#), Class B or better
9. Other requirements: None
10. Fixing: As manufacturers guidance

545 Sliding stacking panel partitions

1. Description: Acoustic Moveable Wall
2. Manufacturer: Style - Moveable Partition Specialists or equal approved
 - 2.1. Product reference: Dorma Variflex
3. Performance: Acoustic performance: 57dB laboratory rating
4. Operation: Power assisted. Spring loaded top and bottom mechanical seals. Seals are operated by means of a removable 'crank' handle and engaged by a winding mechanism. End panel with vertical telescopic seal.
 - 4.1. Seal pressure: 1500 N (minimum)
5. Dimensions (nominal)
 - 5.1. Structural opening size: Refer to drawing
 - 5.2. Panel
 - 5.2.1. Width: Refer to drawing
 - 5.2.2. Height: Refer to drawing
 - 5.2.3. Thickness: Refer to drawing
6. Track system
 - 6.1. Head track: SmartTrack.
 - 6.1.1. Finish: Powder coated RAL to Architects guidance
 - 6.2. Floor track: Not required
 - 6.3. Parking position: End stacked, centred on track
 - 6.4. Wall jamb/ abutments: An acoustic baffle must be installed within any ceiling or floor void, as a minimum to the same achieved acoustic rating as the moveable wall laboratory test certificate.
7. Panels
 - 7.1. Construction: Non-deflecting steel tube frame complete with independent aluminium edge profiles.
 - 7.2. Finish as delivered: Fabric wrapped

7.3. Joint detail: Aluminium with magnetic sealing strips.

7.3.1. Finish: Polyester powder coated to clients choice.

- 8. Vision panels: Required - refer to drawings
- 9. Pass doors: Required - refer to drawings
- 10. Ironmongery: As supplied
- 11. Junctions/ corners: Not applicable
- 12. Glass manifestation: Not applicable
- 13. Other requirements: None

Execution

710 Protection of components

- 1. General: Do not deliver to site components that cannot be installed immediately or placed in clean, dry, floored and covered storage.
- 2. Stored components: Stacked on level bearers, separated with spacers to prevent damage by and to projecting ironmongery, beads, etc.

730 Priming and sealing

- 1. Wood surfaces inaccessible after installation: Primed or sealed as specified before fixing components.

750 Fixing doorsets

- 1. Timing: After associated rooms have been made weathertight and the work of wet trades is finished and dried out.

760 Building in

- 1. General: Not permitted unless indicated on drawings.

780 Damp-proof courses in prepared openings

- 1. Location: Correctly positioned in relation to door frames. Do not displace during fixing operations.

790 Fixing of wood frames

- 1. Spacing of fixings (frames not predrilled): Maximum 150 mm from ends of each jamb and at 600 mm maximum centres.

800 Fixing of loose thresholds

- 1. Spacing of fixings: Maximum 150 mm from each end and at 600 mm maximum centres.
- 2. Position and level: Ensure threshold is level and square to door frame and leaf.
- 3. Sealing: Ensure that voids are minimal and are sealed adequately.

809 Fire-resisting and smoke control doors/ door assemblies/ doorsets/ roller shutters and curtains – accredited installer

- 1. Installation: By a firm currently registered under a third-party-accredited fire door installer scheme in accordance with instructions supplied with the product conformity certificate, test report or engineering assessment.

810 Fire-resisting and smoke control doors/ door assemblies/ doorsets/ roller shutters and curtains – contractor-installed

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

811 Fire-resisting and smoke control doorsets, industrial, commercial and garage doors

- 1. Installation: By manufacturer or their approved installers, in accordance with requirements of [BS EN 16034](#) and in conjunction with [BS EN 13241](#), including the Declaration of Performance (DoP) certification for the UKCA/ UKNI/ CE marked doorset.

820 Sealant joints

1. Sealant

- 1.1. Manufacturer: Submit proposals
 - 1.1.1. Product reference: Submit proposals
- 1.2. Colour: Black
- 1.3. Application: As section Z22 to prepared joints. Triangular fillets finished to a flat or slightly convex profile.

830 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.

840 Fixing ironmongery to fire-resisting door assemblies

- 1. General: All items fixed in accordance with door leaf manufacturer's recommendations ensuring that integrity of the assembly, as established by testing, is not compromised.
- 2. Holes for through fixings and components: Accurately cut.
 - 2.1. Clearances: Not more than 8 mm unless protected by intumescent paste or similar.
 - 2.2. Lock/ latch cases for fire doors requiring >60 minutes integrity performance: Coated with intumescent paint or paste before installation.

850 Location of hinges

- 1. Primary hinges: Where not specified otherwise, positioned with centre lines 250 mm from top and bottom of door leaf.
- 2. Third hinge: where specified, positioned with centre line 250 mm below centre line of top hinge .
- 3. Hinges for fire-resisting doors: Positioned in accordance with door leaf manufacturer's recommendations.

860 Installation of emergency and panic exit devices

- 1. Standard: Emergency exit devices in accordance with BS EN 179.

Ω End of Section

L30

Stairs/ ladders/ walkways/ handrails/ balustrades

Preliminary information/ requirements

107 Completion of design

1. Description: Stairs, and external ramps
2. Requirement: Complete the detailed design to satisfy specified performance criteria and coordinate with the detailed design of related and adjacent work.
 - 2.1. Standard: Straight stairs and winders to BS 5395-1
3. Structural requirements: As section B50.
4. Fire performance: As section B05.
5. Additional requirements: Mock-ups to be fabricated for approval prior to fabrication
6. Design and production information: Shop drawings to be submitted for comment and approval by architect and structural engineer. All welds to be located and identified on fabrication shop drawings.
7. Timing of submissions: Shop drawings to be approved prior to fabrication of Control Samples. Control Samples to be approved before fabrication of final elements.

130 Site dimensions

1. Procedure: Before starting work on designated items take site dimensions, record on shop drawings and use to ensure accurate fabrication.
 - 1.1. Designated items: Stairs, ramps and walkways

Components

250 Metal stairs

1. Description: Metal staircase with timber handrails and polished concrete treads.
2. Appearance: Refer to drawings
3. Metal thickness: To structural engineers information
4. Component materials/ grades
 - 4.1. Treads: Aluminum honeycomb panel with polished concrete topping and metal strip inset nosing to match finish of guarding posts
 - 4.1.1. Slip resistance value of integral tread - water wet (minimum): PTV of 40 to [BS EN 16165](#)
 - 4.1.2. Slip resistance value of integral nosing - water wet (minimum): PTV of 40 to [BS EN 16165](#)
 - 4.1.3. Colour of integral nosing: LRV to BS 8493 contrast of 30 (minimum) with tread. Submit proposals
 - 4.2. Risers: Exposed metal plate with applied finish
 - 4.3. Strings: Mild steel with clear stoved lacquer finish.
 - 4.4. Guarding
 - 4.4.1. Posts: Mild steel with clear stoved lacquer finish.
 - 4.4.2. Handrails: Steel plate handrail with timber oak wrap as per drawn information
 - 4.4.2.1. Finish: Osmo hard wearing stain
 - 4.5. Edges:: All steel corners & edges are to be ground down to, so as to smooth out sharp edges.
 - 4.6. Welding:: TIG weld to visible elements: handrails, balustrade connections, decorative joints.

MIG weld to hidden structural elements: stringers, supports, under-tread frames.

All welding to be agreed with architect after submitting control samples of welding type and quality.

- 4.7. Mechanical fixings: Concealed mechanical fixings, countersunk hex head bolts or proprietary hidden cleat systems, located to minimise visual impact. All fixings to be fully concealed within the structure or behind cladding elements unless otherwise approved.
- 4.8. Joints: To be agreed with Architect through shop drawings and approved prior to fabrication
5. Finish as delivered: Mild steel with clear stoved lacquer finish to all metal elements.
6. Workmanship: To section Z11.
7. Other requirements: Steel must be rust free, and sourced in person to check all sheets. Steel is bought by the pack it should be assumed that the top and bottom sheet in a pack are to be discarded, top and bottom sheets either show signs of weathering or are scratched from handling by fork lift truck.

Mild steel sheets to be sourced direct from mill, to be kept horizontal and under cover from elements prior to fabrication, all care must be taken to reduce any rusting / weathering to steel. 6mm steel to have natural heat roll marks, angles and flats to be dark black mill finish.

460 Walkways

1. Description: Pedestrian Grille
2. Manufacturer: Lang and Fulton or equal approved
3. Product reference:

EF – 11 x 76.
4. Component material, grade and finish as delivered
 - 4.1. Flooring: Mild steel S235JR - Hot-dip galvanized and polyester powder coated to BS EN ISO 1461 and BS EN 13438, to any RAL or BS colour.
 - 4.1.1. Slip resistance value of finish - water wet (minimum): PTV of 40 to [BS EN 16165](#)
 - 4.2. Edge protection: 100 mm as BS 8300-2
5. Pattern: Flat bearing bars and round transverse bars, heel-proof.
6. Size: Refer to drawings
7. Fixing: Gratings are supplied with fixing clips to clamp the panel to the substructure.
8. Workmanship: To section Z11
 - 8.1. Joinery: Not applicable
 - 8.2. Metalwork: To section Z11
9. Reaction to fire: Manufacturer's standard
10. Other requirements: None

550 Purpose-made balustrades

1. Description: External mild steel balusters
2. Size: Refer to drawings
3. Component material, grade and finish as delivered
 - 3.1. Guarding: Low-carbon steel - galvanized
 - 3.2. Handrails: Hardwood with external grade lacquer
 - 3.2.1. Lower handrail: Hardwood with external grade lacquer
 - 3.3. Lacquer: Submit proposals
4. Finish: T-Wash chemical solution
5. Workmanship
 - 5.1. Joinery: Not applicable
 - 5.2. Metalwork: To section Z11
6. Reaction to fire: Manufacturer's standard
7. Other requirements: None

8. Fixing: As per structural engineers information
- 8.1. Centres: As per structural engineers information

Installation

610 Moisture content

1. Temperature and humidity: Monitor and control internal conditions to achieve specified moisture content in wood components at time of installation.

620 Priming/ Sealing/ Painting

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

630 Corrosion protection of dissimilar materials

1. Components/ substrates/ fasteners of dissimilar materials: Isolate using washers/ sleeves or other suitable means to separate materials to avoid corrosion and/ or staining.

640 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 finishes: Substrates to be even, dry, sound and free from contaminants. Make good substrate surfaces and prepare/ prime as finish manufacturer's recommendation before application.

670 Installation of tread inserts/ nosings

1. Treads: Fully cured, sound and level.
2. Fixing
 - 2.1. Location/ position: Centred, aligned to step nose edge, with ends ??? mm from stringline
 - 2.2. Fixings: As manufacturer's recommendations
 - 2.2.1. Centres: As manufacturer's recommendations

Completion

910 Inspection

1. Timing: Two weeks after request by contract administrator
2. Period of notice (minimum): Five working days

915 Slip resistance testing

1. Surfaces to be tested: L30/250
 - 1.1. Surface condition: Dry and wet
2. Timing: As agreed with contract administrator
3. Period of notice (minimum): Three working days
4. Test standard: To BS EN 16165
 - 4.1. Testing authority: A UKAS-accredited laboratory
 - 4.2. Witnessing/ Certification: Arrange for tests to be witnessed/ certified by: Contract administrator.
 - 4.3. Report: Submit.
 - 4.3.1. Format: As required under BS 7976

920 Documentation

1. Contents

- 1.1. Copies of structural design calculations/ test reports.
 - 1.2. General product information.
 - 1.3. Installation information.
 - 1.4. Inspection and maintenance reports.
2. Number of copies: Two
 3. Submission: Two weeks after request by contract administrator

Ω End of Section

L35

Fixed utilitarian access systems

General

130 Ladder system

1. Description: Vertical Height Access Ladder System
2. Method of provision: Proprietary prefabricated
3. Dimensions: Refer to drawings
4. Basic component material: Aluminium
5. Rungs: Submit proposals
6. Stiles: Submit proposals
7. Landings/ platforms: Not required
8. Hoops: Submit proposals
9. Assembly connectors: Submit proposals
10. Fixing to superstructure: Submit proposals
11. Accessories: Fall arrest and vertical telescopic rail. Brackets for fall arrest system, as section N25

System performance

212 Contractor's design

1. Description: For ladder systems to the roof
2. Design responsibility: Determine section sizes and strengths and type, sizes and numbers of fixings
3. Structural requirements:
 - 3.1. Generally: As section B50.
 - 3.1.1. Modifications: None
 - 3.2. Design: Complete in accordance with the designated code of practice to satisfy specified performance criteria.
4. Functional requirements: Ladders for access to tall structures: To BS 4211
5. Additional requirements: None
6. Design and production information: As Preliminaries section A31
7. Timing of submissions: As Preliminaries section A31
8. Proposals: Submit drawings, technical information, calculations and manufacturers' literature.

Products - Not Used

Fabrication

510 Fabrication generally

1. Shop drawings: Submit.

Execution

620 Execution generally

1. Structural members: Do not subject to nondesign loading. Do not modify, cut, notch or make unspecified holes.
2. Frameworks: Assemble and brace, including temporary members required for installation.
 - 2.1. Temporary support: Do not use access systems as temporary support or strutting for other work.
3. External durability of fastenings: Corrosion resistant material or with a corrosion resistant finish.
4. Bolted joints
 - 4.1. Contact between dissimilar metals: Avoid.

- 4.2. Bolts and washers: Select types, sizes and quantities of fasteners or packings and spacings to retain supported components without distortion or loss of support.
5. Welded joints
 - 5.1. Standards
 - 5.1.1. Aluminium alloys: TIG or MIG welding to BS EN 1011-4.
 - 5.1.2. Carbon steel: Metal arc welding to BS EN 1011-1 and -2.
 - 5.1.3. Stainless steel: TIG welding to BS EN 1011-3.
 - 5.2. Surfaces to be jointed: Clean.
 - 5.3. Tack welds: Use only for temporary attachment.
 - 5.4. Traces of flux residue, slag and weld spatter: Remove.
 - 5.5. Surface of welds: Grind smooth.
 - 5.6. Joints: Fully bonded with no holes or cracks.
6. Finished components
 - 6.1. Free: From distortion, cracks, burrs and sharp arrises.
 - 6.2. Corner junctions of identical sections: Mitre.
 - 6.3. Handrails: Smooth and continuous, with no sharp edges.

660 Anchoring

1. Fixing positions: Coordinate location of holding down bolts and wall fixings with services fixing positions.
2. Edge distance and spacing (minimum): Unless otherwise specified, locate anchors to permit the development of their full shear and pull out capacities

Completion

910 Cleaning

1. General: Clean surfaces and wipe down finishes.

920 Inspection

1. Notice for inspection (minimum): 5 days

930 Documentation

1. Operation and maintenance instructions: Submit.
2. Record drawings: Submit.

Ω End of Section

L37 **External stairs/ ramps/ handrails/ balustrades**

Clauses

Read in conjunction with Preliminaries and general conditions

General

110 External stair treads

1. Description: South moat stair
2. Type: Fabricated off site. Submit design and cost proposals.
3. Manufacturer: Lang and Fulton or equal approved
4. Product: AntiVertigo
5. Performance: As clause 210.
6. Base/ fabric: AntiVertigo Floor Grating in galvanized finish
7. Surface: Steel
 - 7.1. Finish: Hot-dip galvanizing to BS EN ISO 1461.
8. Unobstructed width: To manufacturers guidance
9. Accessories: Manufacturers standard

160 External balustrades

1. Description: To stair and ramp
2. System manufacturer: Submit proposals
3. Performance: To structural engineers specification
4. Guarding
 - 4.1. Material: Galvanized Hot Dipped Mild Steel
 - 4.2. Finish: T-Wash Chemical Solution
5. Size: Refer to drawings
6. Height (to upper surface of rail)
 - 6.1. Above pitch line: Refer to drawings
 - 6.2. Above landing: Refer to drawings
7. Accessories: Countersunk bolt fixings in finish to match

460 Walkways

1. Description: Pedestrian Grille
2. Manufacturer: Lang and Fulton or equal approved
3. Product reference:

EF – 11 x 76.
4. Component material, grade and finish as delivered
 - 4.1. Flooring: Mild steel S235JR - Hot-dip galvanized and polyester powder coated to BS EN ISO 1461 and BS EN 13438, to any RAL or BS colour.
 - 4.1.1. Slip resistance value of finish - water wet (minimum): PTV of 40 to [BS EN 16165](#)
 - 4.2. Edge protection: 100 mm as BS 8300-2
5. Pattern: Flat bearing bars and round transverse bars, heel-proof.
6. Size: Refer to drawings
7. Fixing: Gratings are supplied with fixing clips to clamp the panel to the substructure.
8. Workmanship: To section Z11
 - 8.1. Joinery: Not applicable

- 8.2. Metalwork: To section Z11
- 9. Reaction to fire: Manufacturer's standard
- 10. Other requirements: None

Design/ performance requirements - Not Used

Products - Not Used

Fabrication

510 Fabrication generally

- 1. Design: Complete the detailed design and obtain approval prior to commencing fabrication.
- 2. Shop drawings: Submit.
- 3. Structural calculations: Submit.
- 4. Frameworks: Assemble and brace, including temporary members required for installation.
- 5. Contact between dissimilar metals: Avoid.
- 6. Fixings: Fully bolt together. Tighten bolts.
- 7. Temporary support: Do not subject members to non-design loadings.

Execution

610 Loading

- 1. Site activities: Restrict, to ensure that design loads are not exceeded, or submit proposals for temporary supports.

640 Preservative-treated timber

- 1. Surfaces exposed by minor cutting and drilling: Treated by immersion or with two flood coats of a solution recommended for the purpose by main treatment solution manufacturer.
- 2. Heavily worked sections: Re-treat.

650 Installation generally

- 1. Fasteners: 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 finished work as temporary support or strutting for other work.
- 4. Applied finishes: Substrates to be even, dry, sound and free from contaminants. Make good substrate surfaces and prepare/ prime as finish manufacturer's recommendation before application.

662 Adverse weather

- 1. General: Do not use frozen materials and do not lay on frozen surfaces.
- 2. Working limits: Do not lay blocks/ dressings:
 - 2.1. Cement gauged mortars: When the air temperature is at or below 3°C and falling or below 1°C and rising (unless mortar has a temperature of not less than 4°C when laid and work is thoroughly protected).
 - 2.2. Hydraulic lime:sand mortars: When the air temperature is at or below 5°C and falling or below 3°C and rising.
- 3. Temperature of the work: Maintain above freezing until mortar has fully set.
- 4. Newly erected work: Protect from precipitation; Prevent rapid drying in hot conditions.
- 5. Remedial work: Rake out and replace mortar damaged by frost.
 - 5.1. Damaged work: Rebuild.

680 Site painting and staining

- 1. Timing: Prepare surfaces and apply finishes as soon as possible after installing components.

Completion

910 Inspection

1. Timing: Two weeks after request by contract administrator.
2. Period of notice (minimum): Three working days.

915 Slip resistance testing

1. Surfaces to be tested: L37/ 110.
 - 1.1. Surface condition: Dry and wet.
2. Timing: As agreed with contract administrator.
3. Period of notice (minimum): Three working days.
4. Test standard: To BS [BS EN 16165](#).
 - 4.1. Testing authority: A UKAS-accredited laboratory.
 - 4.2. Witnessing/ certification: Arrange for tests to be witnessed/ certified by: Contract administrator.
 - 4.3. Report: Submit.
 - 4.3.1. Format: As required under [BS EN 16165](#).

920 Documentation

1. [Contents](#)
 - 1.1. Copies of structural design calculations/ test reports.
2. General product information.
 - 2.1. Installation information.
 - 2.2. Inspection and maintenance reports.
3. Number of copies: Two
4. Submission: Two weeks after request by contract administrator.

Ω End of Section

L40 General glazing

General requirements

150 Workmanship and positioning generally

1. Glazing generally: In accordance with BS 6262 series.
2. Integrity: Glazing must be wind and watertight under all conditions with full allowance made for deflections and other movements.
3. Dimensional tolerances: Panes/ sheets to be within +/-2 mm of specified dimensions.
4. **Materials**
 - 4.1. Compatibility: Glass/ plastics, surround materials, sealers, primers and paints/ clear finishes to be used together to be compatible. Avoid contact between glazing panes/ units and alkaline materials such as cement and lime.
 - 4.2. Protection: Keep materials dry until fixed. Protect insulating glass units and plastics glazing sheets from the sun and other heat sources.

151 Preparation

1. Surrounds, rebates, grooves and beads: Cleaned and prepared by others.

152 Preparation

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

155 Glass generally

1. Standards: To [BS 952-1](#) and the relevant parts of:
 - 1.1. [BS EN 572-9](#) for basic soda lime silicate glass.
 - 1.2. [BS EN 1748-1-1](#) for borosilicate glass.
 - 1.3. [BS EN 1748-2-1](#) for ceramic glass.
 - 1.4. [BS EN 1863-2](#) for heat-strengthened soda lime silicate glass.
 - 1.5. [BS EN 12150-2](#) for thermally toughened soda lime silicate safety glass.
 - 1.6. [BS EN 12337](#) for chemically strengthened soda lime silicate glass.
 - 1.7. [BS EN 13024-2](#) for thermally toughened borosilicate safety glass.
 - 1.8. [BS EN 14449](#) for laminated glass and laminated safety glass.
2. Panes/ sheets: Clean and free from obvious scratches, bubbles, cracks, rippling, dimples and other defects.
 - 2.1. Edges: Generally undamaged. Shells and chips not more than 2 mm deep and extending not more than 5 mm across the surface are acceptable if ground out.

Types of glazing

630 Manifestation

1. Description: For large format glazing
2. Product Certifications:: [BS EN 13501-1](#)
3. Manufacturer: Submit Proposals
 - 3.1. Product reference: Submit Proposals
4. Design: Historic Royal Palaces Logo as indicated in drawings
 - 4.1. Art work: Supplied by client
 - 4.2. Media: Scale drawings
5. Technique: Applied film
6. Material: Vinyl
7. Colour: Provide Samples for Architect Approval

8. Adhesive: Clear, pressure-sensitive
9. Verification: Sample of manifestation material provided for approval by Architect prior to placing order.

Ω End of Section

M10 Cement based levelling/ wearing screeds

Types of screed

130 Proprietary quick drying screeds

1. Description: Ultra Rapid Drying Screed Cement
2. Substrate: Refer to Floor Types Drawing
3. Screed manufacturer: Ardex UK Ltd
 - 3.1. Product reference: Ardex A 38 Ultra Rapid Drying Screed Cement
4. Fine aggregate:: 0-8mm screed sand.
5. Admixture:: Not permitted.
6. Compressive strength - 28 days:: 40.0 N/mm².
7. TensileStrength:: 5.5 N/mm².
8. Drying time:: See manufacturers guidance
9. Screed construction: Unbonded, as clause 280
Floating, as clause 290
 - 9.1. Reinforcement for crack control: Not required
10. Thickness
 - 10.1. Minimum: Minimum 15 mm (design thickness up to 40 mm) for bonded screeds.
Minimum 50 mm for unbonded screeds.
Minimum 75 mm for floating screeds (65 mm in lightly loaded (domestic) locations).
11. Mix
 - 11.1. Cement: As recommended by screed manufacturer
 - 11.2. Proportions: To manufacturer's recommendations.
12. Finish: Trowelled, as clause 540
 - 12.1. To receive: Refer to Floor Types Drawing
13. Other requirements: Movement joints
14. Standard:: To BS 8204, BS 5385 and BS 8000.
15. Preparation:: Ensure that the base slab is relatively smooth and flat. Some localised filling may be necessary, subject to survey, before the insulation is installed to ensure that it is flat and fully supported. Use ARDEX A 46 Rapid Hardening Mortar to enact repairs.
16. Notes: Day work joints should be cut vertical at a 90° angle and protected from damage. Adjacent mixes of screed should be fully bonded to the dry and hardened day joints, using ARDEX A 18 Slurry Bonding Agent with Colour Indicator.

Mix the ARDEX A 18 Bonding Agent with clean water to create a bonding slurry of creamy consistency and apply with a soft brush to the dry and hardened day joint, before placing the fresh screed. This should be performed when the bonding slurry is still wet.

131 Proprietary quick drying pre-blended screeds

1. Description: Ultra Rapid Drying Screed Cement
2. Substrate: Refer to Floor Types Drawing
3. Screed manufacturer: Ardex UK Ltd
 - 3.1. Product reference: Ardex A 38 MIX Ultra Rapid Drying Screed Cement
4. Fine aggregate:: Required
5. Admixture:: Not permitted.
6. Drying time:: See manufacturers guidance
7. Screed construction: Unbonded, as clause 280
Floating, as clause 290
 - 7.1. Reinforcement for crack control: Not required

8. Thickness

- 8.1. Minimum: Minimum 15 mm for bonded screeds.
Minimum 40 mm for unbonded screeds.
Minimum 75 mm for floating screeds (65 mm in lightly loaded (domestic) locations).

9. Mix

- 9.1. Cement: As recommended by screed manufacturer
- 9.2. Proportions: To manufacturer's recommendations.

10. Finish: Trowelled, as clause 540

- 10.1. To receive: Refer to Floor Types Drawing

11. Other requirements: Movement joints

12. Standard:: To BS 8204, BS 5385 and BS 8000.

13. Preparation:: To manufacturers guidance

14. Primers: To manufacturers guidance

160 Proprietary quick drying levelling screeds

- 1. Description: Rapid Drying High Flow Levelling And Smoothing Compound
- 2. Substrate: Refer to Floor Types Drawing
- 3. Screed manufacturer: Ardex UK Ltd
 - 3.1. Product reference: K 40 HB Rapid Drying High Flow Levelling And Smoothing Compound
- 4. Admixture:: Not permitted.
- 5. Compressive strength - 28 days:: 37.0 N/mm².
- 6. TensileStrength:: 9.5 N/mm²
- 7. Drying time:: See manufacturers guidance
- 8. Screed construction: Unbonded, as clause 280
Floating, as clause 290
 - 8.1. Reinforcement for crack control: Not required

9. Thickness

- 9.1. Nominal: 3mm

10. Mix

- 10.1. Cement: As recommended by screed manufacturer
- 10.2. Proportions: To manufacturer's recommendations.

11. Finish: Trowelled, as clause 540

- 11.1. To receive: Refer to Floor Types Drawing

12. Other requirements: Movement joints

13. Standard:: To BS 8204, BS 5385 and BS 8000.

14. Preparation:: Prime the dry screeds with ARDEX P 51 Concentrated Water-Based Primer and Bonding Agent, 1-part ARDEX P 51 Primer to 3 parts water.

195 Proprietary screeds to BS EN 13813

- 1. Description: Polished Concrete Topping
- 2. Substrate: As clause 130
- 3. Screed manufacturer: Ardex UK Ltd
 - 3.1. Product reference: PC-T 4 with ARMIS bespoke cement based pourable terrazzo system incorporating aggregate type and fraction to approved sample.
- 4. Primer: Primer ARDEX R3E Water based epoxy sand blinded with kiln dried quartz ~0.6mm
- 5. Screed construction: Fully bonded, as clause 260
- 6. Performance to BS EN 13813
- 7. Thickness

- 7.1. Nominal: 12mm \pm 3mm to accommodate substrate irregularities
- 8. Flatness/ Surface regularity class: SR1
- 9. Finish: Polished
- 10. Other requirements: Movement joints

Generally/ preparation

205 Design life of screeds

- 1. Duration: 50 years
 - 1.1. Subject to reasonable wear and tear.
- 2. Location: Refer to drawings
- 3. Condition of use: Subject to correct loading and traffic usage throughout duration.

210 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.

215 Surface hardness of substrates to receive polymer modified wearing screeds

- 1. General: Substrates must restrain stresses that occur during setting and hardening of wearing screeds.
- 2. Test for surface hardness: To BS EN 12504-2 using a rebound hammer with compliance values as follows:
 - 2.1. **Rebound hammer value (minimum)**
 - 2.1.1. Screed thickness 15 mm or less: 25.
 - 2.1.2. Screed thickness greater than 15 mm: 30.
- 3. Report: Submit details of areas where substrate surface hardness does not comply with these values.

220 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.
- 2. Standard: In accordance with BS 8204-3

250 Conduits under floating screeds

- 1. Haunching: Before laying insulation for floating screeds, haunch up in 1:4 cement:sand on both sides of conduits.

251 Conduits cast into or under screeds

- 1. Reinforcement: Overlay with reinforcement selected from:
 - 1.1. 500 mm wide strip of steel fabric to BS 4483, reference D49, or
 - 1.2. Welded mesh manufactured in rolls from mild steel wire minimum 1.5 mm diameter to BS 1052, mesh size 50 x 50 mm.
- 2. Placing reinforcement: Mid depth between top of conduit and the screed surface.
 - 2.1. Width of reinforcement (minimum): 300 mm.
- 3. Screed cover over conduit (minimum): 50 mm

255 Pipe ducts/ trunking

1. Preformed access ducts: Before laying screed, fix securely to substrates and level accurately in relation to finished floor surface.

260 Fully bonded construction

1. Preparation: Generally in accordance with BS 8204-1.
2. Removing mortar matrix: Shortly before laying screed, expose coarse aggregate over entire area of hardened substrate.
3. Texture of surface: Suitable to accept screed and achieve a full bond over complete area.
4. Bonding coat: Manufacturer's standard

270 Partially bonded construction

1. Preparation: Generally in accordance with BS 8204-1.
2. Substrate surface: Brushed finish with no surface laitance.
 - 2.1. Texture of surface: Suitable to accept screed and achieve a bond over complete area.
3. Bonding coat: Manufacturer's standard

280 Unbonded construction

1. Separation: Lay screed over a suitable sheet dpm or a separating layer.
2. Installation of separating layer: Lay on clean substrate. Turn up for full depth of screed at abutments with walls, columns, etc. Lap 100 mm at joints.

290 Floating construction

1. **Insulation**
 - 1.1. Type: Kingspan Kooltherm K103
 - 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 minimum 125 micrometres thick (500 gauge).
 - 2.2. Installation: Lay over insulation and turn up at perimeter abutments. Lap 100 mm at joints.

Batching/ mixing

302 Cements

1. Cement types: In accordance with BS 8204-1, clause 5.1.3.

305 Aggregates

1. Sand: To BS EN 13139.
 - 1.1. Grading limits: In accordance with BS 8204-1, Table B.1.
2. **Coarse aggregates for fine concrete levelling screeds**
 - 2.1. Standard: To BS EN 12620.
 - 2.2. Designation: 4/10.
3. Lightweight aggregates: In accordance with BS 8204-1, Annex A.

306 Proprietary polymer modified screeds

1. Cement types: In accordance with BS 8204-3.
2. Sand: To BS EN 13139:
 - 2.1. Grading limits: 0/2 mm (MP) category 1
3. Aggregates: In accordance with BS 8204-3.

307 Admixtures

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

310 Batching with dense aggregates

1. Mix proportions: Specified by weight.
2. Batching: Select from:
 - 2.1. Batch by weight.
 - 2.2. 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.

311 Batching with lightweight aggregates

1. Standard: In accordance with BS 8204-1, Annex A.
2. Mix proportions: Specified by volume.
3. Batching: Use accurate gauge boxes.

330 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. Mixes other than no-fines must be mixed 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.

335 In situ crushing resistance (ISCR)

1. Standards and category: In accordance with BS 8204-1, table 4.
 - 1.1. Testing of bonded and unbonded screeds: To Annex D.
 - 1.2. Testing of floating levelling screeds: To Annex E.

340 Adverse weather

1. Screeds surface temperature: Maintain above 5°C for a minimum of four days after laying.
2. Hot weather: Prevent premature setting or drying out.

Laying

345 Level of screed surfaces

1. Permissible deviation: (allowing for thickness of coverings) ± 5 mm from datum.

350 Screeding to falls

1. Minimum screed cover: Maintain at the lowest point.
2. Falls: Gradual and consistent.
 - 2.1. Gradient (minimum): Refer to drawings

351 Screeding to ramps

1. Screed cover: Maintain consistent screed depth to graduated substrate
2. Falls: Gradual and consistent.

355 Flatness/ Surface regularity of floor screeds

1. Standard: In accordance with BS 8204-1, Table 5.
2. Test: In accordance with BS 8204-1, Annex C.

3. Sudden irregularities: Not permitted.

365 Flatness/ Surface regularity of roof screeds

1. Sudden irregularities: Not permitted.
2. Deviation of surface: Measure from underside of a 2 m straightedge (between points of contact), placed anywhere on surface.
 - 2.1. Permissible deviation (maximum): 6 mm.

375 Compaction of screeds

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

382 Stair screeds

1. Construction: Fully bonded to treads, risers and landings.
2. Risers: Form using fine finish formwork.
3. Wearing screed surfaces: Make good with compatible cement:sand mix. Wood float. When hardened remove laitance.

392 General reinforcement

1. Steel fabric: To BS 4483.
 - 1.1. Type: A98
2. Installation: In accordance with BS 8204-1.

405 Joints in levelling screeds generally

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

435 Formed joints in wearing screeds

1. Temporary forms: Square edged with a steel top surface and in good condition.
2. Placing screed: Compact thoroughly at edges to give level, closely abutted joints with no lipping.

440 Crack inducing grooves in levelling screeds

1. Groove depth: At least half the depth of screed.
2. Cutting grooves: Straight, vertical and accurately positioned. Select from the following:
 - 2.1. Trowel cut as screed is laid.
 - 2.2. Saw cut sufficiently early after laying to prevent random cracking.

445 Crack inducing grooves in wearing screeds

1. Groove dimensions
 - 1.1. Depth: At least half the depth of wearing screed.
 - 1.2. Width: As narrow as possible
2. Cutting grooves: Straight, vertical and accurately positioned. Saw cut sufficiently early after laying to prevent random cracking.

450 Sealant for sawn joints in wearing screeds

1. Type: Two part polysulfide-based, colour to approval
2. Preparation and application: As section Z22.

Finishing/curing

510 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.

530 Smooth floated finish

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

540 Trowelled finish to levelling screeds

1. Floating: To an even texture with no ridges or steps.
2. Trowelling: To a uniform, smooth but not polished surface, free from trowel marks and other blemishes, and suitable to receive specified flooring material.

550 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.

560 Dewatered trowelled finish to wearing screeds

1. Dewatering: Immediately after compaction of wearing screeds, remove water using a vacuum process.
2. Floating: Without delay, power float to an even texture with no ridges or steps.
3. Trowelling: Successively trowel at intervals, applying sufficient pressure to close surface and give a uniform smooth finish free from trowel marks and other blemishes.

600 Power ground finish to wearing screeds

1. Floating: To an even surface with no ridges or steps. Immediately commence curing.
2. Grinding: When concrete is sufficiently hard for sand particles not to be torn from surface, remove 1 - 2 mm from surface to give an even glass-paper texture, free from blemishes and trowel marks.
3. Cleaning: Remove dust and wash down. Resume curing without delay.

650 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): Keep polyethylene sheeting in position 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.

680 Surface sealer to wearing screeds

1. Manufacturer: Ardex UK Ltd
 - 1.1. Product reference: Submit proposals
2. Preparation: Clean cured screed surface to remove dirt, grease, oil and other surface contaminants.
3. Moisture content of screed: As recommended by sealer manufacturer. Test relative humidity in accordance with BS 8203, Annex A if required to verify suitability to receive sealer.
4. Application: Evenly to dry surfaces using sufficient coats to form an effective seal but without a glossy finish.

690 Slip resistance testing of wearing screeds

1. Test

1.1. To BS 7976-1, -2 and -3 using a TRL Pendulum.

1.2. Make arrangements for test to be witnessed/ certified by: Consultant

2. Report: Submit. Include slip resistance values in the wet and dry states.

700 Abrasion testing of wearing screeds

1. Test method: To BS EN 13892-4.

Ω End of Section

M40 **Stone/ concrete/ quarry/ ceramic tiling/ mosaic**

Types of tiling/ mosaic

110 Wall Tiles

1. Description: Public WC Wall
2. Tiles: Glazed Ceramic
 - 2.1. Manufacturer/ Supplier: Johnson Tiles
 - 2.1.1. Product reference: MH10B
 - 2.2. Colour: Ivory
 - 2.3. Finish: Gloss
 - 2.4. Size: Order size 150x75 mm (actual size may differ)
 - 2.5. Thickness: 8 mm
 - 2.6. Recycled content: Submit proposals
3. Background/ Base: Glasroc H Tilebacker 12.5mm
 - 3.1. Preparation: Stippling
4. Intermediate substrate: Flexible Waterproof Tile Adhesive
5. Bedding: Adhesive bed - notched trowel method
 - 5.1. Reinforcement: Not applicable
 - 5.2. Adhesive to BS EN 12004-1: Contractor's choice
6. Joint width: 2 mm
7. Grout: Two Part Impervious Resin Based Epoxy Grout and Adhesive
8. Movement joints: As clause 815
9. Accessories: Aluminium Matt White trims to external corners
Sealant to internal corners
Aluminium Matt White trims to exposed edges
Hinged tile access panel

111 Quarry Tiles

1. Description: Quarry Tile Floor Finish
2. Tiles: Quarry Tiles
 - 2.1. Manufacturer/ Supplier: Ketley Brick Ltd.
 - 2.1.1. Product reference: Staffordshire Brown Brindle
 - 2.2. Colour: Purple / Brown
 - 2.3. Finish: Natural
 - 2.4. Size: 205mm x 102.5mm
 - 2.5. Thickness: 18 mm
 - 2.6. Slip potential
 - 2.6.1. Slip resistance value (SRV) (minimum)/ Pendulum test value (PTV) (minimum) to BS 7976-1, -2, -3 or BS EN 14231 (natural stone only): Manufacturer's standard
 - 2.6.2. Surface roughness (Rz) (minimum) to BS 1134: Manufacturer's standard
 - 2.7. Recycled content: Submit proposals
3. Background/ Base: Screed
 - 3.1. Preparation: None
4. Intermediate substrate: Not required
5. Bedding: Adhesive to manufacturers guidance
 - 5.1. Reinforcement: Not applicable
 - 5.2. Adhesive to BS EN 12004-1: Contractor's choice

6. Joint width: 5 mm
7. Grout: Submit proposals
8. Movement joints: As clause 805
9. Accessories: None

General

210 Suitability of backgrounds/ bases

1. Background/ base tolerances: To permit specified flatness/ regularity of finished surfaces given the permissible minimum and maximum thickness of bedding.
2. New background drying times (minimum)
 - 2.1. Concrete walls: Six weeks.
 - 2.2. Brick/ block walls: Six weeks.
 - 2.3. Rendering: Two weeks.
 - 2.4. Gypsum plaster: Four weeks.
3. New base drying times (minimum)
 - 3.1. Concrete slabs: Six weeks.
 - 3.2. Cement:sand screeds: Three weeks.

215 Falls in the bases

1. General: Give notice if falls are inadequate.

260 Control samples

1. General: Complete sample areas, being part of finished work, in locations as follows: clause 110.
 - 1.1. Approval of appearance: Obtain before proceeding.

Preparation

310 Existing backgrounds/ bases generally

1. Efflorescence, laitance, dirt and other loose material: Remove.
2. Deposits of oil, grease and other materials incompatible with the bedding: Remove.
3. Tile, paint and other nonporous surfaces: Clean.
4. Wet backgrounds: Dry before tiling.

320 Existing concrete/ screeds

1. Loose or hollow portions: Cut out.
2. Making good: Material recommended by screed specialist

330 Existing plaster

1. Defective areas: Remove plaster that is loose, soft, friable, badly cracked or affected by efflorescence. Cut back to straight horizontal and vertical edges.
2. Making good: Use plaster or nonshrinking filler.

360 Existing paint

1. Paint with unsatisfactory adhesion: Remove so as not to impair bedding adhesion.

380 New plaster

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

390 Plasterboard backgrounds

1. Boards: Dry, securely fixed and rigid with no protruding fixings and face to receive decorative finish exposed.

400 Backgrounds

1. Description: Tilebacker Board
2. Boards: Dry, securely fixed and rigid with no protruding fixings.
3. Surfaces to be tiled: Seal or prime if recommended by adhesive manufacturer.

420 Raking out for key

1. Soft joints in existing masonry: Rake out to a depth of 13 mm (minimum).

460 Smoothing underlayment

1. Type: Recommended by adhesive manufacturer.
2. Condition: Allow to dry before tiling.

470 Plastics sheets

1. Type: Plastic sheet decoupling layer
 - 1.1. Manufacturer: Schlüter-Systems Ltd
 - 1.1.1. [Contact details](#)
 - 1.1.2. Product reference: Schlüter-DITRA
 - 1.2. Material: Polyethylene with fleece.
 - 1.3. Purpose: Waterproofing, Uncoupling, crack bridging and vapour management of tiled coverings.
 - 1.4. Third-party certification: CE Marking.
 - 1.5. Form: Grid structure of square cavities, each cut back in a dovetail configuration.
 - 1.6. [Physical properties](#)
 - 1.6.1. Colour: Orange.
 - 1.6.2. [Dimensions](#)
 - 1.6.2.1. Thickness (minimum): 3.5 mm.
 - 1.6.2.2. Width (minimum): 995 mm.
 - 1.7. Recycled content: 0%.
 - 1.8. Thickness: 3.5mm
2. Penetrations: Seal.

471 Fibre-reinforced cement boards

1. Type: Lightweight tile backer board
 - 1.1. Manufacturer: Submit Proposals
 - 1.2. Fire rating: Class A1.
 - 1.3. Moisture Resistant: Yes
 - 1.4. [Sheet size](#)
 - 1.4.1. Nominal thickness: 6 mm.
 - 1.4.2. Length: 1200 mm.
 - 1.4.3. Width: 600 mm.
 - 1.5. Edges: Square.
 - 1.6. Finish as delivered: Primed on one side.
2. Fixing system: As per manufacturers recommendations
3. Joints: Sealed as per manufacturers recommendations
4. Penetrations: Seal.

Fixing

510 Fixing generally

1. Colour/ shade: Unintended variations within tiles for use in each area/ room are not permitted.
 - 1.1. Variegated tiles: Mix thoroughly.
2. Adhesive: Compatible with background/ base. Prime if recommended by adhesive manufacturer.
3. Use of admixtures with cementitious adhesives: Only admixtures approved by adhesive manufacturer.
4. Cut tiles: Neat and accurate.
5. Fixing: Provide adhesion over entire background/ base and tile backs.
6. Final appearance: Before bedding material sets, make adjustments necessary to give true, regular appearance to tiles and joints when viewed under final lighting conditions.
7. Surplus bedding material: Clean from joints and face of tiles without disturbing tiles.

530 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 the main axis of the 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.

540 Level of floor tiling

1. Permissible deviation in level from datum 10mm.

550 Flatness/ Regularity of tiling/ mosaics

1. Sudden irregularities: Not permitted.
2. 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 and no gap should be greater than 6 mm, i.e. a tolerance of +/- 3 mm.

560 Level of tiling across joints

1. Deviation (maximum) between tile surfaces either side of any type of joint
 - 1.1. 1 mm for joints less than 6 mm wide.
 - 1.2. 2 mm for joints 6 mm or greater in width.

570 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.
 - 1.3.1. Grading designation: 0/4 (MP) category 1 fines and between 20%-66% passing a 0.5 sieve.
2. Batching: Select from:
 - 2.1. Batch by weight.
 - 2.2. 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.

3. Mixing: Mix materials thoroughly to uniform consistence. Use a suitable forced action mechanical mixer. Do not use a free fall type mixer.
4. Application: At normal temperatures use within two hours. Do not use after initial set. Do not retemper.

580 Porous tiles

1. Tiles to be bedded in cement:sand: Soak in clean water for at least 30 minutes. Fix as soon as surface water has drained.

650 Adhesive bed – notched trowel method (walls)

1. Application: By 3 mm floated coat of adhesive to dry background in areas of approximately 1 m². Comb surface.
2. Tiling: Press tiles firmly onto float coat.

651 Adhesive bed – notched trowel and buttering method (walls)

1. Application: By floated coat of adhesive to dry background in areas of about 1 m². Comb surface.
2. Tiling: Apply thin even coat of adhesive to backs of dry tiles. Fill any ribbed, deep keyed or button profiles. Press tiles firmly onto float coat.
3. Finished adhesive thickness: 3 mm or within the range allowed by the adhesive manufacturer.

652 Adhesive bed – buttering method (walls)

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

710 Adhesive bed – notched trowel and buttering method (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 ribbed, deep keyed or button profiles. Press tiles firmly onto float coat.
3. Finished adhesive thickness: Within range allowed by manufacturer.

711 Adhesive bed – buttering method (floors)

1. Tiling: Apply even coat of adhesive to backs of dry tiles. Fill any ribbed, deep keyed or button profiles.
2. Finished adhesive thickness: Within the range allowed by the adhesive manufacturer.

Movement joints/ grouting/ completion

805 Sealant movement joints with metal edgings

1. Description: Threshold of floor finishes and movement joints
2. Edging material: Brass angle
 - 2.1. Size: 3mm thick
 - 2.2. Substrate: Screed
 - 2.3. Bedding: To manufacturers guidance
3. Installation: Centre over joints in base. Set to exact finished level of floor.
 - 3.1. Fixing to base: To manufacturers guidance
4. Joint width: To match that of structural movement joint in base
5. Sealant: 3mm to both sides
 - 5.1. Colour: To match grouting
 - 5.2. Preparation and application: As [section Z22](#)

815 Sealant movement joints

1. Description: In junction between walls and floors, ceilings, other walls and fixings.

2. Joints: Extend through tiles and bedding to base/ background. Centre over joints in base/ background.
 - 2.1. Width: 2mm
3. Sealant: Anti-bacterial silicone sealant
 - 3.1. Colour: to match grout
 - 3.2. Preparation and application: As section Z22

875 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.
 - 3.1. Profile: Flush
4. Polishing: When grout is hard, polish tiling with a dry cloth.

885 Coloured grout

1. Staining of tiles: Not permitted
2. Evaluating risk of staining: Apply grout to a few tiles in a small trial area. If discoloration occurs apply a protective sealer to tiles and repeat trial.

Performance

900 Pendulum floor covering slip resistance testing

1. Floor covering(s) to be tested: M40/ 115-117.
2. Testing authority: A UKAS-accredited laboratory
3. Test: To BS 7976-1, -2 and -3.
 - 3.1. Floor covering condition: Dry and wet
 - 3.2. Witnessing/ certification: Arrange for tests to be witnessed/ certified by:Consultant.
 - 3.3. Report: Submit.

Ω End of Section

M50 **Rubber/ plastics/ cork/ lino/ carpet tiling/ sheeting**

Types of covering

150 Sheeting

1. Description: Marmoleum
2. Manufacturer: Forbo
 - 2.1. Product reference: Surestep
3. Standard: To BS EN 14041
4. Location: Refer to drawings
5. Base: Troweled screed
 - 5.1. Preparation: As [clause 420](#)
6. Adhesive: As clause 640
 - 6.1. Primer: As recommended by the manufacturer
7. Seams: Solvent welding
8. Accessories: Edging trim for thresholds as clause
9. Finishing: As clause
10. Other requirements: None

170 Carpeting

1. Description: Carpet to Office and Quiet Room
2. Manufacturer: Joseph Hamilton & Seaton
 - 2.1. Product reference: Tretford
3. Standard: To [BS EN 14041](#)
4. Location: Office and Quiet Room
5. Base: Acoustic underlay on Troweled screed as clause M10.130
6. Underlay: Acoustilay 15-(15 mm thickness).
7. Carpet underlay: As per manufacturer's instructions
8. Carpet underlay adhesive: As per manufacturer's instructions
 - 8.1. Primer: As per manufacturer's instructions
9. [Properties](#)
 - 9.1. Type: Loop (ondule)
 - 9.2. Reaction-to-fire classification: To BS EN 13501-1, Class Bfl.
 - 9.3. Backing: Jute
 - 9.4. Acoustic performance: 22 dB
 - 9.5. Width: 2000 mm
 - 9.6. Pile height: 5mm
 - 9.7. Colour/ pattern: To Architect's choice
10. Carpet adhesive: To manufacturers recommendations
 - 10.1. Primer: To manufacturers recommendations
11. Seams: Seam bonding, as [clause 690](#)
12. Accessories: Edging strip at thresholds, as [clause 740](#)
13. Other requirements: None

General requirements

210 Workmanship generally

1. Base condition after preparation: Rigid, dry, sound, smooth and free from grease, dirt and other contaminants
2. Finished coverings: Accurately fitted, tightly jointed, securely bonded, smooth and free from air bubbles, rippling, adhesive marks and stains
3. Operatives: Appropriately skilled and experienced for the type of work

220 Samples

1. Covering samples: Before placing orders, submit representative sample of each type.
2. Purpose: To obtain approval of appearance from client

330 Commencement

1. Required condition of works prior to laying floor-covering materials
 - 1.1. Building is weathertight and well dried out.
 - 1.2. Wet trades have finished work.
 - 1.3. Paintwork is finished and dry.
 - 1.4. Conflicting overhead work is complete.
 - 1.5. Floor service outlets, duct covers and other fixtures around which materials are to be cut are fixed.
 - 1.6. Provisions have been made to allow for ventilation during and after laying of materials.
2. Notification: Submit not less than 48 hours before commencing laying.

340 Conditioning

1. Prior to laying: Condition materials by unpacking and separating in spaces where they are to be laid. Unroll carpet and keep flat on a supporting surface.
2. Conditioning time and temperature (minimum): As recommended by manufacturer, with time extended by a factor of two for materials stored or transported at a temperature of less than 10°C immediately prior to laying

350 Environmental conditions

1. Temperature and humidity: Before, during and after laying, maintain approximately at levels that will prevail after the building is occupied
 - 1.1. Subfloor : Minimum temperature of 10°C
2. Ventilation: Maintain adequate provision before, during and after laying the floor covering

Preparing bases

410 New bases

1. General: Designer and those responsible for the construction of the base to ensure suitability
2. Suitability of bases and conditions within any area: Commencement of laying of coverings will be taken as acceptance of suitability.

420 Existing bases

1. Notification: Before commencing work, the contractor is to confirm that existing bases will, after preparation, be suitable to receive coverings.
2. Suitability of bases and conditions within any area: Commencement of laying of coverings will be taken as acceptance of suitability.

430 New wet-laid bases

1. Artificial 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, Annex A or BS 8203, Annex A.

- 2.1. Locations for readings: In all corners, along edges, and at various points over area being tested.
3. Commencement of laying coverings: Not until all readings show 75% relative humidity or less
- 440 Substrates to receive thin coverings
 1. Trowelled finishes: Uniform, smooth surface free from trowel marks and other blemishes. Abrade suitably to receive specified floor covering material.
- 470 Bases from which existing floor coverings have been removed
 1. Substrate: Clear of covering and as much adhesive as possible. Skim with smoothing underlayment compound to give smooth, even surface.
- 480 Existing floor coverings to be overlaid
 1. Substrate: Make good by local re-sticking and patching or filling with smoothing underlayment compound to give smooth, even surface.
- 570 Carpet underlay
 1. Manufacturer: Acoustilay
 - 1.1. Product reference: Acoustilay 15–(15 mm thickness).
 2. Standard: To [BS EN 14499](#)
 3. Properties
 - 3.1. Type:

PVC and Foam
 - 3.2. Reaction-to-fire classification: The surface barrier layer of acoustilay is self extinguishing to FMVS S302
 - 3.3. End use classification: GC/U to [BS EN 14499](#)

Laying coverings

- 610 Setting out tiles
 1. Method: Set out from centre of area/ room, so that wherever possible tiles along opposite edges are of equal size and edge tiles are more than 50% of full tile width.
 - 1.1. Opposite edges: Tiles along opposite edges are of equal size.
 - 1.2. Edges: Edge tiles are more than 50% of full tile width.
- 620 Colour consistency
 1. Finished work in any one area/ room: Flooring free from banding or patchiness
 - 1.1. Requirement: Use material from the same batch by the same manufacturer
- 640 Adhesive fixing generally
 1. Primer: Type as recommended by adhesive manufacturer.
 - 1.1. Application: As per manufacturer's instructions
 2. Adhesive
 - 2.1. Type: As specified, as recommended by covering/ underlay, manufacturer or as approved.
 - 2.2. Application: As necessary to achieve good bond.
 - 2.2.1. Method: As per manufacturer's instructions
 - 2.2.2. Temperature: Between 5°C and 35°C
 - 2.2.3. Open time: Maximum 30 minutes
 3. Laying of floor covering: In accordance with manufacturer's instructions
 - 3.1. Fixtures: Floor-covering material to be cut around all permanent fixtures

4. Finished surface: Free from trowel ridges, high spots caused by particles on the substrate, and other irregularities.

650 Seams

1. Requirement: As per manufacturer's instructions.
2. Patterns: Matched along seams
3. Joints: Tight without gaps

670 Laying borders and design strips

1. Preparation: As per manufacturer's instructions.
2. Laying: Around the perimeter of the room. Fixed using adhesive, as defined in clause 640.
 - 2.1. Curl: Not acceptable
 - 2.2. Corners: Mitre

680 Seam welding – resilient floor coverings

1. Floor covering: PVC, as clause 150.
 - 1.1. Method: Heat welding
2. Commencement: At least 24 hours after laying, or after adhesive has set.
3. Welding: Groove all seams. Heat-weld along grooved seams with welding rod colour matched to floor covering.
 - 3.1. Trimming: Required
 - 3.2. Cold welding solution: As floor manufacturers instructions
4. Accessories: As recommended by manufacturer

780 Trafficking after laying

1. Covering types: Floor finishes with adhesive bond
2. Traffic-free period: In accordance with adhesive manufacturer's instructions

Completion

820 Finishing

1. Description: Marmoleum and Carpet Flooring
2. Cleaning: Vacuum carpet to remove any loose fibres. Wash floor with water containing neutral (pH 6–9) detergent. If necessary, lightly scrub heavily soiled areas.
3. Treatment: As per floor-covering manufacturer's instructions
4. Temporary protection: Required

830 Finishing rubber flooring

1. Cleaning: As per manufacturer's instructions
2. Final treatment: As per manufacturer's recommendations

861 Slip resistance testing

1. Testing authority: A UKAS-accredited laboratory
2. Floor covering(s) to be tested: As clause 150
3. Test: To [BS EN 16165](#)
 - 3.1. Method: Pendulum test
 - 3.2. Floor covering condition: Dry and wet
 - 3.3. Room temperature: 15–25°C
4. Verification
 - 4.1. Submittals: Report

880 Leftover material

1. Spare covering material: Retain suitable material for patching/ repairs. On completion, submit pieces for selection. Hand over selected pieces to the employer.
2. Waste disposal: In accordance with relevant regulations

Ω End of Section

M60 **Painting/clear finishing**

Coating systems

110 Emulsion paint

1. Description: To internal plastered surfaces
2. Manufacturer: Little Greene
 - 2.1. Product reference: To be confirmed by Architect
3. Surfaces: Plasterboard with skim finish
 - 3.1. Preparation: Ensure surfaces are clean and dry. Tape and fill joints
4. Initial coats: As recommended by manufacturer
5. Number of coats: 1 sealing coat
6. Undercoats: As recommended by manufacturer
 - 6.1. Number of coats: 2 coats
7. Finishing coats: Matt vinyl
 - 7.1. Number of coats: 1 coat

150 Eggshell/ satin paint

1. Description: To Internal Skirtings and Timber Linings
2. Manufacturer: Little Greene
 - 2.1. Product reference: To be confirmed
3. Surfaces: Uncoated
 - 3.1. Preparation: Ensure surfaces are clean and dry
4. Initial coats: As recommended by manufacturer
 - 4.1. Number of coats: 1 Primer
5. Undercoats: As recommended by manufacturer
 - 5.1. Number of coats: 2 coats
6. Finishing coats: 1 top coat
 - 6.1. Number of coats: 1 coat

170 Masonry coating

1. Description: Internal masonry
2. Manufacturer: Little Greene
 - 2.1. Product reference: To be confirmed by Architect
3. Surfaces: Internal masonry surfaces
 - 3.1. Preparation: Thoroughly clean to remove all dust, dirt, grease, loose or flaking paint, efflorescence, and surface contaminants using dry brushing or light abrasion. Rake out and repoint any defective mortar joints with a mortar to match existing. Ensure surfaces are clean and dry. Allow surfaces to dry completely. Report any signs of damp, staining, or structural defects before proceeding.
4. Initial coats: As recommended by manufacturer
 - 4.1. Number of coats: 1 coat thinned 20%
5. Undercoats: As recommended by manufacturer
 - 5.1. Number of coats: 2 coats
6. Finishing coats: Matt vinyl
 - 6.1. Number of coats: 1 coat

172 Flame-retardant coating system

1. Description: To Internal Timber

2. Manufacturer: Zeroflame or equal and approved
 - 2.1. Product reference: Fire Retardant Treatment
3. Reaction to fire rating: To BS EN 13501-1, Class B-s2, d0
4. Surfaces: Timber
 - 4.1. Preparation: As recommended by manufacturer
5. Initial coats: As recommended by manufacturer
 - 5.1. Number of coats: As recommended by manufacturer
 - 5.2. Application: As recommended by manufacturer
6. Undercoats: As recommended by manufacturer
 - 6.1. Number of coats: As recommended by manufacturer
 - 6.2. Application: As recommended by manufacturer
7. Finishing coats: As recommended by manufacturer
 - 7.1. Number of coats: As recommended by manufacturer
 - 7.2. Application: As recommended by manufacturer

Generally

210 Coating materials

1. Manufacturers: Obtain materials from any of the following:
2. Little Greene.
3. Selected manufacturers: Submit names before commencement of coating work.

215 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.

220 Compatibility

1. Coating materials selected by contractor
 - 1.1. Recommended by their manufacturers for the particular surface and conditions of exposure.
 - 1.2. Compatible with each other.
 - 1.3. Compatible with and not inhibiting performance of preservative/fire-retardant pretreatments.

280 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.

300 Control samples

1. Sample areas of finished work: Carry out, including preparation, as follows:
2. Types of coating Location
3. M60/ 110, Reveller Studio - one full section between windows on north and south side.
4. Approval of appearance: Obtain before commencement of general coating work.

320 Inspection by coating manufacturers

1. General: Permit manufacturers to inspect work in progress and take samples of their materials from site if requested.

Preparation

400 Preparation generally

1. Standard: In accordance with BS 6150.

2. Refer to any pre-existing CDM Health and Safety File.
 3. Refer to CDM Construction Phase Plan where applicable.
 4. Suspected existing hazardous materials: Prepare risk assessments and method statements covering operations, disposal of waste, containment and reoccupation, and obtain approval before commencing work.
 5. Preparation materials: Types recommended by their manufacturers and the coating manufacturer for the situation and surfaces being prepared.
 6. Substrates: Sufficiently dry in depth to suit coating.
 7. Efflorescence salts: Remove.
 8. Dirt, grease and oil: Remove. Give notice if contamination of surfaces/ substrates has occurred.
 9. Surface irregularities: Remove.
 10. Joints, cracks, holes and other depressions: Fill flush with surface, to provide smooth finish.
 11. Dust, particles and residues from preparation: Remove and dispose of safely.
 12. Water based stoppers and fillers
 - 12.1. Apply before priming unless recommended otherwise by manufacturer.
 - 12.2. If applied after priming: Patch prime.
 13. Oil based stoppers and fillers: Apply after priming.
 14. Doors, opening windows and other moving parts
 - 14.1. Ease, if necessary, before coating.
 - 14.2. Prime resulting bare areas.
- 420 Fixtures and fittings
1. Removal: Before commencing work remove: Coverplates, grilles, wall clocks, and other surface mounted fixtures.
 2. Replacement: Refurbish as necessary, refit when coating is dry.
- 425 Ironmongery
1. Removal: Before commencing work: Remove ironmongery from surfaces to be coated.
 2. Hinges: Remove
 3. Replacement: Refurbishment as necessary; refit when coating is dry.
- 430 Existing ironmongery
1. Refurbishment: Remove old coating marks. Clean and polish.
- 440 Previously coated surfaces generally
1. Preparation: In accordance with BS 6150, clause 11.5.
 2. Contaminated or hazardous surfaces: Give notice of:
 - 2.1. Coatings suspected of containing lead.
 - 2.2. Substrates suspected of containing asbestos or other hazardous materials.
 - 2.3. Significant rot, corrosion or other degradation of substrates.
 3. Suspected existing hazardous materials: Prepare risk assessments and method statements covering operations, disposal of waste, containment and reoccupation, and obtain approval before commencing work.
 4. Removing coatings: Do not damage substrate and adjacent surfaces or adversely affect subsequent coatings.
 5. Loose, flaking or otherwise defective areas: Carefully remove to a firm edge.
 6. Alkali affected coatings: Completely remove.
 7. Retained coatings
 - 7.1. Thoroughly clean to remove dirt, grease and contaminants.
 - 7.2. Gloss-coated surfaces: Provide key.

8. Partly removed coatings

- 8.1. Additional preparatory coats: Apply to restore original coating thicknesses.
- 8.2. Junctions: Provide flush surface.

9. Completely stripped surfaces: Prepare as for uncoated surfaces.

481 Uncoated wood

- 1. General: Provide smooth, even finish with arrises and moulding edges lightly rounded or eased.
- 2. Heads of fasteners: Countersink sufficient to hold stoppers/fillers.
- 3. Resinous areas and knots: Apply two coats of knotting.

500 Preprimed steel

- 1. Areas of defective primer, corrosion and loose scale: Take back to bare metal. Reprime as soon as possible.

570 Uncoated masonry/ Rendering

- 1. Loose and flaking material: remove.

580 Uncoated plaster

- 1. Nibs, trowel marks and plaster splashes: Scrape off.
- 2. Overtrowelled 'polished' areas: Key lightly.

590 Uncoated plasterboard

- 1. Depressions around fixings: Fill with stoppers/ fillers

622 Organic growths

- 1. Dead and loose growths and infected coatings: Scrape off and remove from site.
- 2. Treatment biocide: Apply appropriate solution to growth areas and surrounding surfaces.
- 3. Residual effect biocide: Apply appropriate solution to inhibit re-establishment of growths.

631 Previously painted window frames

- 1. Paint encroaching beyond glass sight line: Remove.
- 2. Loose and defective putty: Remove.
- 3. Putty cavities and junctions between previously painted surfaces and glass: Clean thoroughly.

4. Finishing

- 4.1. Patch prime, reputty as necessary, and allow to set.
- 4.2. Seal and coat as soon as fully set.

645 Sealing of internal movement joints

- 1. General: To junctions of walls and ceilings with architraves, skirtings and other trims.
- 2. Sealant: Waterborne acrylic.
 - 2.1. Manufacturer: Submit proposals
 - 2.1.1. Product reference: Submit proposals
 - 2.2. Preparation and application: As section Z22.

651 Existing gutters

- 1. Dirt and debris: Remove from inside of gutters.
- 2. Defective joints: Clean and seal with suitable jointing material.

Application

711 Coating generally

- 1. Application standard: In accordance with BS 6150, clause 9.

2. Conditions: Maintain suitable temperature, humidity and air quality during application and drying.
3. Surfaces: Clean and dry at time of application.
4. Thinning and intermixing of coatings: Not permitted unless recommended by manufacturer.
5. Overpainting: Do not paint over intumescent strips or silicone mastics.
6. Priming coats
 - 6.1. Thickness: To suit surface porosity.
 - 6.2. Application: 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.

720 Priming joinery

1. Preservative treated timber: Retreat cut surfaces with two flood coats of a suitable preservative before priming.
2. End grain: Coat liberally allow to soak in, and recoat.

730 Workshop coating of concealed joinery surfaces

1. General: Apply coatings to all surfaces of components.

731 Site-coating of concealed joinery surfaces

1. General: After priming, apply additional coatings to surfaces that will be concealed when fixed in place.
 - 1.1. Components: Built in window frames
 - 1.2. Additional coatings: One undercoat

751 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.

770 External doors

1. Bottom edges: Prime and coat before hanging doors.

780 Bead glazing to coated wood

1. Before glazing: Apply first two coats to rebates and beads.

800 Glazing

1. Etched, sand blasted and ground glass: Treat or mask edges before coating to protect from contamination by oily constituents of coating materials.

810 Water-repellent

1. Application: Liberally flood surface, giving complete and even coverage.

Ω End of Section

N10 **General fixtures/ furnishings/ equipment**

Products

110 Purpose-made

1. Description: Factory-made fixed joinery units formed from 18 mm plywood and MDF substrate with factory-applied Forbo Furniture Linoleum to fronts and recessed handles.
2. Manufacturer: Submit proposals. ISO 9001-certified.
3. Standard: BS EN 1729-1 and BE EN 1729-2
4. Timber: 18mm Plywood
 - 4.1. Species: Birch BB/BB
 - 4.2. Edging: Sanded and sealed
 - 4.3. Appearance class: J2
 - 4.4. Moisture content on delivery: 9–13%
5. Supports: Softwood timber
6. Handles: Folded mild steel handles with clear stoved lacquer finish.
 - 6.1. Profile: Refer to drawings
7. Shelves: 18mm Melamine wrapped MDF
8. Other materials: Forbo Furniture Linoleum
9. Location: To joinery front face
10. Colour: As specified by Architect from standard range
11. Finish: Lacquered
12. Material: Linoleum
13. Size: Refer to drawings
14. Thickness: 2mm
15. Adhesive: Eurocol 233 Eurosol Contact.
16. Joinery workmanship: As section Z10.
17. Metalwork materials and workmanship: As section Z11.
18. Other requirements: Integrated soft close hinges, cylinder locks, recessed handles, adjustable shelving and supports. Kick to faced in linoleum to match. Concealed 110° soft-close hinges. Concealed adjustable pins or brackets for shelving. Allow for 4no. shelf per cupboard in finish to match.
19. Accessories: Upholstery to hinged seating

111 Purpose-made

1. Description: Prefabricated kitchenette units including base and wall cabinets, worktop, sink, and fittings as indicated on drawings.
2. Manufacturer: Submit proposals. ISO 9001-certified.
3. Standard: BS EN 1729-1 and BE EN 1729-2.
4. Carcasses:: MR MDF, 18mm thickness, melamine face to both sides
5. Cabinet Fronts:: MR MDF, 18mm thickness, melamine face to both sides
6. Worktop and Splashback:: As per clause N10.200.
7. Backpanels:: MR MDF, 12mm thickness, melamine face to both sides
8. Timber: To BS EN 942.
 - 8.1. Edging: 2mm PVC colour to match. Radius edges to be smooth and continuous.
 - 8.2. Appearance class: J2
 - 8.3. Moisture content on delivery: 9–13%
9. Drawer Runners:: Full extension, soft-close type, metal-sided drawers.

10. Hinges:: 110° concealed clip-on hinges, soft-close function, minimum 3 per full-height door.
11. Handles:: Submit Proposals.
12. Size: Refer to drawings
13. Adhesive: To BS 1203
14. Joinery workmanship: As section Z10.
15. Metalwork materials and workmanship: As section Z11.
16. Other requirements: Kick to match fronts. Scribes to close gap with adjacent finishes to match. Mastic to all edges and junctions with adjacent materials.
17. Accessories: Magnetic child safety locks. Babygo or equal approved. Submit proposals for client approval.
18. Verification: Submit samples prior to fabrication

125 Desks and tables

1. Description: Purpose-made fixed reception desk comprising a plywood and softwood framework, external cladding in mild steel sheet, 2 mm Forbo furniture linoleum worktop surface (terminating 5 mm from all edges), and integrated drawers. Mild steel edges deburred and left exposed. Fabrication and installation by specialist joinery contractor to detailed construction drawings.
2. Manufacturer: Submit proposals
3. Plan shape: See relevant drawings
4. Dimensions
 - 4.1. Plan size: See relevant drawings
 - 4.2. Height: See relevant drawings
5. Carcass / Substrate: Joinery grade plywood
 - 5.1. Thickness: 18mm
 - 5.2. Use: Backing for cladding and drawer housing. Not be visible externally.
 - 5.3. Other requirements: Painted in areas behind cladding joints. Colour to be confirmed with Architect.
6. Cladding: Hot rolled mild steel sheet
 - 6.1. Thickness: 1.5mm or 2mm
 - 6.2. Finish: Clear stoved lacquer
 - 6.3. Edge treatment: Deburred edges; not folded or wrapped
 - 6.4. Fixing: Fully bonded to substrate using high-performance contact adhesive
 - 6.5. Joints: Abut tight
7. Worktops
 - 7.1. Material: 2mm Forbo Furniture Linoleum
 - 7.2. Manufacturer:: Forbo Flooring Ltd
 - 7.3. Finish/ Colour: To Architects choice from standard range
 - 7.4. Substrate: Hot rolled mild steel sheet
 - 7.5. Adhesive: 233 Eurosol Contact as recommended by manufacturer
 - 7.6. Exposed edges: Linoleum cleanly cut terminates 5mm from all edges, no lipping or edge wrapping.
 - 7.7. Appearance: No visible fixings unless detailed
8. Drawers: 18mm MDF with melamine facing to internal faces
 - 8.1. Fronts: To match mild steel cladding
 - 8.2. Runners: Full-extension, soft-close metal runners
 - 8.3. Handles: Recessed pull as per drawings
9. Supports: Preservative-treated softwood battens as required for structural integrity
 - 9.1. Fixing:: Screwed and glued; concealed where visible

10. Accessories/ Other requirements: No sharp edges permitted. Any additional joint lines to be agreed with the Architect prior to fabrication. Hinged access panels where required for cabling.
11. Verification: Mock-up submitted for approval prior to fabrication as per mock-up schedule

135 Storage and display units

1. Description: Low Level Storage Cupboard
2. Item: AV Joinery Cupboard
3. Manufacturer: Submit proposals
4. Dimensions: See relevant drawings
5. Doors/ Drawers
 - 5.1. Material: Moisture-resistant MDF 18mm
 - 5.2. Finish/ Colour: All panels to be pre-primed and finished with high-quality factory-applied paint.
6. Outer panels/ Plinths/ Shelves
 - 6.1. Material: Moisture-resistant MDF 18mm
 - 6.2. Finish/ Colour: All panels to be pre-primed and finished with high-quality factory-applied paint.
7. Frames/ Legs
 - 7.1. Material: Moisture-resistant MDF 18mm
 - 7.2. Finish/ Colour: All panels to be pre-primed and finished with high-quality factory-applied paint.
8. Edges:: All visible and exposed edges sealed and finished to match faces.
9. Preparation:: MDF surfaces sanded, dust-free, sealed with proprietary MDF primer.
10. Applied finish:: Primed with MDF compatible primer and factory paint finished to manufacturers guidance.
11. Finish colour:: To be confirmed by Architect from standard RAL range
12. Finish quality:: Smooth, even, brush-free finish to professional spray standard. No visible grain-raising, drips, or orange peel texture.
13. Integral accessories: Hardwood recessed pull handles fabricated into door leaf at manufacture - no visible fixings. Flush with door face and finished to match.
14. Other requirements: Concealed 110° soft-close hinges. Concealed adjustable pins or brackets for shelving. Allow for 1 no. shelf per cupboard in finish to match.
15. Accessories: Magnetic child safety locks. Babygo or equal approved. Submit proposals for client approval.

200 Worktops

1. Description: Kitchenette and tea points
2. Manufacturer: DuPont Corian
 - 2.1. Product reference: Corian solid surface kitchen worktop with integrated Corian sink (Model no.965) and splashback to match
3. Material: DuPont Corian solid surface
4. Finish/ Colour: To Architects choice
5. Dimensions: See drawings
 - 5.1. Thickness: 12mm
6. Front edges: 3mm Rounded. All edges to be smooth, without sharp returns. Rounded top and bottom.
 - 6.1. Cut edges: None
7. Sink: Factory-integrated, seamless joint
 - 7.1. Sink material: DuPont Corian solid surface
 - 7.2. Sink model: 965

- 7.3. Sink colour and finish: To match worktop
- 7.4. Sink cut-out and fixing: Undermounted seamless Corian sink, formed integrally into worktop. No pre-drilled tap holes. Fit waste outlet: 90 mm basket strainer, stainless steel. Include overflow.
- 8. Splashback: Factory-made to size
 - 8.1. Splashback material: DuPont Corian solid surface
 - 8.2. Splashback colour and finish: To match worktop
 - 8.3. Splashback cut-out and fixing: Factory made to size, gaps sealed with flexible, colour-matched silicone or Corian adhesive
- 9. Joints: Factory-bonded using colour-matched Corian adhesive. Seams to be inconspicuous and ensure continuous smooth surface with no visible transition between sink and worktop.
- 10. Support: Ensure sufficient support with battens
- 11. Cutouts: Required
- 12. Integral accessories: Proprietary fasteners and support legs

235 Curtains

- 1. Description: To Quiet Room
- 2. Manufacturer: Archisonic Impact Acoustic
 - 2.1. Product reference: Noren
- 3. Standard: To [BS 5867-1](#) and [BS 5867-2](#).
- 4. Fire performance: Approved Document B, volume 1 and volume 2.
- 5. Dimensions
 - 5.1. Width: See drawings
 - 5.2. Drop: See drawings
- 6. Heading style: As manufacturers standard
- 7. Material
 - 7.1. Fabric: Polyester
 - 7.2. Colour/ Pattern: Submit samples
- 8. Lining
 - 8.1. Fabric: To manufacturers standard
 - 8.2. Colour: Submit samples
- 9. Integral accessories: Offset mount

240 Motorised Blackout Blinds

- 1. Description: To Reveller Studio
- 2. Standard: To [BS EN 13120](#).
- 3. Manufacturer: Umbra
 - 3.1. Product reference: Kurolok Motorised Bespoke zipped-edge blackout blinds.
- 4. Type: Vertical roller
- 5. Dimensions: Refer to drawings
- 6. Material: Fabric
 - 6.1. Finish/ Colour: Architect to choose from standard range
- 7. Operation: 24 V d.c. motorized
- 8. Testing: Safety factors
- 9. Accessories/ Other requirements: Remote electrical operation

241 Manually Operated Blackout Blinds

- 1. Description: To Reveller Terrace Doors
- 2. Standard: To [BS EN 13120](#).

3. Manufacturer: Umbra
 - 3.1. Product reference: Premium zipped-edge blackout blinds.
4. Type: Vertical roller
5. Dimensions: Refer to drawings
6. Material: Fabric
 - 6.1. Finish/ Colour: Architect to chose from standard range.
7. Operation: Crank handle
8. Testing: Safety factors
9. Accessories/ Other requirements: Side guide tracks

270 Mirrors

1. Description: Frameless safety mirror, mechanically fixed.
2. Manufacturer: Submit Proposals
 - 2.1. Product reference:: Submit Proposals
3. Dimensions
 - 3.1. Length: Refer to drawings
 - 3.2. Width: Refer to drawings
 - 3.3. Thickness: Nominal 6mm or to manufacturer's recommendation.
4. Material: Laminated safety mirror to BS EN 1036-1.
5. Quality: Free from tarnishing, discoloration, scratches and other defects visible in the designed viewing conditions. Reflection undistorted.
6. Backing: 12 mm MR MDF factory cut match mirror size
 - 6.1. Finish: Moisture-resistant lacquer
 - 6.2. Treatment: All edges polished and sealed to prevent moisture ingress.
7. Edges
 - 7.1. Appearance : Frameless
 - 7.2. Treatment: All edges polished and sealed to prevent moisture ingress. No sharp or exposed corners.
 - 7.3. Profile: Bevelled, 6 mm
8. Joints: Not permitted
9. Fixing: Mirror bonded to MDF. Holes, 4 mm diameter, inset 50 x 50 mm from corners, for fixing screws. Tamper-resistant and non-removable without tools. Fixings covered with mirror dome heads to protrude no more than 3mm from mirror face.
10. Installation: Accurately with sides vertical where applicable.

300 Entrance matting

1. Description: To reception
2. Manufacturer: Forbo Flooring Systems
 - 2.1. Product reference: Tuffiguard Nuway Classic
3. Arrangement: Inset internal
4. Material: Scraper: Non-reflective aluminium. Wiper: Rubber. Pile: 100% Polyamide BCF.
5. Colour: Scraper Bars: Bronze
Wiper Strips: Buffed Single
6. Size: Refer to Drawings
7. Thickness:: 12mm
8. Construction:: Closed
9. Number of wiper strips:: Single
10. Integral accessories: Brass matwell frame

11. Module breaks: Agree prior to placing order
12. Samples:: Provide for Architects approval prior to placing order

460 Sealant

1. Description: To worktops
2. Standard: To BS EN ISO 11600, class F20 HM
3. Type: One part silicone
 - 3.1. Manufacturer: Contractor's choice
 - 3.1.1. Product reference: Contractor's choice
 - 3.2. Cure: Neutral
4. Colour: To match worktop
5. Other requirements: None

Execution

710 Moisture content of wood and wood-based boards

1. Standard: To [BS EN 942](#)
2. Moisture content on delivery: 9–13%
3. Temperature and humidity: During delivery, storage, fixing and to handover maintain conditions to suit specified moisture contents of timber components.

720 Installation generally

1. General: As Preliminaries section A33
2. Fixing and fasteners: As section Z20.

760 Sealant bedding and pointing

1. Application: As [Section Z22](#).
2. Bedding: Sinks to underside of worktops
3. Pointing: Joints between worktop and splash backs. Joints between units and floor finish. Joints between plinth and floor finish.

770 Trims

1. Lengths: Wherever possible, unjointed between angles or ends of runs.
2. Running joints: Where unavoidable, obtain approval of location and method of jointing.
3. Angle joints: Mitred.

Completion

910 General

1. Doors and drawers: Accurately aligned, not binding. Adjusted to ensure smooth operation.
2. Ironmongery: Checked, adjusted and lubricated to ensure correct functioning.

920 Appliances

1. Test: Ensure that all functions and features work correctly.
2. Documentation: Submit guarantees, instruction manuals, etc.

Ω End of Section

N11

Domestic kitchen fittings, furnishings and equipment

Products

350 Sinks, taps, traps and wastes

1. Description: Boiling Water Tap, Filter Tap, Hot and Cold Mixer Tap
2. Sinks
 - 2.1. Standard: To [BS EN 13310](#).
 - 2.2. Manufacturer: Submit proposals
 - 2.2.1. Product reference: Submit proposals
 - 2.3. Overall size: Refer to clause N10.200
 - 2.4. Material: Refer to clause N10.200
 - 2.4.1. Colour and finish: Refer to clause N10.200
3. Tap/ chainstay/ overflow holes: No chainstay hole.
4. Taps: As standard
 - 4.1. Manufacturer: Submit proposals
 - 4.1.1. Product reference: Submit proposals
 - 4.2. Operation: Lever
 - 4.3. Material: Submit proposals
5. Wastes: Pop-up
 - 5.1. Standard: To [BS EN 274-1](#), [BS EN 274-2](#) and [BS EN 274-3](#).
 - 5.2. Manufacturer: Submit proposals
 - 5.2.1. Product reference: Submit proposals
 - 5.3. Size: To fit sink
 - 5.4. Material: Submit proposals
 - 5.5. Tail: Submit proposals
6. Traps: Tubular, P-type
 - 6.1. Standard: To [BS EN 274-1](#), [BS EN 274-2](#) and [BS EN 274-3](#).
 - 6.2. Manufacturer: Submit proposals
 - 6.2.1. Product reference: Submit proposal
 - 6.3. Size: To fit waste
 - 6.4. Material: Plastics
 - 6.5. Depth of seal (minimum): 75 mm.
7. Accessories: Support brackets

360 Appliances

1. Item: Refrigerator, Dishwasher, Microwave, Boiler Water Tap, Filter Water Tap
2. Manufacturer: Submit Proposals
 - 2.1. Product reference: Submit Proposals
3. Colour and finish: Submit Proposals
4. Service connections: Hot and cold water and mains electricity

Execution

620 Installation generally

1. Fixings and adhesives: As [section Z22](#).
2. Services: As [section S90](#) and [section V90](#)

630 Installing units and worktops

1. General: Well-fitting, stable and secure.

650 Installing sinks, taps and wastes

1. Water supply: To [BS EN 806-2](#) and [BS EN 806-4](#).
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.

660 Sealant bedding and pointing

1. Application: Generally to appliances, worktops and kitchen joinery
2. Bedding: Sink to top of worktop
3. Pointing: Between units and splashbacks Between units and floor

670 Installing trims and mouldings

1. Lengths: Unjointed between angles or ends of runs.
2. Angle joints: Mitred.

Completion

910 General

1. Doors and drawers: Accurately aligned, not binding. Adjusted to ensure smooth operation.
2. Ironmongery: Checked and adjusted to ensure correct functioning.

920 Appliance commissioning

1. Appliance operation, functions and controls: Verify.
2. Documentation: Submit guarantees, instruction manuals, etc.

Ω End of Section

N13 Sanitary appliances and fittings

Products

001 General Note

1. To be read in conjunction with the latest revision of the sanitaryware schedule. The purpose of this section of the specification is to cover relevant standards to items within the schedule.

300 WCs and cisterns

1. Description: Throughout
2. WC standard: Not applicable
3. Type: As sanitaryware schedule
4. Pan
 - 4.1. Standards: To BS EN 33 and BS EN 997, Class 2
 - 4.2. Manufacturer: As sanitaryware schedule
 - 4.2.1. Product reference: As sanitaryware schedule
 - 4.3. Material: As sanitaryware schedule
5. Seat and cover
 - 5.1. Standard: To BS 1254
 - 5.2. Form: As sanitaryware schedule
 - 5.3. Manufacturer: As sanitaryware schedule
 - 5.3.1. Product reference: As sanitaryware schedule
 - 5.4. Material: As sanitaryware schedule
 - 5.5. Finish/ colour: As sanitaryware schedule
 - 5.5.1. Duty: Heavy
 - 5.5.2. Pillars: Submit proposals
 - 5.6. Soft close: Required
6. Pan connector
 - 6.1. Standard: To BS 5627.
 - 6.2. Manufacturer: As pan manufacturer
 - 6.2.1. Product reference: Submit proposals
 - 6.3. Colour: To match pan
7. Cistern
 - 7.1. Standard: To BS 1125
 - 7.2. Manufacturer: As sanitaryware schedule
 - 7.2.1. Product reference: As sanitaryware schedule
 - 7.3. Material: As sanitaryware schedule
 - 7.4. Finish/ colour: As sanitaryware schedule
8. Inlet valve: Cistern manufacturer's standard
 - 8.1. Manufacturer: As cistern
 - 8.1.1. Product reference: As cistern
 - 8.2. Water supply connection: Bottom
9. Flushing arrangement: Cistern manufacturer's standard
 - 9.1. Manufacturer: As cistern
 - 9.1.1. Product reference: Submit proposals
 - 9.2. Operating control: As sanitaryware schedule
 - 9.3. Flush volume: 4 L

- 10. Flush pipe: Concealed
 - 10.1. Manufacturer: Submit proposals
 - 10.1.1. Product reference: Submit proposals
 - 10.2. Material: Not applicable
 - 11. Accessories: Concealed support frames
- 311 Unisex accessible WC equipment packages (Document M)
- 1. Description: As sanitaryware schedule
 - 2. Manufacturer: As sanitaryware schedule
 - 2.1. Product reference: As sanitaryware schedule
 - 3. Type approval certificate: Submit.
 - 4. Finish/ colour
 - 4.1. Pan: As sanitaryware schedule
 - 4.2. Cistern: As sanitaryware schedule
 - 4.3. Seat: As sanitaryware schedule
 - 4.4. Basin: As sanitaryware schedule
 - 4.5. Handrails and grab bars: As sanitaryware schedule
 - 5. Transfer handling: As per relevant drawing
 - 6. Water supply fittings (basin): Lever-operated basin mixer tap
 - 6.1. Water supply temperature (maximum): 43°C
 - 7. Accessories: As sanitaryware schedule
- 335 Washbasins
- 1. Description: As sanitaryware schedule
 - 2. Standard: To BS EN 14688
 - 2.1. Overflow class: CL10
 - 3. Manufacturer: As sanitaryware schedule
 - 3.1. Product reference: As sanitaryware schedule
 - 4. Size: As sanitaryware schedule
 - 5. Material: As sanitaryware schedule
 - 6. Colour: As sanitaryware schedule
 - 7. Configuration: Wall-hung
 - 8. Tap/ chainstay/ overflow holes: No chainstay hole
 - 9. Water supply fittings: Basin mixer tap
 - 9.1. Water supply temperature (maximum): 43°C
 - 9.2. Flow rate (maximum): 6 L/ min. at 3 bar
 - 9.3. Manufacturer: As sanitaryware schedule
 - 9.3.1. Product reference: As sanitaryware schedule
 - 9.4. Operation: As sanitaryware schedule
 - 10. Wastes: As sanitaryware schedule
 - 10.1. Standards: To BS EN 274-1, -2 and -3.
 - 10.2. Manufacturer: As sanitaryware schedule
 - 10.2.1. Product reference: As sanitaryware schedule
 - 10.3. Size: As sanitaryware schedule
 - 10.4. Material: As sanitaryware schedule
 - 10.5. Tail: As sanitaryware schedule
 - 11. Traps: As sanitaryware schedule

- 11.1. Standards: To BS EN 274-1, -2 and -3.
- 11.2. Manufacturer: As sanitaryware schedule
 - 11.2.1. Product reference: As sanitaryware schedule
- 11.3. Size: As sanitaryware schedule
- 11.4. Material: As sanitaryware schedule
- 11.5. Depth of seal (minimum): 75 mm.
- 12. Accessories: Concealed support frame

426 Backrests

- 1. Description: As sanitaryware schedule
- 2. Manufacturer: As sanitaryware schedule
 - 2.1. Product reference: As sanitaryware schedule
- 3. Material: As sanitaryware schedule
- 4. Finish/ colour: As sanitaryware schedule

429 Clothes hooks

- 1. Description: As sanitaryware schedule
- 2. Manufacturer: As sanitaryware schedule
 - 2.1. Product reference: As sanitaryware schedule
- 3. Material: As sanitaryware schedule
- 4. Finish/ colour: As sanitaryware schedule

436 Handrails and grab bars

- 1. Description: As sanitaryware schedule
- 2. Manufacturer: As sanitaryware schedule
 - 2.1. Product reference: As sanitaryware schedule
- 3. Type: As sanitaryware schedule
- 4. Material: As sanitaryware schedule
- 5. Colour: As sanitaryware schedule
- 6. Size: As sanitaryware schedule
- 7. Stand-off wall: As sanitaryware schedule

441 Paper roll dispensers

- 1. Manufacturer: As sanitaryware schedule
 - 1.1. Product reference: As sanitaryware schedule
- 2. Material: As sanitaryware schedule
 - 2.1. Width: As sanitaryware schedule
 - 2.2. Finish/ colour: As sanitaryware schedule

442 Paper towel dispensers

- 1. Manufacturer: As sanitaryware schedule
 - 1.1. Product reference: As sanitaryware schedule
- 2. Material: As sanitaryware schedule
- 3. Finish/ colour: As sanitaryware schedule

446 Sanitary product disposal bins

- 1. Description: As sanitaryware schedule
- 2. Manufacturer: As sanitaryware schedule
 - 2.1. Product reference: As sanitaryware schedule

3. Material: As sanitaryware schedule
4. Finish/ colour: As sanitaryware schedule

448 Seats

1. Description: As sanitaryware schedule
2. Manufacturer: As sanitaryware schedule
 - 2.1. Product reference: As sanitaryware schedule
3. Material: As sanitaryware schedule
4. Finish/ colour: As sanitaryware schedule

449 Shelves

1. Description: As sanitaryware schedule
2. Manufacturer: As sanitaryware schedule
 - 2.1. Product reference: As sanitaryware schedule
3. Material: As sanitaryware schedule
4. Finish/ colour: As sanitaryware schedule

458 Soap dispensers

1. Description: As sanitaryware schedule
2. Manufacturer: As sanitaryware schedule
 - 2.1. Product reference: As sanitaryware schedule
3. Type: As sanitaryware schedule
4. Size: As sanitaryware schedule
5. Material: As sanitaryware schedule
6. Finish/ colour: As sanitaryware schedule

460 Toilet brush holders

1. Description: As sanitaryware schedule
2. Manufacturer: As sanitaryware schedule
 - 2.1. Product reference: As sanitaryware schedule
3. Material: As sanitaryware schedule
4. Finish/ colour: As sanitaryware schedule

462 Toilet paper holders

1. Description: As sanitaryware schedule
2. Type: As sanitaryware schedule
3. Manufacturer: As sanitaryware schedule
 - 3.1. Product reference: As sanitaryware schedule
4. Size: As sanitaryware schedule
5. Material/ finish: As sanitaryware schedule
6. Finish/ colour: As sanitaryware schedule

474 Waste bins

1. Description: As sanitaryware schedule
2. Manufacturer: As sanitaryware schedule
 - 2.1. Product reference: As sanitaryware schedule
3. Material: As sanitaryware schedule
4. Finish/ colour: As sanitaryware schedule

494 Baby changing units

1. Description: As sanitaryware schedule
2. Manufacturer: As sanitaryware schedule
 - 2.1. Product reference: As sanitaryware schedule
3. Type: As sanitaryware schedule
4. Size: As sanitaryware schedule
5. Material: As sanitaryware schedule
6. Finish/ colour: As sanitaryware schedule
7. Accessories: As sanitaryware schedule

500 Pre-plumbed frame system

1. Description: As sanitaryware schedule
2. Type: As sanitaryware schedule
3. Manufacturer: As sanitaryware schedule
 - 3.1. Product reference: As sanitaryware schedule
4. Fixing: As sanitaryware schedule

580 Sealant for pointing

1. Standard: To BS EN ISO 11600
 - 1.1. Class: F20 HM
2. Type: Silicone
3. Manufacturer: Submit Proposals
 - 3.1. Product reference: Submit Proposals
4. Colour: Submit Proposals

Execution

610 Installation generally

1. Standards: In accordance with BS 6465-1, -2 and -3.
2. Assembly and fixing: Surfaces designed to falls to drain as intended.
3. Fasteners: Non-ferrous or stainless steel.
4. Fixing: Fix appliances securely to structure. Do not support on pipework.
5. Jointing and bedding compounds: Recommended by manufacturers of appliances, accessories and pipes being jointed or bedded.
6. Appliances: Do not use. Do not stand on appliances.
7. Supply and discharge pipework: Fix before appliances.
8. On completion: Components and accessories working correctly with no leaks.
9. Labels and stickers: Remove.

613 Compatibility of components

1. General: Each sanitary assembly must consist of functionally compatible components, preferably obtained from a single manufacturer.
 - 1.1. Exceptions: Water supply fittings, wastes and traps

620 Noggings and bearers

1. Noggings, bearers, etc. to support sanitary appliances and fittings: Position accurately. Fix securely.

630 Tiled backgrounds other than splashbacks

1. Timing: Complete before fixing appliances.
2. Fixing appliances: Do not overstress tiles.

650 Installing WC pans

1. Floor-mounted pans: Screw fix and fit cover caps over screw heads. Do not use mortar or other beddings.
2. Seat and cover: Stable when raised.

670 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 location where not shown on drawings.

710 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.

720 Installing wastes and overflows

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

755 Sealant bedding and pointing

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

Ω End of Section

N25

Permanent access and safety equipment

Types of system/ equipment

001 Contractor Design Portion

1. System and associated features: Complete detailed design in accordance with this specification and the preliminary design drawings and submit before commencement of fabrication.
2. Standard: Complete the design in accordance with the designated code of practice to satisfy specified performance criteria.
3. Related works: Coordinate in the detailed design.
4. Detailed design: Complete and submit proposals for approval before fabrication or installation.
5. Submission of alternative proposals: Preliminary design drawings indicate intent. Other reasonable proposals will be considered.

210 Personal fall protection equipment

1. Description: Guided type fall arrest system using a cable attached to anchor posts designed for use with most roofing systems.
2. Type: Guided type fall arrest
3. Manufacturer: Submit proposals
 - 3.1. System reference: Submit proposals
4. Anchorage device: Horizontal stainless steel cable
5. Overall system length: Refer to drawings
6. Intermediate support spacing: To manufacturers guidance
7. Accessories/ Other requirements: Stay cable to span between roof access point and fall arrest system
8. Installation: In accordance with BS 7883 by the system manufacturer or a contractor approved by the system manufacturer.
9. Structural anchors: Type recommended by the system manufacturer to suit the structure/ fabric into which they will be fixed.

Design/ performance requirements

430 Safety

1. General: The equipment as installed must have no irregularities/ projections capable of inflicting personal injury.
2. Finished surfaces and edges of all accessible parts: Regular and smooth.

440 Design life/ Maintenance programme

1. Design life of access/ safety system: Not less than warranted life span of system years.
2. Schedule for maintenance and for replacement of components: Submit.

460 Assessment/ Testing of anchor devices

1. Design and testing of anchors: To BS EN 795.

Fabrication, assembly and installation

510 Fabrication and assembly generally

1. Machine cutting, drilling and assembly: Carry out as much as possible in the workshop. Obtain approval for any reassembly on site.
2. Dissimilar metal surfaces of assembly components/ supports/ fixings: Isolate to prevent electrolytic corrosion.

520 Protection

1. General: Do not deliver to site any components or assemblies that cannot be installed immediately or unloaded into a suitable well protected storage area.

530 Suitability of structure/ fabric

1. Visual and geometric survey of supporting structure and fabric: Carry out before commencing installation of access/ safety system. Report immediately if structure/ fabric will not allow required accuracy/ security of erection/ fixing and if structural testing is required.

535 Execution generally

1. Structural members: Do not modify, cut notch or make holes in structural members without permission.
2. Frameworks: Assemble and brace, including temporary members required for installation.
 - 2.1. Temporary support: Do not use access systems as temporary support or strutting for other work.
3. Bolted joints
 - 3.1. Contact between dissimilar metals: Avoid.
 - 3.2. Bolts and washers: Select types, sizes and quantities of fasteners or packings and spacings to retain supported components without distortion or loss of support.
4. Welded joints: Comply with latest edition of National Structural Steelwork Specification (NSSS), Section 5.
5. Finished components: Smooth, free from distortion, cracks, burrs and sharp arrises.

540 Mechanical fixings

1. Materials: Unless otherwise recommended by equipment manufacturer:
 - 1.1. Connecting bolts and other fixings fully accessible for inspection: Carbon steel hot dip galvanized to BS 7371-6.
2. Nuts: Tapped after galvanizing.
 - 2.1. Cast-in anchors and other fixings not accessible for routine inspection: Austenitic stainless steel, grade 1.4401 (316) to BS EN 10088-1.

550 Fasteners, inserts and bolts for building in

1. Supplier: Equipment manufacturer/ supplier.

560 Fixings for securing equipment

1. Adjustment capability: Adequate three dimensional adjustment to accommodate building structure/ fabric irregularities.

570 Fixing anchor installation

1. Site drilling or cutting into structure/ fabric: Permitted only in approved locations.
2. Distance between all fixing devices and edges of supporting material: Not less than recommended by fixing manufacturer.

605 Identification and registration labels for suspended access system

1. Provision
 - 1.1. Suspension rig and any non-dedicated track systems: Provide and fix a permanent label giving:
 - 1.1.1. a) Manufacturer's name, address and telephone number.
 - 1.1.2. b) Name and/ or reference code of model.
 - 1.1.3. c) Serial number and year of manufacture.
 - 1.1.4. d) Rated load of suspended platform (where the platform is permanently attached to the system) or maximum total suspended load (where the platform can be derigged).
 - 1.2. Suspended platform: As a), b) and c) above, plus

- 1.2.1. d) Rated load and self weight in kg of the platform.
- 1.2.2. e) Maximum number of persons allowed on the platform.
- 1.2.3. f) Identification mark or number of the suspension rig or rigs with which the platform is compatible (where the platform can be derigged).
- 1.3. Suspension and safety ropes (detachable): Marked with length and unique identification number.
2. Location: In positions such that labels can be easily read.

610 Identification and registration labels for other equipment

1. Description: All safety equipment for access and maintenance
2. Provision: Provide and fix to each piece of equipment a permanent label giving:
 - 2.1. Manufacturer's name, address and telephone number.
 - 2.2. Name and/ or reference code of model.
 - 2.3. Serial number and year of manufacture.
 - 2.4. Maximum load (in kilograms) that may be sustained by the equipment.
3. Location: In positions such that labels can be easily read.

615 UKCA/ UKNI/ CEmarking and declaration of conformity of permanently installed suspended access equipment

1. Marking: Equipment to be clearly labelled with a UKCA/ UKNI/ CE mark indicating conformity with the current edition of the Supply of Machinery (Safety) Regulations.
2. Declaration of conformity: Provide for the complete installation a declaration of conformity with Machinery Directive 2006/42/EC together with certificates of incorporation for parts not supplied or installed by the main equipment manufacturer or supplier.

630 Lifting equipment configuration

1. General: Where the rated load of machinery for lifting depends on its configuration, the identification and registration labels and rated load notices must indicate the rated load for each configuration.

640 Marking of anchor devices

1. Provision: Provide on or near each anchor device a label or other clear marking giving:
 - 1.1. Manufacturer's name and telephone number.
 - 1.2. Serial number and year of manufacture of device.
 - 1.3. Maximum number of personnel that may be attached to the device at any one time.
 - 1.4. Requirements for energy absorbers, ground clearance, etc.
2. Anchor devices intended solely for use with personal protective equipment: Indicate restriction of use by pictogram or other suitable marking on or near the device.

810 Service/ Maintenance

1. Description: For all systems required for access and maintenance
2. General: Following acceptance of the completed installation, service and maintain the equipment for the period stated below as and at intervals recommended by the manufacturer. Such maintenance to include a 'call-out' service during normal working hours to maintain the equipment in an acceptable and safe condition.
3. Service/ Maintenance period: Every 3 months for 12 months

820 Operating instructions

1. Equipment and accessories: Where appropriate, mark in such a way that it is possible to identify the correct mode of operation for their safe use.

830 Operating and maintenance manual

1. General: Provide, for inclusion in the Building Manual, printed instructions and recommended procedures to be established by the Employer for operating and routinely maintaining the equipment. Provide diagrams where appropriate.
2. Content
 - 2.1. Instructions for assembling/ erecting equipment for use.
 - 2.2. Comprehensive operating instructions, including safety and emergency procedures, for all motions including upward, downward and lateral travel, and slew.
 - 2.3. Servicing and planned maintenance procedures, including assembly instructions where maintenance necessitates dismantling of machinery parts.
 - 2.4. List of replacement parts, with references.
 - 2.5. Recommended procedures for testing equipment.

840 As installed drawings

1. General: After commissioning/ testing of the equipment provide as installed drawings for inclusion in the Building Manual.
 - 1.1. Number of sets: One per O&M manual
2. Drawing content
 - 2.1. Contractor's name and contract number.
 - 2.2. Location and date of installation.
 - 2.3. Manufacturer's name, model and type numbers.
 - 2.4. General arrangement of the complete installation.
 - 2.5. Electrical circuit wiring diagrams complete with details and ratings of all items of equipment.

Ω End of Section

P10 **Sundry insulation/ proofing work**

Types of insulation

190 Insulation fitted between studs

1. Manufacturer: Rockwool Ltd
 - 1.1. Product reference: Rockwool Flexi
2. Material: Mineral Wool
 - 2.1. Facing: Unfaced
3. Recycled content: As supplied.
4. Thickness: As per drawings
5. Installation requirements
 - 5.1. Joints: Butted, no gaps.
 - 5.2. Fasteners: Use where necessary to retain insulation and/ or prevent slumping.

310 Air and vapour control layer

1. Description: To timber framing
2. Manufacturer: DuPont Tyvek
 - 2.1. Product reference: Airguard Smart
3. Material: High density polyethylene (HDPE)
4. Minimum vapour resistance: 250 MN s/g
5. Installation requirements
 - 5.1. Setting out: Joints minimized.
 - 5.2. Method of fixing: Staples at 250 mm centres maximum along all timber frames and supports; membrane not sagging
 - 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.
6. Penetrations: Sealed.
7. Other requirements: Moisture content of timber at time of fixing (maximum): 20%. Prime substrates as necessary

Ω End of Section

P20 **Unframed isolated trims/ skirtings/ sundry items**

To be read with preliminaries/ general conditions

110 Softwood

1. Description: Skirtings Generally
2. Quality of wood and fixing: To BS 1186-3.
 - 2.1. Species: Pine
 - 2.2. Class: CSH, 1
3. Moisture content at time of fixing: 9-13%
4. Preservative treatment: Not required
5. Reaction to fire rating: To BS EN 13501-1, Class B.
6. Profile: As drawing
 - 6.1. Finished size: As shown on drawings
7. Finish as delivered: Prepared and primed, as section M60
8. Fixing: Plugged, screwed and pelleted

Execution

510 Installation generally

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**

Pre-tender

10 Quantities and locations

1. Quantities and locations of ironmongery: Provided in the schedules
2. Fixing: As sections L10 and L20.

General

120 Ironmongery range selected by contractor

1. Source: Single coordinated range.
2. Notification: Submit details of selected range, manufacturer and/ or supplier.
3. Principal material/ finish: Satin stainless steel, Grade 1.4401 (316)
4. Items unavailable within selected range: Submit proposals.

121 Ironmongery from single proprietary range

1. Manufacturer: Allgood Ltd
 - 1.1. Product reference: Refer to schedule
2. Principal material/ finish: Satin stainless steel, Grade 1.4401 (316)
3. Items unavailable within selected range: Submit proposals.

140 Samples

1. General: before placing orders with suppliers submit labelled samples of the following: All items .
 - 1.1. Conformity: Retain samples on site for the duration of the contract. Ensure conformity of ironmongery as delivered with labelled samples

170 Ironmongery for fire doors

1. Relevant products: Ironmongery fixed to, or morticed into, the component parts of a fire-resisting door assembly
2. Compliance: Ironmongery included in successful tests to [BS EN 1634-1](#) on door assemblies similar to those proposed
 - 2.1. Certification: Submit CERTIFIRE certificates
3. Melting point of components (except decorative non-functional parts): 800°C minimum.

180 Strength class or category of duty for door ironmongery

1. Requirement: To [BS EN 1192](#), Class 2
2. General: Durability of ironmongery components to be compatible with stated category of duty of each door leaf.
 - 2.1. Exclusions: Ironmongery with specific duty or 'category of use' defined elsewhere.
 - 2.2. Documentation: Before placing orders with suppliers submit documentation showing product compliance with stated category of duty.

Door hanging devices

320 Door hinges

1. Description: Generally
2. Manufacturer: Allgood Ltd
 - 2.1. Product reference: Refer to ironmongery schedule
3. Type: Refer to ironmongery schedule
4. Size: Refer to ironmongery schedule
5. Material/ finish: Refer to ironmongery schedule

6. Other requirements: Refer to ironmongery schedule

Window hanging devices - Not Used

Door operating devices

410 Controlled door closers

1. Description: Generally
2. Standard: To [BS EN 1154](#).
3. Manufacturer: Allgood Ltd
 - 3.1. Product reference: Refer to ironmongery schedule
4. Type: Refer to ironmongery schedule
5. Power size: Refer to ironmongery schedule
6. Other functions: Refer to ironmongery schedule
7. Materials and finishes
 - 7.1. Bodies: Refer to ironmongery schedule
 - 7.2. Arms: Refer to ironmongery schedule
 - 7.3. Casings: Refer to ironmongery schedule
8. [Operational adjustment](#)
 - 8.1. Variable power: Matched to size, weight and location of doors.
 - 8.2. Latched doors: Override latches and/ or door seals when fitted.
 - 8.3. Unlatched doors: Hold shut under normal working conditions.
 - 8.4. Closing against smoke seals of fire doors: Positive. No gaps.

450 Floor springs

1. Description: Generally
2. Standard: To [BS EN 1154](#).
3. Manufacturer: AllGood Ltd
 - 3.1. Product reference: Refer to ironmongery schedule
4. Power size: Refer to ironmongery schedule
5. Other functions: Refer to ironmongery schedule
6. Material/ finish: Refer to ironmongery schedule
7. [Operational adjustment](#)
 - 7.1. Variable power: Matched to size, weight and location of doors.
 - 7.2. Latched doors: Override latches and/ or door seals when fitted.
 - 7.3. Unlatched doors: Hold shut under normal working conditions.
 - 7.4. Closing against smoke seals of fire doors: Positive. No gaps.

471 Electromagnetic hold-open/ swing-free devices

1. Description: To entrance doors
2. Standard: To [BS EN 1155](#).
3. Manufacturer: Dormakaba UK & Ireland Ltd
 - 3.1. Product reference: Submit Proposals
4. Type: Electromechanical Swing Door Operator
5. Material/ finish: Powder coated to match door frame
6. Means of release: Alarm system and/ or failure of power supply.
7. Test switch: Located in a convenient position adjacent to door.
8. [Operational adjustment of integral closer](#)
 - 8.1. Variable power: Matched to size, weight and location of doors.

- 8.2. Latched doors: Override latches and/ or door seals when fitted.
- 8.3. Unlatched doors: Hold shut under normal working conditions.

Door securing devices

515 Door locks

- 1. Description: Generally
- 2. Standard: To [BS EN 12209](#).
- 3. Manufacturer: Refer to schedule
 - 3.1. Product reference: Refer to schedule
- 4. Type: Refer to schedule
- 5. Backset: Refer to schedule
- 6. Material/ finish: Refer to schedule
- 7. Keying: In master keyed suite

Window securing devices - Not Used

Door furniture

641 Pull handles

- 1. Description: Generally
- 2. Standard: To [BS 8424](#).
- 3. Manufacturer: Refer to ironmongery schedule
 - 3.1. Product reference: Refer to ironmongery schedule
- 4. Shape: Refer to drawings
- 5. Distance between centres: Refer to ironmongery schedule
- 6. Material/ finish: Refer to ironmongery schedule
- 7. Mounting: Refer to drawings
- 8. Additional requirements: None

642 Bespoke Pull handles

- 1. Description: Generally
- 2. Standard: To [BS 8424](#).
- 3. Manufacturer: Submit proposals
 - 3.1. Product reference: Submit proposals
- 4. Shape: Refer to drawings
- 5. Diameter: Refer to drawings
- 6. Distance between centres: Refer to ironmongery schedule
- 7. Material/ finish: Polished brass
- 8. Mounting: Concealed fixings
- 9. Additional requirements: None

670 Push plates

- 1. Description: Generally
- 2. Manufacturer: Allgood Ltd
 - 2.1. Product reference: Refer to ironmongery schedule
- 3. Size: Refer to ironmongery schedule
- 4. Material/ finish: Refer to ironmongery schedule
- 5. Mounting: Refer to ironmongery schedule
- 6. Additional requirements: Screw heads colour matched to plate

690 Kick plates

1. Description: Generally
2. Manufacturer: Allgood Ltd
 - 2.1. Product reference: Refer to schedule
3. Size: Refer to schedule
4. Material/ finish: Refer to schedule
5. Mounting: Refer to schedule
6. Additional requirements: Screw heads colour matched to plate

710 Escutcheons

1. Description: Generally
2. Manufacturer: Allgood Ltd
 - 2.1. Product reference: Refer to sanitaryware schedule
3. Material/ finish: Refer to sanitaryware schedule
4. Keyhole type: Refer to sanitaryware schedule
5. Usage: Refer to sanitaryware schedule

720 Door stops

1. Manufacturer: Generally
 - 1.1. Product reference: Refer to sanitaryware schedule
2. Type: As schedule
3. Usage: As schedule

760 Door holders

1. Description: Generally
2. Manufacturer: Allgood Ltd
 - 2.1. Product reference: Refer to sanitaryware schedule
3. Type: Refer to sanitaryware schedule
4. Size: Refer to sanitaryware schedule
5. Material/ finish: Refer to sanitaryware schedule

811 Door-mounted coat hooks

1. Description: Generally
2. Manufacturer: Allgood Ltd
 - 2.1. Product reference: Refer to sanitaryware schedule
3. Type: Refer to sanitaryware schedule
4. Material/ finish: Refer to sanitaryware schedule

Window furniture - Not Used

Ω End of Section

P30

Trenches, pipeways and pits for buried engineering services

General - Not Used

System performance - Not Used

Products

301 Access covers, manhole tops and frames

1. Description: Floor access cover
2. Standard: To BS EN 124-1 and BS EN 124-2
3. Manufacturer: Howe Green Ltd.
 - 3.1. Product reference: Visedge Series Cover (Aluminium) Multipart
4. Material: Aluminium
5. Class: A15.

411 Selected as-dug material

1. Material: Selected, free from vegetable matter, rubbish, frozen soil and excluding lumps and stones retained on a 40 mm sieve.

Execution - Not Used

Completion

920 Testing

1. Timing: Where services require testing as set out in the respective work section; undertake tests before backfilling the service
2. Notice for inspection (minimum): Five days
3. Defects: Report immediately.

930 Documentation

1. Record drawings: Submit
2. Submittal date: At handover

Ω End of Section

Q23

Gravel/ hoggin/ woodchip/ resin bound roads/ pavings/ overlays

Types of surfacing

160 Loose gravel

1. Description: To rear terrace
2. Manufacturer: Submit proposals
 - 2.1. Product reference: Submit proposals
3. Geotextile: Sheet
4. Gravel: Loose laid and raked to uniform thickness.
 - 4.1. Type: To match existing
 - 4.2. Source: Submit proposals
 - 4.3. Colour: To match existing
 - 4.4. Size: To match existing
 - 4.5. Thickness: 75mm
5. Additional requirements: Drainage Layer

Laying

315 Materials

1. Compatibility: Chippings suitable for use with respective binders/ emulsions/ resin/ epoxy.

320 Samples

1. Submit: Representative samples of 160.

340 Laying generally

1. Channels, gullies, etc: Keep clear.
2. Finished surfaces
 - 2.1. Lines and levels: To prevent ponding.
 - 2.2. Overall texture: Even.
 - 2.3. State at completion: Clean.

350 Cold weather working

1. Frozen materials: Do not use.
2. Freezing conditions: Do not lay pavings.
3. Cold bituminous surface dressings: Do not apply when ambient temperature is below 10°C.
4. Other dressings or overlays: As manufacturers' recommendations.

360 Drainage falls

1. Sealed surfaces
 - 1.1. Falls and cross falls (minimum): 1:40.
 - 1.2. Camber (minimum): 1:50.
2. Unsealed surfaces (minimum): 1:30.

380 Laying granular surfaces in pedestrian areas and cycle tracks

1. Permissible deviation from required levels, falls and cambers (maximum): ± 12 mm.
2. General: Spread and level in 100 mm maximum layers. As soon as possible, compact each layer.
3. Dry weather: Lightly water layers during compaction.

390 Protection from traffic and plant

1. Paved areas: Restrict access to prevent damage.

Completion - Not Used

Ω End of Section

Q50 **Site/ street furniture/ equipment**

Gates, barriers and parking controls

120 Steel gate

1. Description: To underside of east drawbridge
2. Manufacturer: Submit proposals
 - 2.1. Product reference: Submit proposals
3. Standard: To BS 4092-1.
4. Materials and workmanship: As section Z11.
5. Jointing: TIG Welded where visible. MIG welded where concealed.
6. Finish as delivered: Galvanised mild steel with t-wash chemical solution
 - 6.1. Colour: To be agreed via sample process
7. Fittings and accessories: One pair strap hinges, auto gate latch, gate stop, all galvanized to BS EN ISO 1461.
8. Infill: Wire mesh infill - Jakob Webnet A 1mm or equal approved
9. Method of setting posts: Concrete footing

Site and street furniture - Not Used

Installation

520 Setting in earth

1. Holes: As small as practicable.
2. Components being fixed: Accurately positioned and securely supported.
3. Buried depth (minimum): 250 mm
4. Earth refill: Well rammed as filling proceeds.

550 Damage to galvanized surfaces

1. Minor damage in areas up to 40 mm² (including on fixings and fittings): Make good.
 - 1.1. Material: Low melting point zinc alloy repair rods or powders made for this purpose or at least two coats of zinc-rich paint to BS 4652.
 - 1.2. Thickness: Sufficient to provide a zinc coating at least equal to the original layer.

560 Site painting

1. Timing: Prepare surfaces and apply finishes as soon as possible after fixing.

Ω End of Section

Z11 **Purpose made metalwork**

To be read with preliminaries/ general conditions.

310 Materials generally

1. Grades of metals, section dimensions and properties: To appropriate British Standards. When not specified, select grades and sections appropriate for the purpose.
2. Prefinished metal: May be used if methods of fabrication do not damage or alter appearance of finish, and finish is adequately protected.
3. Fasteners: To appropriate British Standards and, unless specified otherwise, of same metal as component being fastened, with matching coating or finish.

320 Steel long and flat products

1. Hot rolled structural steels (excluding structural hollow sections and tubes): To BS EN 10025-1.
2. Fine grain steels, including special steels: To BS EN 10025-3 and -4.
3. Steels with improved atmospheric corrosion resistance: To BS EN 10025-5.

330 Steel plate, sheet and strip

1. Plates and wide flats, high yield strength steel: To BS EN 10025-6.

340 Hot rolled steel plate, sheet and strip

1. Flat products, high yield strength for cold forming: To BS EN 10149-1, -2 and -3.
2. Carbon steel sheet and strip for cold forming: To BS EN 10111.
3. Narrow strip, formable steel and steel for general engineering purposes: To BS 1449-1.8 and BS 1449-1.14.

350 Cold rolled steel plate, sheet and strip

1. Steel sections: To BS EN 10162.
2. Flat products, high yield strength micro-alloyed steels for cold forming: To BS EN 10268.
3. Carbon steel flat products for cold forming: To BS EN 10130 and BS EN 10131.
4. Uncoated carbon steel narrow strip for cold forming: To BS EN 10139 and BS EN 10140.
5. Narrow strip steel for general engineering purposes: To BS EN 10132-1, -2, and -3.
6. Carbon steel flat products for vitreous enamelling: To BS EN 10209.

360 Coated steel flat products

1. Hot dip zinc coated carbon steel sheet and strip for cold forming: To BS EN 10346 and BS EN 10143.
2. Hot dip zinc coated structural steel sheet and strip: To BS EN 10143 and BS EN 10346.
3. Hot dip zinc-aluminium (za) coated sheet and strip: To BS EN 10346.
4. Hot dip aluminium-zinc (az) coated sheet and strip: To BS EN 10346.
5. Organic coated flat products: To BS EN 10169.

370 Steel structural hollow sections (SHS)

1. Non alloy and fine grain steels, hot finished: To BS EN 10210-1 and -2.
2. Non-alloy and fine grain steels, cold formed welded: To BS EN 10219-2.
3. Weather resistant steels, hot finished: To BS 7668.

380 Other steel sections

1. Equal flange tees: To BS EN 10055.
2. Equal and unequal angles: To BS EN 10056-1 and -2.
3. Wire, carbon steel for general engineering purposes: To BS 1052.
4. Wire and wire products, general: To BS EN 10218-2.

5. Tubes

- 5.1. Seamless circular: To BS EN 10297-1.
- 5.2. Seamless cold drawn: To BS EN 10305-1.
- 5.3. Welded and cold sized square and rectangular: To BS EN 10305-5.
- 5.4. Welded circular: To BS EN 10296-1.
- 5.5. Welded cold drawn: To BS EN 10305-2.
- 5.6. Welded cold sized: To BS EN 10305-3.

400 Stainless steel products

- 1. Chemical composition and physical properties: To BS EN 10088-1.
- 2. Sheet, strip and plate: To BS EN 10088-2.
- 3. Semi-finished products bars, rods and sections: To BS EN 10088-3.
- 4. Wire: To BS EN 1088-3.
- 5. Tubes
 - 5.1. Welded circular: To BS EN 10296-2.
 - 5.2. Seamless circular: To BS EN 10297-2.

410 Aluminium alloy products

- 1. Designations
 - 1.1. Designation system, chemical composition and forms: To BS EN 573-1, -2, -3 and -5.
 - 1.2. Temper designations: To BS EN 515.
- 2. Sheet, strip and plate: To BS EN 485-1 to -4.
- 3. Cold drawn rods, bars and tubes: To BS EN 754-1 and -2.
- 4. Extruded rods, bars, tubes and profiles: To BS EN 755-1 and -2.
- 5. Drawn wire: To BS EN 1301-1, -2 and -3.
- 6. Rivet, bolt and screw stock: To BS 1473.
- 7. Structural sections: To BS 1161.

420 Copper alloy products

- 1. Sheet, strip, plate and circles for general purposes: To BS EN 1652.
- 2. Sheet and strip for building purposes: To BS EN 1172.
- 3. Rods: To BS EN 12163.
- 4. Profiles and rectangular bars: To BS EN 12167.
- 5. Wire: To BS EN 12166.
- 6. Tubes: To BS EN 12449.

Fabrication

515 Fabrication generally

- 1. Contact between dissimilar metals in components: Avoid.
- 2. Finished components: Rigid and free from distortion, cracks, burrs and sharp arrises.
 - 2.1. Moving parts: Free moving without binding.
- 3. Corner junctions of identical sections: Mitre.

520 Cold formed work

- 1. Profiles: Accurate, with straight arrises.

525 Adhesive bonding

- 1. Preparation of surfaces of metals to receive adhesives
 - 1.1. Degrease.

- 1.2. Abrade mechanically or chemically etch.
- 1.3. Prime: To suit adhesive.
2. Adhesive bond: Form under pressure.

527 Welding

1. Description: Steel components
2. **Welding procedures**
 - 2.1. Method and standard: MIG welding to BS EN 1011-4
 - 2.2. Welding Procedure Specification (WPS): Not required
3. **Preparation**
 - 3.1. Joint preparation: Clean thoroughly.
 - 3.2. Surfaces of materials that will be self-finished and visible in the completed work: protect from weld splatter.
4. **Jointing**
 - 4.1. Joints: Fully bond parent and filler metal throughout with no inclusions, holes, porosity or cracks.
 - 4.2. Dissimilar metals: Welding not permitted
 - 4.3. Strength requirements: Welds to achieve design loads.
 - 4.4. Heat straightening: Not permitted
 - 4.5. Complex assemblies: Agree priority for welding members to minimize distortion caused by subsequent welds.
 - 4.6. Tack welds: Use only for temporary attachment.
 - 4.7. Jigs: Provide to support and restrain members during welding.
 - 4.8. Filler plates: Obtain approval
 - 4.9. Lap joints: Minimum 5 x metal thickness or 25 mm, whichever is greater.
 - 4.10. Weld terminations: Clean and sound.

530 Stainless steel fabrication

1. Guillotining or punching: Do not use for metal thicknesses greater than 10 mm.
2. **Thermal cutting**
 - 2.1. Carbonation in the heat affected zone: Remove, after cutting.
3. **Bending**
 - 3.1. Plates or bars: Cold bending radius not less than material thickness.
 - 3.2. Tubes: Cold bending radius not less than 2 x tube diameter.
4. Welding: In addition to general welding requirements:
 - 4.1. Protect adjacent surfaces from weld spatter.
 - 4.2. Pickle all welds before post fabrication treatments.
5. Protection: Provide protection to fabricated components during transit and on site.

555 Brazing

1. Standard: To BS EN 14324.
2. **Testing**
 - 2.1. Destructive testing: To BS EN 12797.
 - 2.2. Nondestructive testing: To BS EN 12799.

Finishing

710 Finishing welded and brazed joints visible in complete work

1. Standard: To BS EN ISO 8501-3.

- 1.1. Preparation grade: P1
2. Butt joints: Smooth, and flush with adjacent surfaces.
3. Fillet joints: Neat.
4. Grinding: Grind smooth where indicated on drawings.

745 Preparation for application of coatings

1. General: Complete fabrication, and drill fixing holes before applying coatings.
2. Paint, grease, flux, rust, burrs and sharp arrises: Remove.

750 Liquid organic coating for aluminium alloy components

1. Standard: To BS 4842.

760 Zinc and cadmium plating of iron and steel surfaces

1. Zinc plating: To BS EN ISO 2081.
2. Cadmium plating: To BS EN ISO 2082.

770 Chromium plating

1. Standard: To BS EN ISO 1456.

780 Galvanizing

1. Standard: To BS EN ISO 1461.
2. Preparation
 - 2.1. Vent and drain holes: Provide in accordance with BS EN ISO 14713-1 and -2. Seal after sections have been drained and cooled.
 - 2.2. Components subjected to cold working stresses: Heat treat to relieve stresses before galvanizing.
 - 2.3. Welding slag: Remove.
 - 2.4. Component cleaning: To BS EN ISO 8501-3.
 - 2.5. Grade: St 2½

790 Vitreous enamelling

1. Standard: To BS EN ISO 28722.
2. Substrate metal: Steel to BS EN 10209.

Completion

910 Documentation

1. Submit
 - 1.1. Manufacturer's maintenance instructions.
 - 1.2. Guarantees, warranties, test certificates, record schedules and log books.

920 Completion

1. Protection: Remove.
2. Cleaning and maintenance: Carry out in accordance with procedures detailed in fabricators' guarantees.

Ω End of Section

Z21 Mortars

Cement gauged mortars

110 Cement gauged mortar mixes

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

120 Sand for site made cement gauged masonry mortars

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.

160 Cements for mortars

1. Cement: To BS EN 197-1 and CE marked.
 - 1.1. Types: Portland cement, CEM I.
 - 1.1.1. Portland limestone cement, CEM II/A-L or CEM II/A-LL.
2. Portland slag cement, CEM II/B-S.
3. Portland fly ash cement, CEM II/B-V.
 - 3.1. Strength class: 32.5, 42.5 or 52.5.
4. White cement: To BS EN 197-1 and CE marked.
 - 4.1. Type: Portland cement, CEM I.
 - 4.2. Strength class: 52.5.
5. Sulfate resisting Portland cement
 - 5.1. Type: To BS EN 197-1 Sulfate resisting Portland cement, CEM I/SR and CE marked.
6. To BS EN 197-1 fly ash cement, CEM II/B-V and CE marked.
 - 6.1. Strength class: 32.5, 42.5 or 52.5.
7. Masonry cement: To BS EN 413-1 and CE marked.
 - 7.1. Class: MC 12.5.

180 Admixtures for site made cement gauged mortars

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 mortar

1. Standard: To 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.

200 Storage of cement gauged mortar materials

1. Sands and aggregates: Keep different types/ grades in separate stockpiles on hard, clean, free-draining bases.
2. Factory made ready-mixed lime:sand/ ready to use retarded mortars: Keep in covered containers to prevent drying out or wetting.
3. Bagged cement/ hydrated lime: Store off the ground in dry conditions.

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 - Not Used

Ω End of Section

Z22 **Sealants**

Products

310 Joints

1. Description: Generally
2. Manufacturer: Submit proposals
 - 2.1. Product reference: Submit proposals
3. Primer, backing strip, bond breaker: Types recommended by sealant manufacturer.
4. Fire performance
 - 4.1. Fire resistance: Manufacturer's standard
 - 4.2. Reaction to fire (for rateable products): Manufacturer's standard

Execution

610 Suitability of joints

1. Presealing checks
 - 1.1. Joint dimensions: Within limits specified for the sealant.
 - 1.2. Substrate quality: Surfaces regular, undamaged and stable.
2. Joints not fit to receive sealant: Submit proposals for rectification

620 Preparing joints

1. Surfaces to which sealant must adhere
 - 1.1. Remove temporary coatings, tapes, loosely adhering material, dust, oil, grease, surface water and contaminants that may affect bond.
 - 1.2. Clean using materials and methods recommended by sealant manufacturer.
2. Vulnerable surfaces adjacent to joints: Mask to prevent staining or smearing with primer or sealant.
3. Backing strip and/ or bond breaker installation: Insert into joint to correct depth, without stretching or twisting, leaving no gaps.
4. Protection: Keep joints clean and protect from damage until sealant is applied.

630 Applying sealants

1. Substrate: Dry (unless recommended otherwise) and unaffected by frost, ice or snow.
2. Environmental conditions: Do not dry or raise temperature of joints by heating.
3. Sealant application: Fill joints completely and neatly, ensuring firm adhesion to substrates.
4. Sealant profiles
 - 4.1. Butt and lap joints: Slightly concave.
 - 4.2. Fillet joints: Flat or slightly convex.
5. Protection: Protect finished joints from contamination or damage until sealant has cured.

Ω End of Section



Specification created using NBS Chorus