TRELLICK TOWER CLUB ROOM REFURBISHMENT

MATERIALS AND WORKMANSHIP SPECIFICATION

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CONTENTS

H71 LEAD SHEET COVERINGS / FLASHINGS

Specification of leaded flashings etc as required by Metal Frame Glazing installer

H71/30 APRON FLASHINGS

- Lead:
  - Thickness: 1.75 or 1.80 mm (Code 4).
- Dimensions:
  - Lengths: Not more than 1500 mm.
  - End to end joints: Laps not less than 100 mm.
  - Upstand not less than 75 mm.
- Cover to abutment: Not less than 220mm.
- Fixing:
  - Top edge: Lead wedges into bed joint.
  - Bottom edge: Clips.
- Spacing: 500mm centres.

H71/41 SOAKERS AND STEP FLASHINGS

- Lead soakers:
- Lead:
  - Thickness: 1.75 or 1.80 mm (Code 4).
- Dimensions:
  - Length: Slate/ tile gauge + lap + 25 mm.
  - Upstand: Not less than 75 mm.
  - Underlap: Not less than 100 mm.
- Lead step flashings:
- Lead:
  - Thickness: 1.75 or 1.80 mm (Code 4).
- Dimensions:
  - Lengths: Not more than 1500mm.
  - End to end joints: Laps not less than 100 mm.
- Cover: Overlap to soaker upstands of not less than 65 mm.
- Fixing: Lead wedges at every course.

H71/45 STEP AND COVER FLASHINGS

- Lead:
  - Thickness: 1.75 or 1.80 mm (Code 4).
- Dimensions:
  - Lengths: Not more than 1500 mm.
  - End to end joints: Laps not less than 100 mm.
- Upstand: Not less than 85 mm.
- Cover to roof: Not less than 150 mm.
- Fixing:
  - Top edge: Lead wedges at every course.
  - Bottom edge: Clips.
- Spacing: 500mm centres.

H71/50 FLASHINGS GENERALLY

- Lead:
  - Thickness: 1.75 or 1.80 mm (Code 4).
- Dimensions:
  - Lengths: Not more than 1500 mm.
- Fixing: Nail top edge at 150mm centres and welt edge. Clip bottom edge at laps and 500mm centres.

H71/60 MATERIALS AND WORKMANSHIP GENERALLY

- Lead production method:
  - Rolled, to BS EN 12588.
- Machine cast: BBA certified.
- Identification: Colour marked for thickness/ code, weight and type.
- Workmanship standard: To BS 6915 and latest editions of 'Rolled lead sheet. The complete manual' published by the Lead Sheet Association.
- Fabrication and fixing: To provide a secure, free draining and weathertight installation.
- Marking out: Do not use scribers or other sharp instruments to mark out lead without approval.
- Solder: Use only where specified.
- Finished leadwork: Fully supported, adequately fixed to resist wind uplift but also able to accommodate thermal movement without distortion or stress.
- Patination oil: Apply smear coating to all visible lead, evenly in one direction and in dry conditions as soon as possible after laying. Oil by Midland Lead or equal approved
- Cleanliness of material: If lead arrives on site stained and marked, clean with Midland Lead Cleaning Gel prior to applying patination per the manufacturer recommendations.

H71/62 LEAD WELDING

- In situ lead welding: Not permitted on site
- Templating / mocking up and welding and then removal to workshop area offsite preferred

H71/75 TIMBER FOR USE WITH LEADWORK

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

H71/76 UNDERLAY

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

H71/78 FIXING LEAD SHEET

- Top edge: Secured with two rows of fixings, 25 and 50 mm from edge.
- Fixings:
  - Nails to timber substrates: Copper clout nails to BS 1202-2, or stainless steel (austenitic) clout nails to BS 1202-1.
  - Shank type: Annular ringed, helical threaded or serrated.
- Length: Not less than 20 mm or equal to substrate thickness.
- Screws to concrete or masonry substrates: Brass or stainless steel to BS 1210.
- Diameter: Not less than 3.35 mm.
- Length: Not less than 19 mm.
- Washers and plastics plugs: Compatible with screws.

H71/80 CLIPS

- Material:
  - Lead clips: Cut from sheets of the same thickness/ code as sheet being secured.
- Copper clips: Cut from 0.70 mm thick sheet to BS EN 1172, temper R220 (soft) or R240 (half hard) depending on position, dipped in solder if exposed to view.
- Stainless steel: Cut from 0.38 mm sheet to BS EN 10088, grade 1.4301(304), terne coated if exposed to view.

- Dimensions:
    - Width: 50 mm where not continuous.
- Length: To suit detail.
- Fixing clips: Secure each to substrate with either two screw or three nail fixings not more than 50 mm from the edge of lead sheet. Use additional fixings where lead downstands exceed 75 mm.
- Fixing lead sheet: Welt clips around edges and turn over 25 mm.

H71/83 WEDGE FIXING INTO JOINTS/ CHASES

- Joint/ chase: Rake out to a depth of not less than 25 mm.
- Lead: Dress into joint/ chase.
- 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.
- Sealant: In accordance with BS EN ISO 11600. Sealant to be suitable for joint width.
- Application: As section Z22.

H71/85 WEDGE FIXING INTO DAMP PROOF COURSE JOINTS

- Joint: Rake/ cut out under damp proof course to a depth of not less than 25 mm.
- Lead: Dress into joint.
- 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.
- Sealant: In accordance with BS EN ISO 11600. Sealant to be suitable for joint width.
- Application: As section Z22.

H71/92 WOOD CORED ROLL JOINTS WITH SPLASH LAP

- Wood core:
    - Size: 45 x 45 mm round tapering to a flat base 25 mm wide.
- Fixing to substrate: Brass or stainless steel screws at 300 mm centres.
- Undercloak: Dress three quarters around core.
- Fixing: Nail to core at 150 mm centres for one third length of the sheet starting from the head.
- Overcloak: Dress around core and extend on to main surface to form a 40 mm splash lap.

H71/94 DRIPS WITH SPLASH LAPS

- Underlap: Dress into rebate along top edge of drip.
- Fixing: One row of nails on centre line of rebate.
- Overlap: Dress over drip and form a 40 mm splash lap.

H71/96 DRIPS WITH SPLASH LAPS

- Underlap: Dress up full height of drip upstand.
- Fixing: Two rows of nails to lower level substrate. Seal over nails with a soldered or lead welded dot.
- Overlap: Dress over drip and form a 75 mm splash lap.
- Fixing: Lead clips lead welded to underlap at bay centres.

H71/98 WELTED JOINTS

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

K10 PLASTERBOARD DRY LINING / PARTITIONS / CEILINGS

K10 / 50 MOISTURE RESISTANT CEILING TO: 1.03 KITCHEN, 1.02 FOYER, 1.04 TOILETS

- Manufacturer: British Gypsum Limited.
- Product reference: GypCeiling MF
- System Code: C106046 MR1 (EN)
- Suspended ceiling fixed to structure and lined with an inner layer of Gyproc FireLine 12.5mm and an outer layer of Gyproc FireLine MR 12.5mm with 25mm stone mineral wool slabs (100kg/m3) laid over Gypframe MF5 Ceiling sections.
- **Performance criteria: NB - to be finalised after Fire Engineer Review**
  - Fire resistance to BS EN 1364-2,Fire resistance tests for non-loadbearing elements - Ceilings.
  - Fire Integrity (mins) : 30
  - Fire Insulation (mins) : 30
- Primary framework — Gypframe MF7 Primary Support Channel
- Perimeter framing — Gypframe MF6 Perimeter Channel
- Framework fixing (alternative) — Gypframe MF9 Connecting Clip
- Suspension type (alternative) — Gypframe FEA1 Steel Angle
- Secondary framework — Gypframe MF5 Ceiling Section
- Suspension type — Gypframe MF8 Strap Hanger
- Soffit connection — Gypframe MF12 Soffit Cleat
- Ceiling board
  - Layer 1: — Gyproc FireLine 12.5mm
  - Layer 2: — Gyproc FireLine MR 12.5mm
- Ceiling screws
  - Layer 1: — British Gypsum Drywall Screws 25mm
  - Layer 2: — British Gypsum Drywall Screws 35mm
- Suspension fixing — British Gypsum Drywall Screws 35mm; British Gypsum Wafer Head Jack-Point Screws 13mm
- Insulation — Layer 1: 25mm stone mineral wool (100kg/m3)
- Sealant — Gyproc Sealant
- Framework fixing — British Gypsum Wafer Head Jack-Point Screws 13mm
- Framework Fixing: — Ceiling sections fixed to the primary soffit using wafer head screws or clips.
- Finishing Requirements: as per **K10/67**
- Load Bearing: No
- Maximum Ceiling Load (kg/m2): 30 kg/m^2
- Other Requirements: SpecSure® system performance warranty confirms that British Gypsum proprietary systems will perform as specified for the lifetime of the building. The SpecSure® warranty requires that all components are specified in full and constructed in accordance with British Gypsum's installation guidance. For more details see the British Gypsum website. Always check with the design team before making any changes to the chosen specification, ensuring appropriate substantiation is sought to confirm that the solution still meets all required project performances.
- Perimeter Framing: Perimeter channel suitably fixed to background at 600mm centres.
- Screw: Fix ceiling boards securely to all supports at maximum 230mm centres (reduced to 150mm at board ends and at ceiling perimeters). All joints staggered between layers. Fix working from the centre of each board. Position screws not less than 13mm from cut edges and 10mm from bound edges of boards. Set screw heads flush with plasterboard surface; do not break paper or gypsum core.
- Sealant: Locate sealant at junctions with adjoining structure and other air paths. Apply as a continuous bead to clean, dry, dust-free surfaces, leaving no gaps.
- Structural Background: Concrete Soffit
- Approx. Weight (kg/m2): 22 kg/m^2
- Maximum Cavity / Plenum (mm): 5600 mm
- Minimum Cavity / Plenum (mm): 100 mm
- Primary Framework Centres (mm): 1200 mm
- Secondary Framework Centres (mm): 450 mm
- Suspension Type: Steel angle section is the preferred suspension option when a plaster finish is specified; it can be used up to 5600mm, alternatively Strap hanger can be used for suspension up to 1000mm.
- Suspension Type Centres (mm): 1200 mm

K10 / 55 FIRE RATED SHAFT WALL LINING TO SERVICES VOIDS WITHIN: 1.03 KITCHEN, 1.04 TOILETS

- **The specification below is intended to protect the riser shaft that backs the toilets and the Kitchen specification to be finalised after opening up works has been completed and the shafts inspected by the CA and the proper remedial measures have been understood.**

- Manufacturer: British Gypsum Limited.
- Product reference: GypWall Shaft
- System Code: A306002 (A) MR1 (EN)
- Gypframe 60 I 70 'I' Studs at 600mm centres with Gyproc CoreBoard 19mm between studs, secured by Gypframe G102 Retaining Channel. Inner layer of Gyproc FireLine 12.5mm with an outer layer of Gyproc FireLine MR 12.5mm to non-shaft side. For heights up to 4200mm.
- Performance criteria: NB - to be finalised after Fire Engineer Review
- Fire resistance to BS EN 1364-2,Fire resistance tests for non-loadbearing elements - Ceilings.
    - Fire Integrity (mins) : 60
    - Fire Insulation (mins) : 60
- Components:
- Screws side 1
    - Layer 1: British Gypsum Jack-Point Screws 35mm
    - Layer 2: British Gypsum Jack-Point Screws 41mm
- Retaining channel Gypframe G102 Retaining Channel
- Head channel Gypframe 62 JC 70 'J' Channel
- Horizontal joint Gypframe GA3 Steel Angle
  Gyproc CoreBoard 19mm
- Abutment channel Gypframe 60 SC 55 Starter Channel
- Base channel Gypframe 62 FEC 50 Folded Edge Standard Floor & Ceiling Channel
- Stud Gypframe 60 I 70 'I' Stud
- Fixing strap Gypframe GFS1 Fixing Strap
- Board side 1
    - Layer 1: Gyproc FireLine 12.5mm
    - Layer 2: Gyproc FireLine MR 12.5mm
- Core Gyproc CoreBoard 19mm
- Sealant Gyproc Sealant
- Finishing Requirements:
    - Skim finish as per **K10/67** to complete fire performance and then
    - Tile over as per XX/XXX
- Details:
- This section should be read in conjunction with the Products list.
- Abutment Fixing: Gypframe starter channel suitably fixed wall at 600mm centres.
- Base Channel Fixing: Gypframe channel suitably fixed to floor at 600mm centres.
- Deflection Allowance: Vertical deflection only. To be determined by a Structural Engineer.
- Dropped Soffit: For principles of deflection head construction refer to detail ST-129-Z2L2-07.
- Finishing Requirements: To achieve the specified performances, the system should be finished using either one of our Thistle or ThistlePro plasters, or Gyproc jointing products. See the product range guides on the British Gypsum website for more information. For further guidance on skimming moisture resistant grade boards see the White Book - Finishes section.
- Fixing Strap: Used to support horizontal board joints in face layer of multiple layer board linings and enable board screw fixing at 300mm centres.
- Horizontal Joint: Horizontal board joints in core layer closed off by inserting steel angle between board joints and 122mm strip of core board fire stop with beads of sealant along both longer edges fixed to angle using three drywall screws.
- Loadbearing: No
- Maximum Height: The maximum heights quoted are limited by the fire state field of application or by limiting deflection of L/240 at 200 Pa, whichever is the lower of the two.
- Other Requirements: SpecSure® system performance warranty confirms that British Gypsum proprietary systems will perform as specified for the lifetime of the building. The SpecSure® warranty requires that all components are specified

in full and constructed in accordance with British Gypsum's installation guidance. For more details see the British Gypsum website. Always check with the design team before making any changes to the chosen specification, ensuring appropriate substantiation is sought to confirm that the solution still meets all required project performances.

- Retaining Channel: Retaining channels inserted between the face of the coreboard and the flange of the stud / starter channel.
- Screw: Board layers are fixed securely to Gypframe metal supports around the perimeter of the board and intermediate stud positions at maximum 300mm centres. External corners reduce fixings to 200mm. Drywall screws can be used for fixing boards to metal profiles with a thickness of 0.8mm or less (excluding 'I' studs). All joints staggered between layers. Fix working from the centre of each board. Position screws not less than 13mm from cut edged and 10mm from bound edges of boards . Set screw heads flush with plasterboard surface; do not break paper or gypsum core.
- Sealant: Locate sealant at junctions with adjoining structure and other air paths. Apply as a continuous bead to clean, dry, dust-free surfaces, leaving no gaps. After application of sealant, bulk fill gaps between floor and underside of plasterboard using Gyproc jointing compound. For pressurised airshafts and service ducts apply a continuous bead of sealant leaving no gaps to all framing members at perimeter junctions with walls, floors and ceilings, air gaps around openings, and other potential air leakage points. To frame members prior to fitting core boards and around fire stops cloaking horizontal core board joints. To all metal framing around board perimeters of first layer boarding and board perimeters when fixing outer layer board.
- Stud Centres (mm): 600 mm
- Approx. Weight (kg/m2): 39 kg/m^2
- Head Channel Fixing: Gypframe channel suitably fixed through fire stop in to soffit at 300mm centres.

K10 /60 WALL AND CEILING ACCESS PANELS

- Manufacturer: Access Panels Direct or equal approved
- Products:
  - Tiled Walls: APD.CTD/FR60/120 (tiled access panel)
  - Plasterboard Ceilings: APD.MD.PF/FR60/FR120 (metal access panel)
- Fire rating:
  - to match performance of context wall or ceiling
- Finish:
  - To match finish of context wall
- Locations: To be agreed to suit services installation after opening up works
- Sizes: To be determined.
- Setting out: To be agreed with Contractor prior to installation
- Finish:
  - In a tiled wall : Tiled
  - Self finish (metal) in MF ceilings
- Locks
  - Budget locks
- Installation: Strictly in accordance with manufacturer's recommendations.

K10 /65 DRY LINING GENERALLY

- General: Use fixing, jointing, sealing and finishing materials, components and installation methods recommended by board manufacturer.
- Plasterboards: To BS EN 520.
- Cutting plasterboards: Neatly and accurately without damaging core or tearing paper facing. Minimize cut edges.-
- Two layer boarding: Stagger joints between layers.
- Finishing: Neatly to give flush, smooth, flat surfaces free from bowing and abrupt changes of level.

K10/67 SKIM COAT PLASTER FINISH TO EXISTING WALLS / CEILINGS

- Manufacturer and reference: British Gypsum, Thistle Durafinish (For improved impact & abrasion resistance).
- Background: Can be applied to undercoat plasters with an adequate mechanical key, plasterboard, Glasroc F MultiBoard and Glasroc F FireCase, flat Smooth concrete, waterproof or cement based undercoats.
- Thickness: 2-3mm.
- Pre-Treatment: Dampen dry undercoats or use Thistle GypPrime to pretreat very high suction backgrounds.
- Trowel/float to a tight, matt, smooth surface with no hollows, abrupt changes of level or trowel marks.

- Finish Quality: Prior to applying skim coat, liaise with the Contract Administrator on site to determine quality of smooth finish, flatness, and the design considerations for work and acceptance of smooth plaster finishes under aspects of lighting.
- Reinforcement (were required on boarded substrates)
    - Joints/gaps/internal corners: Any gaps exceeding 3mm pre-filled and joints reinforced using Gyproc Joint Tape alternatively Thistle ProTape FT50 or FT100 may be used.
        - External corners: Thistle Thin Coat Angle Bead or Thin Coat Mini Mesh Bead.
        - Edges: Thistle Thin Coat Plaster Stop Bead to all door and window surrounds.
- Fill and tape all joints except where coincident with metal beads.

K10/69 INSTALLING BEADS/ STOPS

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

K10/70 ADDITIONAL SUPPORTS

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

K10/71 FIXING PLASTERBOARD TO METAL SUPPORTS:

- Partitions/linings/casings:
- Face layer: Fix securely to all supports at maximum 300mm centres (reduced to 200mm at external angles where recommended by the board manufacturer).
- Previous layer of plank plasterboard: Install with long edges at right angles to studs, and fix securely to each stud using two screws.
- Other previous layers: Fix securely to supports around the perimeter of each board at maximum 300mm centres.
- Ceilings: Fix securely to all supports at maximum 230mm centres (reduced to 150mm at board ends and at lining perimeters where recommended by the board manufacturer).
- Fix working from the centre of each board. Position screws not less than 13mm from cut edges and 10mm from bound edges of boards. Set heads in a depression; do not break paper or gypsum core.

K10/73 FIXING PLASTERBOARD TO TIMBER

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

K10/75 NEW WET LAID BASES

- Dpcs: Install under full width of partitions/ freestanding wall linings.

K10/85 MINERAL WOOL INSULATION

- Fitting insulation: Closely butted joints and no gaps. Prevent slumping.
- Electrical cables overlaid by insulation: Size accordingly.

K10/87 SEALING GAPS AND AIR PATHS

- Sealing: Apply sealant to perimeter abutments and around openings as a continuous bead with no gaps.

- Gaps between floor and underside of plasterboard: After sealing, fill with joint compound.

K10/90 ACOUSTIC SEALANT:

- Manufacturer and reference: British Gypsum, Gyproc Sealant.
- Location: At junctions with adjoining structure, and at other airpaths.
- Apply as a continuous bead to clean, dry, dust-free surfaces, leaving no gaps.
- After application of sealant, bulk fill gaps between floor and underside of plasterboard using Gyproc joint compound.

K10/99 SEAMLESS JOINTING

- Filling and taping: Fill joints, gaps and internal angles with jointing compound and cover with continuous lengths of tape, fully bedded.
- Finishing: Feather out jointing compound to give a flush, smooth, seamless surface.
- Nail/ screw depressions and minor indents: Fill to give a flush surface.

K10/100 PREPARATION OF MASONRY TO RECEIVE WALL LININGS

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

K10/105 SERVICE PENETRATIONS:

- The dry lining contractor must liaise with the Main Contractor and other contractors to ensure that fire resistance and other specified performance requirements are not impaired by service penetrations.
- In particular:
    - Form framed openings accurately for grouped services, ducts, etc. allowing for associated fire barriers.
    - Provide insulation backings to recessed electrical outlets and switches as recommended by the plasterboard manufacturer.

L10 WINDOWS / ROOFLIGHTS/SCREENS/LOUVRES

GENERAL

L10/110 EVIDENCE OF PERFORMANCE

- Certification: Provide independently certified evidence that all incorporated components comply with specified performance requirements.

L10/115 TIMBER PROCUREMENT

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

L10/120 SITE DIMENSIONS

- Procedure: Before starting work on designated items take site dimensions, record on shop drawings and use to ensure accurate fabrication.
- Designated items: ALL PROPOSED EXTERNAL WINDOW AND DOOR OPENINGS WITHIN EXISTING OPENINGS.

L10/140 CONTROL SAMPLES

- Procedure:
    - Finalise component details.
    - Fabricate one of each of the following designated items as part of the quantity required for the project.
    - Obtain approval of appearance and quality before proceeding with manufacturer of the remaining quantity.
    - Designated items: Refer to requirements for subcontractor drawings and samples of ironmongery required.

METAL WINDOW SYSTEMS

L10/310 STEEL WINDOWS TO CLUB ROOM

- Manufacturer: Clement Windows or an equal approved manufacturer that is part of the Steel Windows Association.
- Profile: W20 Steel windows
- Opening: Centre pivoting - refer to drawings
- Colour:
    - Black : RAL 9005
    - Sheen: Matt
- Product performances:
    - UK exposure category: To BS 6375-1, 2000 Pa.
    - Air permeability: 300 Pa.
    - Watertightness: 200 Pa.
    - Resistance to wind load: 2000 Pa.
- Security level: To PAS 24.
- Acoustic performance rating: 28 (-1; -3) dB.
- Frame: Typical W20 Door and window sections
- Material: Carbon Steel
- Coating:
    - Hot-dipped galvanised to BS EN ISO 1461.
    - Powder coating to BS EN 13438.
    - Film Thickness minimum: >100 micrometers

- Glazing:
    - Beading: preferably internal to facilitate future window restoration / replacement from the inside without scaffold
    - Glazing bars: Not permitted - clear glass
    - Glazed units: Glass: windows glazed from the outside using 18mm sealed double-glazed units, comprising
    - 4mm soft-coat inner pane, 10mm krypton-filled cavity, 4mm float glass outer pane.
    - U Value of 1.2.
    - Some glazing units are curved on plan - refer to drawings
- Silicone
    - Colour to match window frames
- Hardware:
    - Locking System: Single point locking.
    - Handles: B195 Duplex handles with spring catch for the pivots.
    - Hinges: Pivot cups for the pivots.
    - All finished in satin stainless

L10/350 REFURBISHMENT OF EXISTING METAL WINDOWS

- REFER TO TTC-IDK-S-0-03-Steel window restoration document included with the tender

EXECUTION

L10/710 PROTECTION OF COMPONENTS

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

L10/730 PRIMING/ SEALING

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

L10/740 CORROSION PROTECTION

- Surfaces to be protected: As recommended by sub-contractor.
- Protective coating: Two coats of bitumen solution to BS 6949 or an approved mastic impregnated tape.
- Timing of application: Before fixing components.

L10/750 BUILDING IN

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

L10/765 WINDOW INSTALLATION GENERALLY

- Installation: Into prepared openings.
- Gap between frame edge and surrounding construction:
- Minimum: 5mm.
- Maximum: 10mm.
- Distortion: Install windows without twist or diagonal racking.

L10/770 DAMP PROOF COURSES IN PREPARED OPENINGS

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

L10/780 FIXING OF WOOD FRAMES

- Standard: As section Z20.
- Fasteners: Concealed as recommended by window sub-contractor to suit substrate/adjacent construction and window arrangement.

- 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.

L10/781 FIXING OF STEEL FRAMES

- Standard: As section Z20.
- Fasteners: Concealed as recommended by window sub-contractor to suit substrate/adjacent construction and window arrangement.
- Spacing: When not pre drilled or specified otherwise, position fasteners not less that 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.

L10/810 SEALANT JOINTS

- Sealant:
    - Manufacturer: Adshead Ratcliffe.
    - Product reference: Arbokol 1000.
- Colour: Grey xxxx
- Application: As section Z22 to prepared joints. Finish triangular fillets to a flat or slightly convex profile.

L10/820 IRONMONGERY

- Fixing: Assemble and fix carefully and accurately using fasteners with matching finish supplied by ironmongery manufacturer. Do not damage ironmongery and adjacent surfaces.
- Checking/ Adjusting/ Lubricating: Carry out at completion and ensure correct functioning.

L20 DOORS/SHUTTERS/HATCHES

GENERAL

L20/110 EVIDENCE OF PERFORMANCE

- Certification: Provide independently certified evidence that all incorporated components comply with specified performance requirements.

L20/112 TIMBER PROCUREMENT

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

L20/115 FIRE RESISTING DOORS/ DOORSETS/ ASSEMBLIES

- Evidence of fire performance: Provide certified evidence, in the form of a product conformity certificate, directly relevant fire test report or engineering assessment, that each door/ doorset/ assembly supplied will comply with the specified requirements for fire resistance if tested to BS 476-22, BS EN 1634-1 or BS EN 1634-3. Such certification must cover door and frame materials, glass and glazing materials and their installation, essential and ancillary ironmongery, hinges and seals.

L20/120 NON FIRE RESISTING DOORS/ DOORSETS/ ASSEMBLIES

- Provide certified evidence, in the form of a product conformity certificate or engineering assessment, that each 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.

L20/150 SITE DIMENSIONS

- Procedure: Before starting work on designated items take site dimensions, record on shop drawings and use to ensure accurate fabrication.
- Designated items: ALL PROPOSED EXTERNAL WINDOW AND DOOR OPENINGS WITHIN EXISTING OPENINGS.

L20/170 CONTROL SAMPLES

- Procedure:
    - Finalize component details.
- Fabricate one of each of the following designated items as part of the quantity required for the project.
- Obtain approval of appearance and quality before proceeding with manufacture of the remaining quantity.
- Designated items: Refer to requirements for subcontractor drawings and samples of ironmongery required.

INTERNAL DOOR SETS

L20/230 EXISTING DOORS TO BE REFURBISHED D.1, D.2

- **CONTRACTOR TO REIVEW DOORSET IN RELATION TO FIRE RISK ASSESSMENT AND ADIVSE THE REQUIRMENT FOR UPGRADING TO A FIRE RESISTING DOORSET**

- Refer to Door schedule for sizes and design details (reference referred to various face finishes)
- Fire Resistance: To be confirmed after review
- Core: Solid timber
- Lippings: Solid.
- Wood species: Hardness sufficient for the fire rating and suitable for painting
- Appearance class: J30.
- Preservative treatment:
- Commodity Specification C5 and to manufacturers recommendations.
- Restoration Method:
    - To be removed from frame and properly stripped back to bare wood removing all former finishes
    - To be refinished in lacquer to contractors specification to match existing.
- Thickness: as existing
- Size: Refer to door schedule
- Fixing: Site handling and storage to be strictly in accordance with manufacturer's instructions. Fix in accordance with manufacturer's instructions and BS 8214: 2008 Code of Practice for Fire Door Assemblies with Non-Metallic Leaves.
- Ironmongery: To be refixed back to door and to be in good working order.

L20/235 FIRE RATED FLUSH SOLID CORE DOORS

- Manufacturer: Contractors' choice to Architects' approval.
- Refer to Door schedule for sizes and design details (reference referred to various face finishes)
- Manufacturer: Contractors' choice to architects approval
- Fire Resistance: FD30S 30 minute rated fire door to BS 476.
- Core: Solid timber either of lamellas or blocks
- Lippings: Solid concealed hardwood lippings to match facings.
- Wood species: Hardness sufficient for the fire rating and suitable for painting
- Appearance class: J30.
- Vision Panel: 150 x 1500mm in fire rated glass to match fire rating of the door.
- Preservative treatment: Organic solvent as section Z12 and British Wood preserving and Dampproofing Association Commodity Specification C5 and to manufacturers recommendations.
- Assembly:
- Adhesive: Synthetic resin to BS1204 type MR
    - Joinery workmanship: as section Z10
    - Accuracy: to BS 4787-1
    - Moisture content on delivery: To comply with BS EN 942: 2007 for temperatures 12-21ºC.
- Finish as delivered: Timber veneer to match existing doors adjacent. Spray applied by door supplier – 'Signal pre-catalysed semi-matt (20% specular gloss) finish applied after lipping, and comprising two spray coats of high-build pre-catalysed primer followed by four coats of pre-catalysed lacquer to faces and vertical edges.
- Thickness: 44mm thick.
- Size: Refer to door schedule
- Fixing: Site handling and storage to be strictly in accordance with manufacturer's instructions. Fix in accordance with manufacturer's instructions and BS 8214: 2008 Code of Practice for Fire Door Assemblies with Non-Metallic Leaves.
- Ironmongery: Refer to ironmongery schedule.
- Other requirements.
    - Intumescent strip set in frame/lining at top and side edges and in leading edge of leaf.
    - All gaps between sub-frame and reveal and between sub-frame and linings of fire rated doors to be filled with intumescent mastic of same fire rating as door.
- Fire certification to be provided by door supplier for Building Control approval.

L20/236 EXISTING CUBICLE DOORS TO BATHROOMS

- Refer to Door schedule for sizes and design details (reference referred to various face finishes)
- Material: Steel
- Restoration Method:
    - To be removed from frame and properly stripped back to bare substrate removing all former finishes
    - To be refinished in paint to contractors specification to match existing.
- Thickness: as existing
- Size: Refer to door schedule
- Ironmongery: To be refixed back to door and to be in good working order, NB doors and ironmongery are original to the listed building.

EXECUTION

L20/710 PROTECTION OF COMPONENTS

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

L20/730 PRIMING/ SEALING

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

L20/740 CORROSION PROTECTION

- Surfaces to be protected: As recommended by supplier.
- Protective coating: Two coats of bitumen solution to BS 6949 or an approved mastic impregnated tape.
- Timing of application: Before fixing components.

L20/750 FIXING DOORSETS

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

L20/760 BUILDING IN

- General: Not permitted unless indicated on drawings.

L20/770 DAMP PROOF COURSES ASSOCIATED WITH BUILT IN WOOD FRAMES

- Method of fixing: To backs of frames using galvanized clout nails.

L20/780 DAMP PROOF COURSES IN PREPARED OPENINGS

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

L20/790 FIXING OF WOOD FRAMES

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

L20/800 FIXING OF LOOSE THRESHOLDS

- Spacing of fixings: Maximum 150 mm from each end and at 600 mm maximum centres.

L20/809 FIRE RESISTING/ SMOKE CONTROL DOORS/ DOORSETS/ ROLLER SHUTTERS/ CURTAINS

- 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.

L20/810 FIRE RESISTING/ SMOKE CONTROL DOORS/ DOORSETS/ ROLLER SHUTTERS/ CURTAINS

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

L20/820 SEALANT JOINTS

- Sealant:
    - Manufacturer: Adshead Ratcliffe or equal approved.
    - Product reference: Arbocaulk emulsion acrylic sealant.
    - Colour: Generally white internally and to match colour of external finishes unless otherwise stated (to be confirmed).
    - Application: As section Z22 to prepared joints. Triangular fillets finished to a flat or slightly convex profile.

L20/830 FIXING IRONMONGERY GENERALLY

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

L20/840 FIXING IRONMONGERY TO FIRE RESISTING DOOR ASSEMBLIES

- 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.
- Holes for through fixings and components: Accurately cut.
- Clearances: Not more than 8 mm unless protected by intumescent paste or similar.
- Lock/ Latch cases for fire doors requiring > 60 minutes integrity performance: Coated with intumescent paint or paste before installation.

L20/850 LOCATION OF HINGES

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

M40 STONE/CONCRETE/QUARRY/CERAMIC TILING/MOSAIC

M40/110 NEW TILING TO EXISTING WALLS

- Tiles: Refer to finishes schedule
- Background:
    - Walls: Existing Contrete walls
- Preparation: In accordance with manufacturers' recommendations.
- Adhesive Bedding: Contractor to submit proposals or
    - Manufacturer: Mapei UK Limited, Steel Park Road, Halesowen, West Midlands, B62 8HD (0121 5086970)
    - Product Reference: Keraflex Maxi.
    - Thickness: Nominal 3mm.
- Joint width: 3 mm.
- Grout:
    - Manufacturer: Mapei UK Limited, Steel Park Road, Halesowen, West Midlands, B62 8HD
    - Product Reference: Ultra Colour Plus.
    - Colour: To be colour matched to the wall tile. Sample area of each grout to be provided to ensure colour match
- Jointing: All external corners to be fully mitred without edging beads, including into window reveals, cills and heads, and recesses to walls.

M40/115 NEW TILING TO NEW PLASTERBOARDED BACKGROUNDS

- Tiles: Refer to finishes schedule
- Background:
    - Walls: Plasterboard walls with an additional over layer of tile backer board per clause 470
- Preparation: In accordance with manufacturers' recommendations.
- Adhesive Bedding: Contractor to submit proposals or
    - Manufacturer: Mapei UK Limited, Steel Park Road, Halesowen, West Midlands, B62 8HD (0121 5086970)
    - Product Reference: Keraflex Maxi.
    - Thickness: Nominal 3mm.
- Joint width: 3 mm.
- Grout:
    - Manufacturer: Mapei UK Limited, Steel Park Road, Halesowen, West Midlands, B62 8HD
    - Product Reference: Ultra Colour Plus.
    - Colour: To be colour matched to the wall tile. Sample area of each grout to be provided to ensure colour match
- Jointing: All external corners to be fully mitred without edging beads, including into window reveals, cills and heads, and recesses to walls.

M40/120 RESTORED FLOOR TILING TO KITCHEN AND WCs

- Tiles: Quarry tiles to match existing - contractor to submit samples for approval.
- Background/ Base: Existing concrete floor
- Preparation: In accordance with manufacturers' recommendations.
- Adhesive Bedding: Contractor to submit proposals else:
    - Manufacturer: Mapei UK Limited, Steel Park Road, Halesowen, West Midlands, B62 8HD (0121 5086970)
    - Product Reference: Keraflex Maxi.
    - Thickness: to level with adjacent tiles.
- Joint width: to match adjacent tiles
- Grout:
    - Manufacturer: Mapei UK Limited, Steel Park Road, Halesowen, West Midlands, B62 8HD
    - Product Reference: Ultra Colour Plus.
    - Colour: To be colour matched to the existing grout
    - Sample area of each grout to be provided to ensure colour match
- Jointing: All external corners to be fully mitred without edging beads

M40/125 QUARRY TILE SILLS TO CLUB ROOM

- Tiles: Quarry tiles to match existing - contractor to submit samples for approval.
- Background/ Base: Existing concrete sill
- Preparation: In accordance with manufacturers' recommendations.
- Adhesive Bedding: Contractor to submit proposals else:
    - Manufacturer: Mapei UK Limited, Steel Park Road, Halesowen, West Midlands, B62 8HD (0121 5086970)
    - Product Reference: Keraflex Maxi.
    - Thickness: to level with adjacent tiles.
- Joint width: to match adjacent tiles
- Grout:
    - Manufacturer: Mapei UK Limited, Steel Park Road, Halesowen, West Midlands, B62 8HD
    - Product Reference: Ultra Colour Plus.
    - Colour: To be colour matched to the existing grout
    - Sample area of each grout to be provided to ensure colour match
- Jointing: All external corners to be fully mitred without edging beads

GENERAL

210 SUITABILITY OF BACKGROUNDS/ BASES

- Background/ base tolerances: To permit specified flatness/ regularity of finished surfaces given the permissible minimum and maximum thickness of bedding.
- New background drying times (minimum):
- Concrete walls: 6 weeks.
- Brick/ block walls: 6 weeks.
- Rendering: 2 weeks.
- Gypsum plaster: 4 weeks.
- New base drying times (minimum):
- Concrete slabs: 6 weeks.
- Cement:sand screeds: 3 weeks.

250 SAMPLES

General:

- Grout samples to be agreed with architect for all tiles areas through preliminary control sample of each tile colour
- Quarry tile sample to be provided to match existing quarry tiles on site

PREPARATION

370 NEW IN SITU CONCRETE

Backrounds/ bases to be tiled: Remove mould oil, surface retarders and other materials incompatible with bedding.

380 NEW PLASTER

Plaster: Dry, solidly bedded, free from dust and friable matter.

Plaster primer: Apply if recommended by adhesive manufacturer.

390 PLASTERBOARD BACKGROUNDS

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

400 BACKGROUNDS

Boards: Dry, securely fixed and rigid with no protruding fixings.

Surfaces to be tiled: Seal or prime if recommended by adhesive manufacturer.

460 SMOOTHING UNDERLAYMENT

Type: Recommended by adhesive manufacturer.

Condition: Allow to dry before tiling

470 INTERMEDIATE SUBSTRATE TO WALLS - WATERPROOF TILE BACKER BOARDS

- Manufacturer: James Hardie Building Products Ltd
- Product: Hardie® Backer Tile Backerboard - Backer Board
- Thickness: 6 or 12mm
- Fix to substrate in accordance with manufacturer recommendations
- Conforms to Category C Class 2 of BS EN 12467.
- Classified as non-combustible: A1-s1, d0 according to BS EN 13501-1.

490 TILING ACCESSORIES / TRIMS

- Generally : Only to be used where absolutely necessary and by prior approval by the Architect
- Satin Stainless steel edging at doorways and junctions with timber floor.
- Manufacturer: Schulter (Unit 4-6 Bardon, 22 Beveridge Road, Leicester, LE67 1TE).
- Product Reference: Schulter-SCHIENE
- Size: To suit floor build up.
- Other requirements: Joint between floor finishes to be centred on underside of doors.

FIXING

510 FIXING GENERALLY

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

530 SETTING OUT

Joints: True to line, continuous and without steps.
Joints on walls: Horizontal, vertical and aligned round corners.
Joints in floors: Parallel to the main axis of the space or specified features.
Cut tiles: Minimize number, maximize size and locate unobtrusively.
Joints in adjoining floors and walls: Align
Joints in adjoining floors and skirtings: Align.
Movement joints: Where locations are not indicated, submit proposals.
Setting out of wall tiling to be in accordance with drawings.

550 FLATNESS/ REGULARITY OF TILING/ MOSAICS

Sudden irregularities: Not permitted.
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

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

580 POROUS TILES

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

651 ADHESIVE BED - NOTCHED TROWEL AND BUTTERING METHOD (WALLS)

Application: By floated coat of adhesive to dry background in areas of about 1 m sq. Comb surface.
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.
Finished adhesive thickness: 3 mm or within the range allowed by the adhesive manufacturer.

MOVEMENT JOINTS/ GROUTING/ COMPLETION

875 GROUTING

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

885 COLOURED GROUT

Staining of tiles: Not permitted
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.

M50 RUBBER/PLASTICS/CORK/LINO/CARPET TILING/SHEETING

TYPES OF COVERING

M50/150 MARMOLEUM LINOLEUM SHEETING

- Marmoleum® Walton Cirrus: A range of plain linoleum floor coverings which is part of the Next Generation of Marmoleum® Solid range.
- Matching welding rods are available in all collection colours. In addition, GloWeld –is a photo luminescent welding rod that can be applied for functional reasons, such as safety markings, so that people can find their way in the dark. Consult with Forbo technical literature for details.
- Flooring roll: Linoleum to BS EN ISO 24011. Manufacturer: Forbo Flooring UK Ltd, PO Box 1, Kirkcaldy, Fife KY1 2SB Tel: 0800 0282 162 Fax: 01772 646 912 E-mail: info.flooring.uk@forbo.com Web: www.forbo-flooring.co.uk
- Product reference: Forbo Marmoleum® Walton Cirrus
- BS EN 685 class: 34
- Width: 2000 mm
- Thickness: 2.5 mm
- Adhesive: Eurocol 414/696 Euroflex Lino Plus – A synthetic resin dispersion adhesive with a high initial grab.
- Seam welding: Hot welded with Marmoweld weld rod
- Skirtings - not required

GENERAL REQUIREMENTS

210 WORKMANSHIP GENERALLY

Base condition after preparation: Rigid, dry, sound, smooth and free from grease, dirt and other contaminants.
Finished coverings: Accurately fitted, tightly jointed, securely bonded, smooth and free from air bubbles, rippling, adhesive marks and stains.

220 SAMPLES

Covering samples: Before placing orders, submit representative sample of each type.

250 LAYOUT – ROLL MATERIALS

Setting out of seams: Agree setting out for sheeting types M50/170

330 COMMENCEMENT

Required condition of works prior to laying materials:
Building is weathertight and well dried out.
Wet trades have finished work.
Paintwork is finished and dry.
Conflicting overhead work is complete.
Floor service outlets, duct covers and other fixtures around which materials are to be cut are fixed.
Notification: Submit not less than 48 hours before commencing laying.

340 CONDITIONING

Prior to laying: Condition materials by unpacking and separating in spaces where they are to be laid. Maintain resilient flooring rolls in an upright position. Unroll carpet and keep flat on a supporting surface.
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 ENVIRONMENT

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

360 FLOORS WITH UNDERFLOOR HEATING

Commencement of laying: Not before a period of 48 hours after heating has been turned off.
Post laying start up of heating system: Slowly return heating to its operative temperature not less than 48 hours after completing laying.

PREPARING BASES

410 NEW BASES

Suitability of bases and conditions within any area.
Commencement of laying of coverings will be taken as acceptance of suitability.

460 SMOOTHING/ LEVELLING UNDERLAYMENT COMPOUND.

Type: Latex Levelling and Smoothing Compound (No Ammonia).
Manufacturer: Ardex.
Product reference: Arditex NA.
Thickness: As thin as possible to achieve a level surface finish

530 PARTICLEBOARD FLOORING

Substrate: Boards securely fixed, level and free from surface sealers and contaminants.
Gaps between boards: Not more than 1 mm.
Priming: As required by covering adhesive manufacturer.
Equilibrium moisture content at time of laying covering: As in service conditions.

535 PARTICLEBOARD FLOATING FLOORING

Substrate: Boards securely fixed and free from surface sealers and contaminants.
Level: Sand to remove areas raised more than 1 mm.
Gaps between boards: Not more than 1 mm.
Priming: As required by covering adhesive manufacturer.
Equilibrium moisture content at time of laying covering: As in service conditions.
LAYING COVERINGS

610 SETTING OUT TILES

Method: Set out from centre of area/ room so that, wherever possible:
Tiles along opposite edges are of equal size.
Edge tiles are more than 50% of full tile width.

620 COLOUR CONSISTENCY

Finished work in any one area/ room: Free from banding or patchiness.

640 ADHESIVE FIXING GENERALLY

Adhesive type: As specified, as recommended by covering/ underlay manufacturer, or as approved.
Primer: Type and usage as recommended by adhesive manufacturer.
Application: As necessary to achieve good bond.
Finished surface: Free from trowel ridges, high spots caused by particles on the substrate, and other irregularities.

720 DOORWAYS

Joint location: On centre line of door leaf.

780 TRAFFICKING AFTER LAYING

Covering types: All.
Traffic free period: Until adhesive has set.

COMPLETION

880 WASTE

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

M60 PAINTING/CLEAR FINISHING

COATING SYSTEMS

115 PAINT TO INTERNAL WALLS AND PLASTERBOARD CEILINGS
- Manufacturer: Refer to finishes schedule
- Surfaces: Plaster skim coats
- Preparation: As clauses 400 and 580.
- Application: Strictly in accordance with manufacturer's recommendations
- Initial coats: 1no. Mist coat .
- Finishing coats: 2no. full coats.
- Colour: Brilliant white

120 PAINT TO INTERNAL WOODWORK AND METAL DOORS
- Manufacturer: Dulux
- Product reference: Satinwood
- Surfaces: SW skirtings, window cills, architraves etc.
- Preparation: As clauses 400 and 471.
- Application: Strictly in accordance with manufacturer's recommendations
- Initial coats: 1no. coat Primer as directed by manufacturer
- Undercoats: 1no. coat Primer as directed by manufacturer
- Number of coats: 2no. Coats
- Colour:
    - Doors: To match existing
    - Trims etc: To match adjacent wall colour

130 PAINT TO CONCRETE SOFFITS
- Manufacturer: Keim
- Product reference: Ecosil-ME
- Surfaces: Concrete Soffit
- Preparation: As clauses 400 and 481 and in accordance with manufacturer recommendations
- Application: Strictly in accordance with manufacturer's recommendations
- Initial coats:
    - Mist coat then
    - Number of coats: 2no.
- Colour: White.

180 CLEAR / COLOURED VARNISH TO TIMBER MEMBERS AND LININGS
- Contractor to submit proposals to match existing door colours

210 COATING MATERIALS
- Selected manufacturers: Submit names before commencement of coating work.

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

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

280 PROTECTION

- '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

- Sample areas of finished work: Carry out, including preparation, as follows:
- Types of coating Nature of sample
- M60/180 Small area of existing doorset
- Approval of appearance: Obtain before commencement of general coating work.

320 INSPECTION BY COATING MANUFACTURERS

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

400 PREPARATION GENERALLY

- Standard: In accordance with BS 6150.
- Suspected existing hazardous materials: Prepare risk assessments and method statements covering operations, disposal of waste, containment, and reoccupation, and obtain approval before commencing work.
- Preparation materials: Types recommended by their manufacturers and the coating manufacturer for the situation and surfaces being prepared.
- Substrates: Sufficiently dry in depth to suit coating.
- Efflorescence salts: Remove.
- Dirt, grease and oil: Remove. Give notice if contamination of surfaces/ substrates has occurred.
- Surface irregularities: Remove.
- Joints, cracks, holes and other depressions: Fill flush with surface, to provide smooth finish.
- Dust, particles and residues from preparation: Remove and dispose of safely.
- Water based stoppers and fillers:
- Apply before priming unless recommended otherwise by manufacturer.
- If applied after priming: Patch prime.
- Oil based stoppers and fillers: Apply after priming.
- Doors, opening windows and other moving parts:
- Ease, if necessary, before coating.
- Prime resulting bare areas.

420 FIXTURES AND FITTINGS

- Removal: Before commencing work remove: Surface mounted items such stair handrail brackets, light fittings, electrical cover plates etc
- Replacement: Refurbish as necessary, refit when coating is dry.

425 IRONMONGERY

- Removal: Before commencing work remove ironmongery from surfaces to be coated.
- Hinges: Do not remove.
- Replacement: Refurbish as necessary; refit when coating is dry.

471 PRE PRIMED WOOD

- Areas of defective primer: Take back to bare wood and reprime.

481 UNCOATED WOOD

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

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

511 GALVANIZED, SHERARDIZED AND ELECTROPLATED STEEL
- White rust: Remove.
- Pretreatment: Apply one of the following:
- 'T wash'/ mordant solution to blacken whole surface.
- Etching primer recommended by coating system manufacturer.

521 UNCOATED STEEL - MANUAL CLEANING
- Oil and grease: Remove.
- Corrosion, loose scale, welding slag and spatter: Remove.
- Residual rust: Treat with a proprietary removal solution.
- Primer: Apply as soon as possible.

531 UNCOATED STEEL - BLAST CLEANING
- Oil and grease: Remove.
- Blast cleaning:
- Atmospheric conditions: Dry.
- Abrasive: Suitable type and size, free from fines, moisture and oil.
- Surface finish: To BS EN ISO 8501-1, preparation grade SA2.
- Primer: Apply as soon as possible and within four hours of blast cleaning.

541 UNCOATED ALUMINIUM/ COPPER/ LEAD
- Surface corrosion: Remove, and lightly key surface.
- Pretreatment: Etching primer, if recommended by coating system manufacturer.

560 UNCOATED CONCRETE
- Release agents: Remove.

570 UNCOATED MASONRY/ RENDERING
- Loose and flaking material: remove.

580 UNCOATED PLASTER
- Nibs, trowel marks and plaster splashes: Scrape off.
- Overtrowelled 'polished' areas: Key lightly.

590 UNCOATED PLASTERBOARD
- Depressions around fixings: Fill with stopper/ filler.

601 UNCOATED PLASTERBOARD - TO RECEIVE TEXTURED COATING
- Joints: Fill, tape and feather out with materials recommended by textured coating manufacturer.

611 WALL COVERINGS
- Retained wall coverings: Check that they are in good condition and well adhered to substrate.
- Previously covered walls: Wash down to remove paper residues, adhesive and size.

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

645 SEALING OF INTERNAL MOVEMENT JOINTS

- General: To junctions of walls and ceilings with architraves, skirtings and other trims.
- Sealant: Water based acrylic.
- Manufacturer: Geocel or equal approved.
- Product reference: Painters Mate.
- Preparation and application: As section Z22.

APPLICATION

711 COATING GENERALLY

- Application: In accordance with BS 6150, clause 9.
- Conditions: Maintain suitable temperature, humidity and air quality during application and drying.
- Surfaces: Clean and dry at time of application.
- Thinning and intermixing of coatings: Not permitted unless recommended by manufacturer.
- Overpainting: Do not paint over intumescent strips or silicone mastics.
- Priming coats:
- Thickness: To suit surface porosity.
- Application: As soon as possible on same day as preparation is completed.
- Finish:
- Even, smooth and of uniform colour.
- Free from brush marks, sags, runs and other defects.
- Cut in neatly.
- Doors, opening windows and other moving parts: Ease before coating and between coats.

720 PRIMING JOINERY

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

730 WORKSHOP COATING OF CONCEALED JOINERY SURFACES

- General: Apply coatings to all surfaces of components.

731 SITE COATING OF CONCEALED JOINERY SURFACES

- General: After priming, apply additional coatings to surfaces that will be concealed when fixed in place.
- Components: Any concealed joinery elements.
- Additional coatings: One undercoat.

740 CONCEALED METAL SURFACES

- General: Apply additional coatings to surfaces that will be concealed when component is fixed in place.
- Components: Balcony supports built-into external brickwork.
- Requirements: The sequence of working must be such as to ensure that surfaces inaccessible after assembly receive the full specified treatment and coating systems including, if necessary, local shop application of site coatings.

751 STAINING WOOD

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

770 EXTERNAL DOORS

- Bottom edges: Prime and coat before hanging doors.

780 BEAD GLAZING TO COATED WOOD

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

800 GLAZING

- 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

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

P20 UNFRAMED ISOLATED TRIMS/SKIRTINGS/SUNDRY ITEMS

110 SOFTWOOD SKIRTINGS

- Manufacturer: Contractor's choice to match drawings.
- Type: Softwood.
- Profile: To be agreed
- Thickness: 18mm.
- Moisture content at time of fixing: 12%±2%.
- Finished size: TBC
- Finish as delivered: Primed ready for paint finish to section M60 clause 120.
- Fixing: Screwed at 300mm centres and SW pelletted.
- Other requirements:
    - Skirtings to align with skirtings to built-in joinery.
    - Skirting to base of stair to follow line of treads/risers at base with angled line following pitch at top with 5x5mm rebate to following line of treads/risers.

510 INSTALLATION GENERALLY

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

P31 HOLES, CHASES, COVERS AND SUPPORTS FOR SERVICES

EXECUTION

610 COORDINATION
- Locations and dimensions of holes and chases for services: Submit details for approval by Architect.

620 HOLES AND CHASES IN IN SITU CONCRETE
- Cast in: Holes larger than 10 mm diameter and chases.
- Cutting and drilling:
    - Permitted for holes not larger than 10 mm diameter.
    - Not permitted for holes larger than 10 mm diameter except as indicated on drawings.

630 HOLES AND CHASES IN PRECAST CONCRETE
- Cutting and drilling: Not permitted except as indicated on drawings.

640 HOLES IN STRUCTURAL STEELWORK
- Cutting and drilling: Not permitted except as indicated on drawings.

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

660 PREFORMED HOLES IN MASONRY
- Width of holes without bridging over (maximum): 150mm.
- Holes requiring bridging: Submit proposals.

670 NOTCHES AND HOLES IN STRUCTURAL TIMBER
- General: Avoid if possible.
- Sizes: Minimum needed to accommodate services.
- Position: Do not locate near knots or other defects.
- Notches and holes in same joist: Minimum 100 mm apart horizontally.
- Notches in joists: Locate at top. Form by sawing down to a drilled hole.
    - Depth (maximum): 0.125 x joist depth.
    - Distance from supports: Between 0.07 and 0.25 x span.
- Holes in joists: Locate on neutral axis.
    - Diameter (maximum): 0.25 x joist depth.
    - Centres (minimum): 3 x diameter of largest hole.
- Distance from supports: Between 0.25 and 0.4 of span.
- Notches in roof rafters, struts and truss members: Not permitted.
- Holes in struts and columns: Locate on neutral axis.
- Diameter (maximum): 0.25 x minimum width of member.
- Centres (minimum): 3 x diameter of largest hole.

- Distance from ends: Between 0.25 and 0.4 of span.

690 INSTALLING PIPE SLEEVES

- Sleeves: Fit to pipes passing through building fabric.
- Material: Match pipeline.
- Size: One or two sizes larger than pipe to allow clearance.
- Finish: Install sleeves flush with building finish. In areas where floors are washed down, install protruding 100 mm above floor finish.
- Masking plates: Fit at visible penetrations, including through false ceilings of occupied rooms.

710 SEALING OF SERVICES FOR MAINTAINING ACOUSTIC AND FIRE PERFORMANCE

- Service: All.
- Location: Walls, ceilings and floors.
- Sealing material: Contractor to propose material and method for approval to maintain required level of performance.

730 INSTALLING ACCESS COVERS/ GRATINGS AND FRAMES

- Seating: Brickwork.
    - Bedding and haunching of frames: Continuously.
    - Material: 1:3 cement:sand mortar.
- Top of haunching: 30 mm below surrounding surfaces.
- Horizontal positioning of frames:
    - Centred over openings.
    - Install square with joints in surrounding surfaces: Where ever practicable.
- Vertical positioning of frames:
    - Level; or
    - Marry in with levels of surrounding surfaces.
- Permissible deviation in level of external covers and frames: +0 to -6 mm.

Z10 PURPOSE MADE JOINERY

110 FABRICATION

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

120 CROSS SECTION DIMENSIONS OF TIMBER

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

130 PRESERVATIVE TREATED WOOD

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

140 MOISTURE CONTENT

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

210 LAMINATED PLASTICS VENEERED BOARDS/ PANELS

- Fabrication: To British Laminated Plastics Fabricators Association Ltd (BLF) fabricating standards.
- Balancing veneer: From decorative veneer manufacturer and of similar composition. Applied to the reverse side of core material.
- Finished components: Free from defects, including bow, twist, scratches, chipping, cracks, pimpling, indentations, glue marks, staining and variations in colour and pattern.
- Joints visible in completed work: Tight butted, true and flush.

220 WOOD VENEERED BOARDS/ PANELS

- Core material and veneers: Conditioned before bonding.
- Setting out: Veneer features and grain pattern aligned regularly and symmetrically unless instructed otherwise.
- Balancing veneer: Applied to reverse side of core material.
- Moisture and temperature movement characteristics: As facing veneer.
- Veneer edges: Tight butted and flush, with no gaps.
- Tolerance of veneer thickness (maximum): ± 0.5 mm.
- Finished components: Free from defects, including bow, twist, scratches, chipping, splits, blebs, indentations, glue marks and staining.
- Surface finish: Fine, smooth, free from sanding marks.

250 FINISHING

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

Z11 PURPOSE MADE METALWORK

310 MATERIALS GENERALLY

- Grades of metals, section dimensions and properties: To appropriate British Standards. When not specified, select grades and sections appropriate for the purpose.
- Prefinished metal: May be used if methods of fabrication do not damage or alter appearance of finish, and finish is adequately protected.
- 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

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

330 STEEL PLATE, SHEET AND STRIP

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

340 HOT ROLLED STEEL PLATE, SHEET AND STRIP

- Flat products, high yield strength for cold forming: To BS EN 10149-1, -2 and -3.
- Carbon steel sheet and strip for cold forming: To BS EN 10111.
- 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

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

360 COATED STEEL FLAT PRODUCTS

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

370 STEEL STRUCTURAL HOLLOW SECTIONS (SHS)

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

380 OTHER STEEL SECTIONS

- Equal flange tees: To BS EN 10055.
- Equal and unequal angles: To BS EN 10056-1 and -2.
- Wire, carbon steel for general engineering purposes: To BS 1052.
- Wire and wire products, general: To BS EN 10218-2.
- Tubes:
- Seamless circular: To BS EN 10297-1.
- Seamless cold drawn: To BS EN 10305-1.
- Welded and cold sized square and rectangular: To BS EN 10305-5.

- Welded circular: To BS EN 10296-1.
- Welded cold drawn: To BS EN 10305-2.
- Welded cold sized: To BS EN 10305-3.

400 STAINLESS STEEL PRODUCTS

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

410 ALUMINIUM ALLOY PRODUCTS

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

420 COPPER ALLOY PRODUCTS

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

FABRICATION

515 FABRICATION GENERALLY

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

520 COLD FORMED WORK

- Profiles: Accurate, with straight arrises.

525 ADHESIVE BONDING

- Preparation of surfaces of metals to receive adhesives:
- Degrease.
- Abrade mechanically or chemically etch.
- Prime: To suit adhesive.
- Adhesive bond: Form under pressure.

527 WELDING

- Welding procedures:
- Method and standard: Metal arc welding to BS EN 1011-1 and BS EN 1011-2.
- Welding Procedure Specification (WPS): Required.

- Preparation:
- Joint preparation: Clean thoroughly.
- Surfaces of materials that will be self-finished and visible in the completed work: protect from weld splatter.
- Jointing:
- Joints: Fully bond parent and filler metal throughout with no inclusions, holes, porosity or cracks.
- Dissimilar metals: Avoid.
- Strength requirements: Welds to achieve design loads.
- Heat straightening: As required.
- Complex assemblies: Agree priority for welding members to minimize distortion caused by subsequent welds.
- Tack welds: Use only for temporary attachment.
- Jigs: Provide to support and restrain members during welding.
- Filler plates: As required.
- Lap joints: Minimum 5 x metal thickness or 25 mm, which ever is greater.
- Weld terminations: Clean and sound.

530 STAINLESS STEEL FABRICATION

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

555 BRAZING

- Standard: To BS EN 14324.
- Testing:
- Destructive testing: To BS EN 12797.
- Nondestructive testing: To BS EN 12799.

FINISHING

710 FINISHING WELDED AND BRAZED JOINTS VISIBLE IN COMPLETE WORK

- Standard: To BS EN ISO 8501-3.
- Preparation grade: SA2.
- Butt joints: Smooth, and flush with adjacent surfaces.
- Fillet joints: Neat.
- Grinding: Grind smooth where indicated on drawings.

745 PREPARATION FOR APPLICATION OF COATINGS

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

750 LIQUID ORGANIC COATING FOR ALUMINIUM ALLOY COMPONENTS

- Standard: To BS 4842.

760 ZINC AND CADMIUM PLATING OF IRON AND STEEL SURFACES

- Zinc plating: To BS EN ISO 2081.
- Cadmium plating: To BS EN ISO 2082.

770 CHROMIUM PLATING
- Standard: To BS EN ISO 1456.

780 GALVANIZING
- Standard: To BS EN ISO 1461.
- Preparation:
- Vent and drain holes: Provide in accordance with BS EN ISO 14713. Seal after sections have been drained and cooled.
- Components subjected to cold working stresses: Heat treat to relieve stresses before galvanizing.
- Welding slag: Remove.
- Component cleaning: To BS EN ISO 8501-1.
- Grade: SA2.

790 VITREOUS ENAMELLING
- Standard: To BS EN 14431.
- Substrate metal: Carbon steel or cast iron.

COMPLETION

910 DOCUMENTATION
- Submit:
- Manufacturer’s maintenance instructions.
- Guarantees, warranties, test certificates, record schedules and log books.

920 COMPLETION
- Protection: Remove.
- Cleaning and maintenance: Carry out in accordance with procedures detailed in fabricators' guarantees.

Z20 FIXINGS AND ADHESIVES

PRODUCTS

310 FASTENERS GENERALLY
- Materials: To have:
- Bimetallic corrosion resistance appropriate to items being fixed.
- Atmospheric corrosion resistance appropriate to fixing location.
- Appearance: Submit samples on request.

320 PACKINGS
- Materials: Noncompressible, corrosion proof.
- Area of packings: Sufficient to transfer loads.

330 NAILED TIMBER FASTENERS
- Nails:
- Steel: To BS 1202-1 or BS EN 10230-1.
- Copper: To BS EN 1202-2.
- Aluminium: To BS 1202-3.

340 MASONRY FIXINGS
- Light duty: Plugs and screws.
- Heavy duty: Expansion anchors or chemical anchors.

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

360 ANCHORS
- Types:
- Expansion: For use in substrate strong enough to resist forces generated by expansion of anchor.
- Adhesive or chemical:
- For use in substrate where expansion of anchor would fracture substrate.
- For use in irregular substrate where expansion anchors cannot transfer load on anchor.
- Cavity: For use where the anchor is retained by toggles of the plug locking onto the inside face of the cavity.

370 WOOD SCREWS
- Type:
- Wood screws (traditional pattern).
- Standard: To BS 1210.
- Wood screws.
- Pattern: Parallel, fully threaded shank or twin thread types.
- Washers and screw cups: Where required are to be of same material as screw.

380 MISCELLANEOUS SCREWS
- Type: To suit the fixing requirement of the components and substrate.
- Pattern: Self-tapping, metallic drive screws, or power driven screws.
- Washers and screw cups: Where required to be of same material as screw.

390 ADHESIVES GENERALLY
- Standards:
- Hot-setting phenolic and aminoplastic: To BS 1203.
- Thermosetting wood adhesives: To BS EN 12765.
- Thermoplastic adhesives: To BS EN 204.

410 POWDER ACTUATED FIXING SYSTEMS

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

EXECUTION

610 FIXING GENERALLY

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

620 FIXING THROUGH FINISHES

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

630 FIXING PACKINGS

- Function: To take up tolerances and prevent distortion of materials and components.
- Limits: Do not use packings beyond thicknesses recommended by fixings and fasteners manufacturer.
- Locations: Not within zones to be filled with sealant.

640 FIXING CRAMPS

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

650 NAILED TIMBER FIXING

- Penetration: Drive fully in without splitting or crushing timber.
- Surfaces visible in completed work: Punch nail heads below wrot surfaces.
- Nailed timber joints: Two nails per joint (minimum), opposed skew driven.

660 SCREW FIXING

- Finished level of countersunk screw heads:
- Exposed: Flush with timber surface.
- Concealed (holes filled or stopped): Sink minimum 2 mm below surface.

670 PELLETED COUNTERSUNK SCREW FIXING

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

680 PLUGGED COUNTERSUNK SCREW FIXING

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

690 USING POWDER ACTUATED FIXING SYSTEMS

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

700 APPLYING ADHESIVES

- Surfaces: Clean. Adjust regularity and texture to suit bonding and gap filling characteristics of adhesive.

- Support and clamping during setting: Provide as necessary. Do not mark surfaces of or distort components being fixed.
- Finished adhesive joints: Fully bonded. Free of surplus adhesive.