

C20 DEMOLITION

To be read with Preliminaries/ General conditions.

05 SURVEY

- Scope: Before starting deconstruction/ demolition work, examine available information, and carry out a survey of:
 - the structure or structures to be deconstructed/ demolished,
 - the site on which the structure or structures stand, and
 - the surrounding area.
- Report and method statements: Submit, describing:
 - Form, condition and details of the structure or structures, the site and the surrounding area.
 - Type, location and condition of features of historical, archaeological, geological or ecological importance.
 - Type, location and condition of adjoining or surrounding premises that might be adversely affected by removal of the structure or structures or by noise, vibration and/ or dust generated during deconstruction/ demolition.
 - Identity and location of services above and below ground, including those required for the Contractor's use, and arrangements for their disconnection and removal.
 - Form and location of flammable, toxic or hazardous materials, including lead-based paint, and proposed methods for their removal and disposal.
 - Form and location of materials identified for reuse or recycling, and proposed methods for removal and temporary storage.
 - Proposed programme of work, including sequence and methods of deconstruction/ demolition.
 - Details of specific pre-weakening required.
 - Arrangements for protection of personnel and the general public, including exclusion of unauthorized persons.
 - Arrangements for control of site transport and traffic.
 - Special requirements: None.

10 EXTENT OF DECONSTRUCTION/ DEMOLITION

- General: Subject to retention requirements specified elsewhere, deconstruct/ demolish structures down to upper level of ground floor slab.

15 BENCH MARKS

- Unrecorded bench marks and other survey information: Give notice when found. Do not remove marks or destroy the fabric on which they are found.

20 FEATURES TO BE RETAINED

- General: Keep in place and protect the following: furniture and sanitaryware.

45 SERVICES TO BE RETAINED

- Damage to services: Give notice, and notify relevant service authorities and/ or owner/ occupier regarding damage arising from deconstruction/ demolition.
- Repairs to services: Complete as directed, and to the satisfaction of the service authority or owner.

50 WORKMANSHIP

- Standard: Demolish structures in accordance with BS 6187.
- Operatives: Appropriately skilled and experienced for the type of work. Holding, or in training to obtain, relevant CITB Certificates of Competence.
- Site staff responsible for supervision and control of work: Experienced in the assessment of risks involved and methods of deconstruction/ demolition to be used.

55 SITE HAZARDS

- Precautions: Prevent fire and/ or explosion caused by gas and/ or vapour from tanks, pipes, etc.
- Dust: Reduce by periodically spraying with an appropriate wetting agent, or contain.
 - Lead dust: Submit method statement for control, containment and clean-up regimes.
- Site operatives and general public: Protect from vibration, dangerous fumes and dust arising during the course of the Works.

60 ADJOINING PROPERTY

- Temporary support and protection: Provide. Maintain and alter, as necessary, as work proceeds. Do not leave unnecessary or unstable projections.
- Defects: Report immediately on discovery.
- Damage: Minimize. Repair promptly to ensure safety, stability, weather protection and security.
- Support to foundations: Do not disturb.

70 PARTLY DECONSTRUCTED/ DEMOLISHED STRUCTURES

- General: Leave partly in a stable condition, with adequate temporary support at each stage to prevent risk of uncontrolled collapse. Make secure outside working hours.
- Temporary works: Prevent overloading due to debris.
- Access: Prevent access by unauthorized persons.

71 DANGEROUS OPENINGS

- General: Provide guarding at all times, including outside of working hours. Illuminate during hours of darkness.
- Access: Prevent access by unauthorized persons.

76 ASBESTOS-CONTAINING MATERIALS - UNKNOWN OCCURENCES

- Discovery: Give notice immediately of suspected asbestos-containing materials when discovered during deconstruction/ demolition work. Avoid disturbing such materials.
- Removal: Submit statutory risk assessments and details of proposed methods for safe removal.

78 UNFORESEEN HAZARDS

- Discovery: Give notice immediately when hazards, such as unrecorded voids, tanks, chemicals, are discovered during deconstruction/ demolition.
- Removal: Submit details of proposed methods for filling, removal, etc.

85 SITE CONDITION AT COMPLETION

- Debris: Clear away and leave the site tidy on completion.

90 CONTRACTOR'S PROPERTY

- Components and materials arising from the deconstruction/ demolition work: Property of the Contractor except where otherwise provided.
- Action: Remove from site as work proceeds where not to be reused or recycled for site use.

95 RECYCLED MATERIALS

- Materials arising from deconstruction/ demolition work: Can be recycled or reused elsewhere in the project, subject to compliance with the appropriate specification and in accordance with any site waste management plan.

D20 EXCAVATING AND FILLING

To be read with Preliminaries/ General conditions.

04 SITE INVESTIGATION

Report:

10 PREPARATORY WORK

- Trees, shrubs and hedges to be removed: Cut down, grub up main roots and fill voids.
- Larger Trees: None
- Trees to be retained: Protect area around the trunk and do not use for building purposes or material storage.
- Clear site of rubbish and vegetation. Grub up large roots.
- Arisings: Remove from site.

20 STRIPPING TOPSOIL

- General: Excavate from areas where there will be re-grading or construction work.
- Depth of removal: Refer to drawings

23 EXCAVATIONS AND BACKFILLING

- Prior to commencing excavations: Excavate trial pits adjacent to existing foundations to determine extent and formation levels.
 - Allow for inspection of trial pits
 - Allow time for amendment of details if required.
- Time Period: To be confirmed by CA.
- Requirement: Where excavations are close; complete all work including backfilling to the lower excavation before the higher excavation is made.
- Backfill material:
 - Up to higher excavation formation level: TBC
 - Above higher excavation formation level: TBC

25 INSPECTION FORMATIONS

- Notice: Make advance arrangements for inspection for formations for roads and paving.

30 OBSTRUCTIONS

- Recorded foundations, beds, drains, etc: Break out and seal off drain ends. Remove contaminated earth.
- Unrecorded foundations, beds, basements, filling, tanks, service pipes, drains, etc: Give notice.

50 HAZARDOUS, AGGRESSIVE OR UNSTABLE MATERIALS

- Generally: Do not import or use fill materials which would, either in themselves or in combination with other material or ground water, give rise to a health hazard, damage to building structures or instability in the filling.

53 WATER

- General: Keep excavations free from water until foundations and below ground constructions are complete.

55 PLACING FILL GENERALLY

- Excavations and areas to be filled: Free from loose soil, rubbish and standing water.

- Freezing conditions: Do not use frozen materials or materials containing ice. Do not place fill on frozen surfaces.
- Fill against structure:, membranes or buried services: Place and compact in a sequence and manner which will ensure stability and avoid damage.

62 FROST SUSCEPTIBILITY

- General: Except as allowed below, fill must be non-frost-susceptible as defined in Highways Agency 'Specification for highway works', clause 801.17.
- Frost-susceptible fill: Use only within the external walls of buildings below spaces that will be heated. Protect from frost during construction.

65 HARDCORE

- Fill: Granular material, free from harmful matter and excessive dust or clay, well graded, all pieces less than 75mm in any direction, and in any one layer only one of the following:
 - Crushed hard rock or quarry waste.
 - Crushed concrete, brick or tile, free from plaster.
 - Gravel.
- Filling: Spread and level in 150 mm maximum layers. Thoroughly compact each layer, whilst maintaining enough voids to allow sufficient venting.

67 VENTING HARDCARE LAYER

- Fill: Clean granular material, well graded, passing a 75 mm BS sieve but retaining on a 20 mm BS sieve, and in any one layer only one of the following:
 - Crushed hard rock.
 - Crushed concrete, crushed brick or tile, free from plaster.
 - Gravel.
- Filling: Spread and level in 150 mm maximum layers. Thoroughly compact each layer, whilst maintaining enough voids to allow sufficient venting.

75 BLINDING TO HARDCORE

- Surfaces to receive sheet overlays or concrete: Blind with:
 - Concrete where shown on drawings; or
 - Sand, fine gravel, or other approved fine material applied to provide a close smooth surface.
- Permissible deviation on surface level: +0 -25mm.

E10 MIXING/ CASTING/ CURING IN SITU CONCRETE**15 SPECIFICATION**

- Concrete generally: To BS 8500-2
- Exchange of information: Provide concrete producer with information required by BS 8500-1, clauses 4 and 5.

20 DESIGNATED CONCRETE FOR GROUND FLOOR SLAB

- Designation: Grade C28/35 to BS 8500 & BS EN 206-1.
- Fibres: Not required
- Aggregates:
 - Size (maximum): 20 mm.
 - Coarse recycled aggregates: Not required
 - Additional aggregate requirements: None
- Special requirements for cement/ combinations:
- Consistence class: CEM1 42.5 Conforming to BS EN 197-1.
- Chloride Class:
- Admixtures: None

21 DESIGNATED CONCRETE FOR EXTERNAL CONCRETE RAMP

- Designation: Grade C28/35 to BS 8500 & BS EN 206-1.
- Fibres: Not required
- Aggregates:
 - Size (maximum): 20 mm.
 - Coarse recycled aggregates: Not required
 - Additional aggregate requirements: None
- Special requirements for cement/ combinations:
- Consistence class: CEM1 42.5 Conforming to BS EN 197-1.
- Chloride Class:
- Admixtures: None

35 SUBSTITUTION OF STANDARDIZED PRESCRIBED FOR DESIGNATED CONCRETE

- General: Conform to BS 8500-2, clause 9.
- Substitution: In accordance with BS 8500-1, Table A.14.
- Proposals: Submit for each substitution, stating reasons.
- Site mixing: Not allowed.

45 PROPERTIES OF FRESH CONCRETE

- Adjustments to suit construction process: Determine with concrete producer. Maintain conformity to the specification.

50 PREMATURE WATER LOSS

- Requirement: Prevent water loss from concrete laid on absorbent substrates.
 - Underlay: Polyethylene sheet 250 micrometres thick.
 - Installation: Lap edges 150 mm.

60 PLACING AND COMPACTING

- Surfaces to receive concrete: Clean, with no debris, tying wire clippings, fastenings or free water.
- Timing: Place as soon as practicable after mixing and while sufficiently plastic for full compaction.
- Temperature limitations for concrete: 30°C (maximum) and 5°C (minimum). Do not place against frozen or frost covered surfaces.

- Compaction: Fully compact to full depth to remove entrapped air especially around reinforcement, cast-in accessories, into corners of formwork and at joints. Continue until air bubbles cease to appear on the top surface.
- Methods of compaction: To suit consistence class and use of concrete.

70 CURING AND PROTECTING

- Evaporation from surfaces of concrete: Prevent throughout curing period.
 - Surfaces covered by formwork: Retain formwork in position and, where necessary to satisfy curing period, cover surfaces immediately after striking.
 - Top surfaces: Cover immediately after placing and compacting. Replace cover immediately after any finishing operations.
- Curing periods:
 - Surfaces which in the finished building will be exposed to the elements, and wearing surfaces of floors and pavements: 10 days (minimum).
 - Other structural concrete surfaces: 5 days (minimum).
- Protection: Protect concrete from shock, indentation and physical damage.

E20 FORMWORK FOR IN SITU CONCRETE

To be read with Preliminaries/ General conditions.

GENERALLY/ PREPARATION**30 UNDERSLAB INSULATION**

- Product: Therma Floor TF70.
- Manufacturer: Kingspan Insulation Limited.
- Thickness: 150mm.
 - Under slab: 150mm.
 - To edge of slab: 30mm.

60 BOARD SUBSTRUCTURE FORMWORK

- General: Lay tightly butted and fully supported on firm, even substrate. Restrain against movement during concrete placement. Seal joints to prevent penetration of concrete.
- Collapsible boards with cellular cardboard cores: Keep dry. Seal joints in polyethylene underlay/ overlay sheets and reseal cut polyethylene bags.

70 FORMWORK

- General: Accurately and robustly constructed to produce finished concrete to the required dimensions.
- Formed surfaces: Free from twist and bow with intersections, lines and angle square, plumb and true.
- Joints between forms and completed works: Prevent loss of grout and formation of steps.
- Holes and chases: Form with inserts or box out as required.

F10 BRICK/ BLOCK WALLING

To be read with Preliminaries/ General conditions.

TYPES OF WALLING

- 05 FACING BRICKWORK TO NEW EXTERNAL LEAF OF CAVITY WALLS
- Bricks: To BS EN 771-1.
 - Work sizes: 215 x 65 x 102.5mm
 - Mortar: As section Z21.
 - Bonds: Half lap stretched bond
 - Joints: Bucket handle to match existing
- 36 CONCRETE COMMON BLOCKWORK TO INTERNAL WALLS
- Blocks: To BS EN 771-3.
 - Manufacturer: To be approved by CA.
 - Product reference: To be approved by CA.
 - Configuration: Group 1.
 - Compressive strength: To structural engineer's specification.
 - Mean value: To structural engineer's specification.
 - Characteristic value: To structural engineer's specification.
 - Category: Category 1.
 - Freeze/ Thaw resistance: Frost resistant.
 - Work sizes (length x width x height): 440x140x215mm.
 - Tolerance category: D2
 - Special shapes: None
 - Additional requirements: None.
 - Mortar: As section Z21.
 - Standard: To BS EN 998-2
 - Mix: 1:1:6 cement:lime:sand, 4 N/mm² (mortar class 4).
 - Additional requirements: None.
 - Bond: Half lap stretcher bond.
- 45 ENGINEERING BRICKWORK TO NEW EXTERNAL WALLS
- Bricks: To BS EN 771-1.
 - Freeze/ Thaw category: F2
 - Active soluble salts content category: S2.
 - Additional requirements:
 - Mortar: As Section Z21
 - Additional requirements:
 - Bond: Half lap stretched bond
 - Joints: Flush
- 51 BASIC WORKMANSHIP
- Bond where not specified: Half lap stretcher
 - Mortar joints: Fill all vertical joints. Lay bricks, solid and cellular blocks on full bed.
 - AAC block thin mortar adhesive and gypsum block adhesive joints: Fill vertical joints. Lay blocks on full bed.
 - Clay block joints:
 - Thin layer mortar: Lay blocks on a full bed
 - Interlocking perpends: Butted.
 - Quoins and advance work: Rack back
 - Locations for equal levelling of cavity wall leaves:
 - Every course containing vertical twist type ties or other rigid ties
 - Every third tie course for double triangle/ butterfly ties

- Courses in which lintels are to be bedded.
- Lift height (maximum) for walling using cement gauged or hydraulic lime mortar: 1.2m above any other part of the work at any time.
- Daily lift height (maximum) for walling using cement gauged or hydraulic lime water: 1.5m for any one leaf.
- Lift height (maximum) for walling using thin joint mortar glue: 1.3m above any other part of work at any time.

55 FACEWORK

- Commencement of facework: Not less than 150 mm below finished level of adjoining ground or external works level.
- Brick/block selection: Do not use units with damaged faces or arrises.
- Cut masonry units: Where cut faces or edges are exposed cut with table masonry saw.
- Coursing brickwork and concrete blockwork: Evenly spaced using gauge rods. To produce satisfactory junctions and joints with built-in elements and components.

60 ALTERATIONS/ EXTENSIONS

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

66 FIRE STOPPING

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

F30 ACCESSORIES/ SUNDRY ITEMS FOR BRICK/ BLOCK/ STONE WALLING

To be read with Preliminaries/ General conditions.

05 CAVITIES

- Concrete fill to base of cavity:
- Concrete generally: To BS EN 206-1 and BS 8500-2.
 - Concrete type: Designated GEN1 or Standardized prescribed ST2 mix with high workability.
 - Extent: Maintain 75 mm between top of fill and external ground level and a minimum of 225 mm between top of fill and ground level dpc.
- Placement: Compact to eliminate voids.
- Cleanliness: Keep cavity faces, ties and dpcs free from mortar and debris.

08 PERPEND JOINT PLASTICS WEEP HOLES

- Manufacturer: Cavity Trays Limited
 - Product reference: Type W per cavivent and caviweep
- Locations: Through outer leaf immediately above base of cavity, at cavity trays, stepped dpcs and external openings. 75 mm above top of cavity fill at base of cavity.
- Provision: At not greater than 1000 mm centres and not less than two over each opening.

12 PARTIAL FILL CAVITY INSULATION

- Insulation: A high performance rigid thermoset polyisocyanurate (PIR) insulant manufactured with a blowing agent that has zero Ozone Depletion Potential (ODP) and low Global Warming Potential (GWP).
- Product certification: BS 4841-1: 2006
- Manufacturer: Kingspan Insulation Limited.
 - Product reference: Thermawall TW50
- Face size (length x width): To suit wall tie spacing.
- Thickness (nominal): 50mm
- Additional requirements: None.
- Placement: Secure against face of inner leaf.
 - Residual cavity: Clear and unobstructed.
- Joints between boards, at closures and penetrations: No gaps and free from mortar and debris.

18 CAVITY CLOSERS FOR CAVITY WALLS

- Manufacturer: Cavity Trays Limited
 - Product reference: Type H Cavicloser
- Accessories: Dyadic ties at 225mm centres.

25 CAVITY WALL TIES USED WITH PARTIAL FILL INSULATION FOR ALL EXTERNAL WALLS

- Standard: BS EN 845-1
 - Type: Type 2
- Manufacturer: Ancon Building Products
 - Product reference: Staifix RT2 Type 2 Tie
- Material/ finish: Stainless steel.
- Sizes: To suit cavity width, wall leaf thickness and recommended embedment depths all in accordance with manufacturers recommendations.
- Tie mounted insulation retaining clips: As recommended by tie manufacturer.

28 FIXING TIES IN MASONRY CAVITY WALLS WITH PARTIAL FILL CAVITY INSULATION

- Embedment in mortar beds (minimum): 50 mm.
- Placement: Sloping slightly downwards towards outer leaf, without bending. Drip centred in the cavity and pointing downwards.
- Spacing: Evenly space in non staggered horizontal and vertical rows.
 - Horizontal centres: 600mm.
 - Vertical centres: 450mm.
- Spacing centres of top (eaves) row of ties: 450mm.
- Provision of additional ties: Within 225 mm of reveals of unbonded openings.
 - Spacing: At not more than 300mm centres vertically.

39 WALL STARTER SYSTEM

- Manufacturer: Ancon Clark Ltd
 - Product reference: Ancon 36/8 Wall Extension System. See clause 281 for associated wall ties.
- Material/finish: Stainless steel
- Size: 36mm x 8mm x 2400mm channel
- Sealant to external vertical joint: To weatherseal the joint between the existing wall and the outer leaf to a new external wall a sealant should be applied. Insert propriety name and reference, or designation. Alternatively, a foam sealing strip can be placed between the existing wall and the wall of the starters/connectors- amend item to suit.
- Joint preparation and sealant application: As section Z22.

FLEXIBLE DAMP PROOF COURSES/ CAVITY TRAYS**48 DAMP PROOF COURSES**

- Manufacturer: Visqueen Building Products
 - Product reference: Zedex CPT High Performance DPC
- Placement: Fitted in strict accordance with manufacturers instructions.

52 SITE FORMED FLEXIBLE SHEET CAVITY TRAYS TO WINDOW/DOOR LINTELS

- Manufacturer: Visqueen Building Products
 - Product reference: Zedex CPT High Performance DPC
- Placement: Fitted in strict accordance with manufacturers instructions.

62 SITE FORMED DPC/ CAVITY TRAY JUNCTIONS/ STOP ENDS

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

INSTALLATION OF DPCS/ CAVITY TRAYS**66 HORIZONTAL DPCS**

- Placement: In continuous lengths on full even bed of fresh mortar, with 100 mm laps at joints and full laps at angles.
- Width: At least full width of leaf unless otherwise specified. Edges of dpc not covered with mortar or projecting into cavity.
- Overlying construction: Immediately cover with full even bed of mortar to receive next masonry course.
- Overall finished joint thickness: As close to normal as practicable.
- Ground level dpcs joint with damp proof membrane: Continuous and effectively sealed.

- Low level dpcs in external walls: Install not less than 150 mm above adjoining finish ground level.
- Sill dpcs form and placement: In one piece and turned up at the back when the sill is in contact with inner leaf.
- Dpcs crossing cavity: Provide support to prevent sagging.

74 INSTALLATION OF VERTICAL DPCS

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

76 MOVEMENT JOINTS WITH SEALANT GENERALLY

- Joint preparation and sealant application: As section Z22.
- Filler: Closed-cell polyethylene joint filler.
 - Thickness: To match design width of joint.
 - Manufacturer: Fosroc Limited.
 Product reference: Fosroc Expandafoam.
- Placement: Build in as work proceeds with no projections into cavities and to correct depth to receive sealant system.
- Sealant:
 - Designation: As section Z22.
 - Manufacturer: Fosroc Limited.
 - Product reference: Fosroc Nitoseal MS60
 - Colour: To be confirmed by CA.

83 PRECAST CONCRETE LINTELS

- Standard: To BS EN 845-2.
- Manufacturer: Naylor Concrete Products Ltd, Web: www.naylor.co.uk
 - Product reference: Naylor P100 Lintel
- Types: Prestressed concrete lintel
- Sizes: To be specified by structural engineer.
- Placement: Bed on mortar used for adjacent work.
 - Bearing length (minimum): To be specified by structural engineer

85 PREFABRICATED STEEL LINTELS

- Standard: To BS EN 845-2. Minimum grade S275. Is to be sourced from accredited suppliers and provided by accredited fabricators. Structural steelwork to be marked with appropriate CE marking in accordance with execution class EXC2 to BS-EN-1993-1-1.
- Manufacturer: To be specified by structural engineer
 - Product reference: To be specified by structural engineer
- Types: To be specified by structural engineer
- Materials/ Finish:
- Sizes: 152 x 152 x 23 mm (As specified by structural engineer).
- Placement: Bed on mortar used for adjacent work.
 - Bearing length (minimum): To be specified by structural engineer.

G20 CARPENTRY/TIMBER FRAMING/FIRST FIXING

To be read with Preliminaries/General conditions.

TYPES OF TIMBER

03 TIMBER PROCUREMENT

- Timber (including timber for wood based products): Obtained from well managed forests/ 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, or
 - Evidence that suppliers have adopted and are implementing a formal environmental purchasing policy for timber and wood based products.

05 STRUCTURAL SOFTWOOD FOR ROOF JOISTS AND WALL POLE PLATES

- Grading standard: To BE 4978, BS EN 14081-1, or other national equivalent and so marked.
 - Timber of a target 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 'dry' or 'KD' (kiln dried).
 - Timber graded undried (green) and specified for installation at higher moisture contents: Clearly marked as 'WET' or 'GRN0.
- Strength class to BS EN 338: To be specified by structural engineer.
- Treatment: Z12.

PRODUCTS

10 UNGRADED SOFTWOOD FOR INTERNAL NONSTRUCTURAL USE GENERALLY

- Quality of timber: Free from decay, insect attack (except pinhole borers) and with no knots wider than half the width of the section.
- Surface finish: Sawn generally, regularised for wall battens.
- Treatment:
 - Preservative treatment: Organic solvent impregnation to section Z12 and Wood Protection Association Commodity Specification C8.
Design service life: 60 years.
 - Fire retardant treatment: FR1.

15 PLYWOOD TO PARTITION WALLS

- Standard: To an approved national standard.
- Service class to BS EN 1995-1-1:
 - Service class 1 for use in dry conditions
- Use class to BS EN 335: Class 1 for dry conditions.
- Nominal thickness: 15 mm.
- Appearance class to BS EN 635: Class III or IV>

- Bond quality to BS EN 314-2: Class 1
 - Finish: Sanded.
 - Treatment:
 - Preservative treatment: Organic solvent impregnation to section Z12 and Wood Protection Association Commodity Specification CB.
 - Design service life: 30 years.
 - Fire retardant treatment: FR1.
- 30 SELECTION AND USE OF TIMBER
- Timber members damaged, crushed or split beyond the limits permitted by their grading: Do not use.
- 32 NOTCHES, HOLES AND JOINTS IN TIMBER
- Notches and holes: Position in relation to knots or other defects such that the strength of members will not be reduced.
 - Scarf joints, finger joints and splice plates: Do not use without approval.
- 35 PROCESSING TREATED TIMBER
- Cutting and machining: Carry out as much as possible before treatment
 - Extensively processed timber: Retreat timber sawn lengthways, thicknessed, planed, ploughed, etc.
 - Surfaces exposed by minor cutting/ drilling: Treat with two flood coats of a solution recommended by main treatment solution manufacturer.
- 40 MOISTURE CONTENT
- Moisture content of wood and wood based products at time of installation: No more than:
 - Covered in generally unheated spaces: 24%
 - Covered in generally heated spaces: 20%
 - Internal in continuously heated spaces: 20%
- 41 BOLT/ SCREW ASSEMBLIES
- Designation: TBC
 - Size: TBC
 - Coating Applied by manufacturer: TBC
 - Washer dimensions: Diameter/ side length of washers in contact with timber faces to be a minimum 3 times bolt diameter, with a thickness not less than 0.25 times bolt diameter.
- 43 BOLTED JOINTS
- Bolt spacings (minimum): To BS EN 1995-1, section 8.5.
 - 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.
 - 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.
 - Bolt tightening: So that washers just bite the surface of the timber. Ensure that at least one complete thread protrudes from the nut.
 - Checking: At agreed regular intervals. Tighten as necessary.
- 50 ADDITIONAL SUPPORTS

- Provision: Position and fix additional studs, noggins and/or ceiling mounted appliances, fixtures, etc. shown on drawings.
- Material properties: Timber to be of adequate size and have the same treatment as adjacent timber supports.

55 JOISTS GENERALLY

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

60 JOISTS ON HANGERS

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

70 TRIMMING OPENINGS

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

85 VERTICAL RESTRAINT STRAPS

- Type: Bent strap (90 degrees)
- Manufacturer: To be specified by structural engineer
 - Product reference: To be specified by structural engineer
- Material/ Finish: Galvanised steel
- Size:
 - Cross section: Not less than 30 x 2.5 mm
 - Length: 1200 mm
- Centres: Not more than 1200 mm
- Fixing:
 - To Timber: To be specified by structural engineer
 - To masonry: To masonry not less than four screws evenly spaced, with at least one screw located within 150 mm of the bottom end of each strap.

99 U-PVC FASCIAS

- Substrate: Timber
- Battens:
 - Size: 25 x 38mm
 - Centres: 400mm c/c
 - Fixing: As recommended by cladding manufacturer.
- Weatherboarding:
 - Manufacturer: Eurocell Building Plastics Ltd, Fairbrook House, Clover Nook Road, Alfreton, Derbyshire, DE55 4RF **or similar approved by CA.**
Product reference: 'Euroboard 18mm standard board'. 400 mm deep x 16mm thick uPVC fascia boards. **Final fascia depth to be confirmed on site by CA.**
 - Profile: uPVC Square Fascia.
 - Colour: To be confirmed by CA prior to commencement.
 - Finish/ Texture: Smooth.
 - Method of fixing to each support: In strict accordance with manufacturer's instructions.

- Soffits: 200mm deep 9 mm thick vented soffit boards. **Final depths to be confirmed on site by CA.**
- Accessories/ Trims: Allow for all necessary starter trims, drip trims, joint trims, corner trims etc. in order to facilitate the installation of the weatherboarding.

J40 FLEXIBLE SHEET TANKING/DAMP PROOFING

To be read with Preliminaries/General conditions.

05 SOFT BLINDING TO HARDCORE BEDS

- Preparation: Blind with soft sand or pulverised fuel ash.
- Thickness (minimum): 50mm
- Finish on completion: Smooth, consolidated bed free of sharp projections.

TYPES OF TANKING/DAMP PROOFING**20 LOOSE LAID POLYETHYLENE DAMP PROOF MEMBRANE FOR FLAT ROOF**

- Substrate: Insulation board
- Membrane manufacturer: Visqueen Building Products.
- Thickness/gauge: 450 Micrometers, 500 gauge.
- Joints: Lapped minimum 150mm.
 - Surface to be jointed: Clean and dry.
- Sealing: Continuous mastic strip between overlaps; edge of top sheet sealed with jointing tape.

21 LOOSE LAID POLYETHYLENE DAMP PROOF MEMBRANE

- Substrate: Insulation Board
- Membrane manufacturer: Visqueen Building Products.
- Thickness/gauge: 450 Micrometers, 1200 gauge.
- Joints: Lapped minimum 150mm.
 - Surface to be jointed: Clean and dry.
- Sealing: Continuous mastic strip between overlaps; edge of top sheet sealed with jointing tape.

WORKMANSHIP**50 WORKMANSHIP GENERALLY**

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

51 PRIMERS

- Types and application: As recommended for the purpose by the membrane manufacturer.
- Curing: Allow to dry thoroughly before covering.

55 ANGLES IN SELF-ADHESIVE DAMP PROOFING/ TANKING

- Preformed rot proof fillet to internal angles.
 - Size (minimum): 50 x 50 mm splay faced.
 - Bedding: Bitumen mastic or bonding compound.

- Reinforcing strip to all angles:
 - Material: As damp proofing/ tanking.
 - Width (minimum): 300 mm.
 - Timing: Apply before main sheeting.
 - Dressing of main sheeting onto adjacent surfaces (minimum): 100 mm.
- 65 JUNCTIONS WITH FLUSH DPCS/CAVITY TRAYS
- Preparation of adjacent dpcs/cavity trays:
 - Expose edge where concealed (where possible).
 - Adjoining surfaces: Clean and dry.
 - Joints: Bond/seal sheeting to wall.
 - Dressing of sheeting beyond dpc/cavity tray (minimum): 50mm
 - Bonding sealing: Mastic tape.
- 66 PREFORMED COLLARS FOR PIPES, DUCTS, CABLES, ETC.
- Manufacturer: Visqueen Building Products.
 - Product reference: Visqueen 'Top Hat Units'
 - Sealing: VisqueenPro Jointing Tape.
 - Completed junctions: Impervious.

J41 BUILT-UP FELT ROOF COVERINGS

To be read with Preliminaries/General conditions.

TYPE(S) OF COVERING**10 BUILT-UP BITUMEN SHEET WARM ROOF COVERING**

- Preparation / Primer: Clean and sweep the new roof decking and install one heavy coating of Tremco QD bitumen primer to the whole roof surface. Primer shall be applied using short knapp mohair rollers and shall be allowed to dry before installation of the VCL takes place.

Provide temporary seals to rainwater outlets on all roof areas to prevent blockages caused by roofing debris.

- Vapour Control Layer
Clean down all surfaces of dirt and debris, and
Fully bond the vapour retarder using one layer Tremco Tremtorch 10 sand finish roofing felt, with 50mm side laps, and 75mm head laps.
- Insulation:
Partially bond standard roof board Insulation by TRS of Welshpool, (130mm thick) to the VCL using Tremco PU 010 foam bonding adhesive. 4 long strips of adhesive per board, and apply pressure to the board as soon as the adhesive is applied.
- Waterproof covering:
 - System manufacturer: Tremco Limited, 393 Edinburgh Avenue, Slough, SL1 4UF.

Tel: 01753 691696, Fax: 01753 822640.

- Underlay
Install/fully bond one layer of Tremco torch on sand finish underlay onto the previously installed CTF insulation board. Ensure that all laps have a minimum 3-5mm bitumen bleed out, and side laps are 50mm and end laps are 75mm.
- Capping Sheet
Install/fully bond one layer Tremco torch on mineral finish, colour TBC, onto the previously installed sand finished underlay. Ensure that the cap sheet is offset by half a roll with the underlay, and is installed in accordance with current codes of practice. Ensure all laps have a 3-5mm bitumen bleed out.
- Guarantee: The Contractor shall obtain an insurance backed guarantee from Tremco Limited covering all workmanship and materials involved for a period of not less than 20 years and shall comply without further charge with all inspection requirements etc. necessary for the maintenance of the guarantee.

15 ROOFING GENERALLY

- Substrates: Secure, clean, dry, smooth and free from frost, contaminants, voids and protrusions.
- Adverse weather: Do not lay coverings in high winds, wet or damp conditions or in extremes of temperature unless effective temporary cover is provided over working area.
- Unfinished areas of roof: Keep dry. Protect edges of laid membrane from wind action.
- Completed coverings: Firmly attached, fully sealed, smooth, weatherproof and free draining.

16 ANCILLARY PRODUCTS AND ACCESSORIES

- Types: GRP perimeter edge trim

17 PRIMERS

- Type: Tremco Quick Drying Primer applied in accordance with clause 530.

18 BONDING COMPOUNDS

- Type: Tremco Thermastic polymer bonding adhesive.

19 ANGLE FILLETS

- Install new 50 mm x 50 mm wood fibre angle fillets fully bonded in Tremco PU 010 bonding adhesive.
All detailing is to be carried out using Tremco Torch-On Underlay, and Tremco Elastomeric mineral finish cap sheet.
- Restriction: Fillets under torch-on bitumen to be non-combustible.

30 PERIMETER TRIMS

- Manufacturer: To the roofing felt manufacturer's approval
- Type: 65/60 GRP roof edge trim
- Colour: Black
- Fixing: Propriety mechanical fixings in accordance with the manufacturer's instructions.

35 COVER STRIPS TO JOINTS IN RIGID BOARD SUBSTRATES

- Material: Masking tape.
- Width: 50mm.

40 LAYING VAPOUR CONTROL LAYER

- Attachment: Securely bond or nail to substrate.
- Edges of insulation at roof edges, abutments, upstands, kerbs, penetrations and the like: Enclose, with vapour control layer:
 - Dressed up sufficiently, providing 25mm (minimum) seal when overlapped by the roof covering; or
 - Turned back 150mm (minimum) over the insulation and sealed down.
- Vapour control layer at upstands: The Tremco vapour barrier must be dressed up at all upstands above the Insulation to a minimum height of 150mm. This is to ensure a lap of 100mm is constructed above the installed fillet. The contractor must form all perimeter details so that a 100mm lap is obtained between the installed vapour barrier and the Tremco Underlay.
- Laps: 75 mm minimum, fully bitumen sealed.
- Penetrations: Fully seal using bonding or taping methods recommended by manufacturer.
- Exposed edges: Enclose with vapour control layer to provide an adequate seal when overlapped by roof covering. Form a complete envelope around insulation.

45 LAYING WARM ROOF INSULATION

- Preparation: Clean the applied vapour control layer. Remove all debris and ensure the surface is dry and free from sharp objects that may damage subsequently applied BUR.
- Setting out:
- Lay boards with their long edges at right angles to the panels or diagonally across the roof, ensuring board joints do not coincide with those panels. Board joints to be lightly butted and bonded.
- Bedding: Fully bond Insulation board to the vapour control layer using Tremco Thermastic polymer bonding adhesive
- Mechanical fixing: Not required.
- Completion: Boards must be in good condition, well fitting and with no springing, flexing or rocking.
- Edge protection: Contractor to install tanalised timber kerbs to protect edge detail of the installed Insulation, size to match the Insulation being installed, mechanically fixed at 300mm centres to the existing roof deck.

50 LAYING BITUMEN SHEETS GENERALLY

- Direction of laying: Where practicable, lay from the lowest point of roof, with bitumen sheets unrolled up the slope.
 - Sheets: Install so that water drains over and not into laps.
- Laps: Seal.
 - Side (minimum): 50mm
 - End (minimum): 75mm
- Head and side laps: Offset.
- Side laps offset:
 - Two layer coverings: 1/2 sheet width.
 - Three layer coverings: 1/3 sheet width.
- Intermediate and top layers: Fully bond.
- Successive layers: Apply without delay. Do not trap moisture.

51 POUR AND ROLL BONDING OF REINFORCED BITUMEN MEMBRANES

- Bonding compound: Hot and fluid when bitumen sheets are laid. Spread evenly so that a small quantity is squeezed out at each edge.
- Bond: Full over whole surface, with no air pockets.
- Excess compound at laps:
 - First and intermediate layers. Spread out.
 - Top layers: Remove.

52 TORCH-ON BONDING OF REINFORCED BITUMEN MEMBRANES

- Bond: Full over whole surface, with no air pockets.
- Excess compound at laps of top layer: Leave as a continuous bead.

53 LAYING MINERAL FACED REINFORCED BITUMEN MEMBRANES

- Lap positions and detailing of ridges, eaves, verges, hips, abutments, etc: Submit proposals.
- Setting out: Neat with carefully formed junctions.
- Lap bonding: Carry out only at prefinished margins or prepared 'black to black' edges.
- Excess bonding compound at laps: Remove whilst still warm.

56 DETAILS GENERALLY

- General: All detailing is to be carried out using Tremco Torch-On Underlay, and Tremco Elastomeric mineral finish felt.
- Requirement: Waterproof. Form with adequate overlapping, staggering of laps and bonding of successive bitumen sheets.
- Strips of bitumen sheet required for 'linear' details: Cut from length of roll, rather than from width.

Allow for all external trims or termination flashings to all areas including external faces of the new build construction.

Allow for all waterproofing to upstands as per main roof specification, and where necessary allow for new cover flashings to be installed using a non-lead substitute such as Hertalead or Ubbiflex. Flashings shall be wedged, pointed and have a mastic sealant at the interface of flashing and brickwork.

Allow for new re-furbishment roof outlets such as Harmer or Hercules.

Allow for formation of gutters as necessary, minimum of 600mm wide and for waterproofing as per main roof specification.

70 SKIRTINGS/UPSTANDS

- Angle fillets: Fix by bitumen bonding.
- First layer of bitumen sheet - Tremco Torch-On Underlay: Stop at angle fillet, or run under angle fillet. Fully bond in bitumen for 300mm around perimeters. Overlap onto upstand with strips of Tremco Torch-On Underlay, fully bonded.

J41 Bitumen sheet roof coverings (continued)

J41

- Second layer of bitumen sheet -Tremco Torch-On Elastomeric mineral finish felt: Carry in staggered formation up upstand, with each layer fully bonded. Where practicable, carry top layer over top of upstand.
- Upstands:
 - The minimum recommended height for constructing waterproofing details is 150mm from the top of the waterproofing. Special attention should be paid to all structures, such as rooflights, counter flashings, window and door cills, etc. These may have to be raised to enable a 150mm high waterproofing detail to be formed (where possible).
 - All upstands are to be primed using Tremco Quick Drying Primer at rates of 75m² per 25 litres. Apply by soft brush from a paint tray or similar.
 - At ends of rolls: Form with bitumen sheet carried up without using separate strip.
 - Elsewhere: Form with matching strips of bitumen sheet, maintaining laps.

75 WELTED DRIPS

- Material: 6mm hardboard former which shall be nailed to the timber hard edge and waterproofed using Tremco torch on sand finish roofing felt and Tremco mineral finish cap sheet to match existing.
 - Length: Form using maximum length strips.
 - Height at external gutter (minimum): 75 mm.
- Welt tail: Nail to face of drip batten. Fold neatly.
- Welt: Bond together. Carry minimum 100 mm onto roof and overlap with top bitumen membrane.

K10 GYPSUM BOARD DRY LININGS/ PARTITIONS/ CEILINGS

15 LINING ON TIMBER PARTITIONS

- Substrate: Timber as section G20.
- Linings: 15mm Gyproc Duraline Plasterboard.
- Fixing: Screws at 300mm centres.
- Finishing: Skim coat plaster.
 - Primer/ Sealer: As recommended by manufacturer.
 - Accessories: Metal beads/stops recommended by manufacture.

65 DRY LINING GENERALLY

- General: Use fixing, jointing, sealing and finishing materials, components and installation methods recommended by board manufacturer.
- Standard:
 - Gypsum plasterboard to BS EN 520.
 - Gypsum fibre board to BS EN 15283-2.
 - Evidence of compliance: All sheets to be CE marked. Submit Declaration of Performance (DoP).
- Cutting gypsum boards: 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.

67 SKIM COAT PLASTER FINISH TO PARTITION WALLS

- Plaster type: Gyproc Thistle Board Finish.
 - Thickness: 2-3 mm.
- Joints: Fill and tape except where coincident with metal beads.
- Finish: Tight, matt, smooth surface with no hollows, abrupt changes of level or trowel marks.

68 SKIM COAT PLASTER FINISH TO EXISTING WALLS

- Plaster type: Gyproc Thistle Multi Finish.
 - Thickness: 2-3 mm.
- Joints: Fill and tape except where coincident with metal beads.
- Finish: Tight, matt, smooth surface with no hollows, abrupt changes of level or trowel marks.

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.

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 services.
 - Board edges and lining perimeters.

75 NEW WET LAID BASES

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

85 MINERAL WOOL INSULATION

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

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 gypsum board: After sealing, fill with joint compound.

90 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.

K11 RIGID SHEET FLOORING/SHEATHING/DECKING/SARKING/ LININGS/ CASINGS

To be read with Preliminaries/General conditions.

10 WOOD-BASED SHEETS GENERALLY

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

40 PLYWOOD ROOF DECKING

- Substrate: Pre-treated timber Joists
- Decking: Plywood manufactured to the relevant standards and quality control procedures specified in BS 5268: Part 2, and so marked.
 - Type: 18 mm
 - Grade: WBP
 - Edges: Tongued and grooved all edges
- Setting out: Long edges running across supports. End joints to be central over joists and staggered.
- Fixing:
 - Fasteners: Fix decking to each support with 50mm x 3.35mm galvanised ring shank nails at 300mm maximum centres.
 - Along each support: 25mm from each long edge and at maximum 100mm centres between.
- Expansion provision:
 - Leave 10mm clear expansion gap around perimeter of roof area and any upstands.
 - From intermediate expansion/ movement joints as recommended by decking manufacturer.

67 ADDITIONAL SUPPORTS

- Additional studs, noggins and battens:
 - Provisions: In accordance with board manufacturer's recommendations and as follows:
 - Tongue and groove jointed rigid board areas: To all unsupported perimeter edges.
 - Butt jointed rigid board areas: To all unsupported edges.
- Size: Not less than 50 mm wide and of adequate thickness.
- Treatment (where required): As for adjacent timber supports.

72 BOARD MOISTURE CONTENT AND CONDITIONING

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

85 FIXING GENERALLY

- Boards/sheets: Fixed securely to each support without distortion and true to line and level.
- Fasteners: Evenly spaced in straight lines and, unless otherwise recommended by board manufacturer, in pairs across joints.
 - Distance from edge of board/sheet: Sufficient to prevent damage.
- Surplus adhesive: Removed as the work proceeds.

90 OPEN JOINTS

- Perimeter joints, expansion joints and joints between boards: Free from plaster, mortar droppings and other debris.
- Temporary wedges and packings: Removed on completion of board fixing.

K32 PANEL CUBICLES/ DUCT AND WALL LININGS/ SCREENS**15 DUCT/WALL LINING SYSTEM**

- Manufacturer: Polyflor Ltd, PO Box 3, Radcliffe New Road, Whitefield, Manchester, M45 7NR. Tel: 0161 767 1111, Fax 0161 767 1128, E-mail: info@polyflor.com, Website: www.polyflor.com.
- Product Reference: Polyclad Plus PU wall cladding
- Type: 2mm Flexible homogenous PVC vinyl wall cladding (sheet)
- Panels: 2 x 20 m (40m²) roll size
- Edge Treatment: Polyurethane surface treatment
- Fasteners: Acrylic based adhesive (F48 or KE2000S)
- Skirting: Site-formed coving to be formed in conjunction with Polyflor Ejecta 'CF' Cove-Former and Ejecta 'CS' Capping strips

20 INSTALLATION

- Programming: Do not install cubicles or duct/ wall panels before building is weather tight, wet trades have finished their work, wall and floor finishes are complete, and the building is well dried out.
- Accuracy: Set out to ensure frames and/ or panels and doors are plumb, level and accurately aligned.
- Modifications: Do not cut, plane or sand prefinished components except where shown on drawings.
- Fixing: Secure components using methods and fasteners recommended by the cubicle manufacturer. Prevent pulling away, bowing or other distortions to frames, panels and doors.

K40 DEMOUNTABLE SUSPENDED CEILINGS

To be read with Preliminaries/General conditions.

TYPES OF SUSPENDED CEILING

10 SUSPENDED CEILING SYSTEM TO ALL REFURBISHED AREAS

- Standard: To BS EN 13964.
- Evidence of compliance: All ceiling kits to be CE marked. Submit Declaration of Performance (DoP).
- Ceiling system: Tiles.
- Type: Dune Tegular Fine texture- in Prelude 24 Universal Main Runners.
- Manufacturer: Armstrong World Industries, Freephone 0800 371849, fax 01895 274287.
- Suspension system: Grid and hanger fixings and spacing's as recommended by the suspended ceiling/membrane manufacturer.
- Grid type: Exposed 24mm Grid System – Prelude 24 XL Grid
- Reference: 'School zone' and 'Kitchen Zone'
- Grade: Standard.
- Colour: Global white (WG)
- Hangers: Trulok BP AW950 Suspension wire secured to soffit with brackets and fixings recommended by suspended ceiling contractor.
- Perimeter trims: Trulok perimeter angle trim BPT1924, or for a full module ceiling with plasterboard perimeter margin use Armstrong Axiom Transitions System as detailed below.
- Materials: Dune Tegular fine texture
- Size: 600 x 600 x 15 mm.
- Finish/colour: White.
- Acoustic performance:
 - Sound absorption (alpha w): 0.60 (H)
 - Sound attenuation (Dncw): 34
 - Insulation: 0.06
- Services fittings: Install
- Other requirements: Angle trims to perimeter screwed to perimeter shadow batten.

11 SUSPENDED CEILING SYSTEM TO ALL REFURBISHED AREAS

- Standard: To BS EN 13964.
- Evidence of compliance: All ceiling kits to be CE marked. Submit Declaration of Performance (DoP).
- Ceiling system: Tiles.
- Type: Ceramaguard tiles
- Manufacturer: Armstrong World Industries, Freephone 0800 371849, fax 01895 274287.
- Suspension system: Grid and hanger fixings and spacing's as recommended by the suspended ceiling/membrane manufacturer.
- Grid type: Exposed 24mm Grid System – Prelude 24 XL² Grid
- Reference: Ceramaguard
- Grade: Standard.
- Colour: Global white (WG)
- Hangers: Trulok BP AW950 Suspension wire secured to soffit with brackets and fixings recommended by suspended ceiling contractor.
- Perimeter trims: Trulok perimeter angle trim BPT1924, or for a full module ceiling with plasterboard perimeter margin use Armstrong Axiom Transitions System as detailed below.
- Materials: Ceramaguard Tiles

- Size: 600 x 600 x 15 mm.
- Finish/colour: White.
- Acoustic performance:
 - Sound absorption (α_w): 0.60 (H)
 - Sound attenuation (Dncw): 34
 - Insulation: 0.06
- Services fittings: Install
- Other requirements: Angle trims to perimeter screwed to perimeter shadow batten.

40 WORKMANSHIP GENERALLY

- Fixing: Secure. In accordance with manufacturers' recommendations and in accordance with BS EN 13964. Provide additional bracing and stiffening to give a stable ceiling system.
- Setting out: Accurate. Provide level soffits free from undulations and lipping.
- Lines and joints: Straight and parallel to walls, unless specified otherwise.
- Edge Infill unit sizes (minimum): Half standard width and length.
- Grid: Position to suit infill unit sizes. Allow for permitted deviations from nominal sizes to infill units.

L10 WINDOWS/ ROOFLIGHTS/ SCREENS/ LOUVRES

To be read with Preliminaries/ General conditions.

GENERAL

05 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.

30 PVC-U EXTERNAL WINDOWS

- Manufacturer: Veka PLC, Farrington Road, Rossendale Road Industrial Estate, Burnley, Lancashire, BB11 5DA, Tel: 01282 716611.
- Product reference: **Veka plc Matrix 70 PVC-U system**. All joints are to be fully welded and finished with a shadow groove joint. Windows shall be fabricated strictly in accordance with the requirements of the relevant VEKA Technical Manual and all specialist contractors must be trained and approved by the systems company.
- Design: **As window schedule. Windows will be top hung casement style with 100mm restrictors with override facility.**
- Colour/Texture: **Please note that all windows are to be provided with a smooth coloured foil finish on the external face only (internal face to be white). External finish colour to be confirmed from full colour range.**
- Glazing details: As section L40
 - Beading: Internally beaded.
- Ironmongery: Top hung casement opening sashes will be fitted with shoot bolt espagnolette locking gear incorporating mushroom cams operated by white paint finish push button to open lever handles. Windows will be fitted with a surface mounted restrictor limiting the initial opening of the windows to 100mm nominal. The restrictor will self re-engage after the window is closed. Moving parts of the window shall have sufficient strength and robustness to withstand normal incidental and dynamic wind loads occurring during use. Opening sashes will be fitted with one pair of sash locking wedges along the top rail when the width exceeds 800mm and two pairs where the sash width exceeds 1200mm. Top hung outward opening casements shall be fitted with two stainless steel friction stays fixed into the reinforcement with self tapping screws and fitted in accordance with the manufacturer's instructions.
- Ventilation: Trickle ventilation is to be provided to the heads of all casements to ensure compliance with the Building Regulations.
- Accessories: Allow for all necessary 'VekaTrim' uPVC cappings, trims, corner angles, beads, fillets etc. to the new screens for the proper and neat completion of the installation.
- Quality & Environmental Management:
 - Quality: Profiles manufactured under guidelines: BS EN ISO 9001 with systems company holding the relevant accreditation.
 - Environmental: Profiles manufactured under guidelines: BS EN ISO 14001 with Systems Company holding the relevant accreditation

- Materials:
 - PVC-U: Manufactured from VEKA extruded hollow PVC-U to BS EN 12608.
 - Environmental: Profile supplier to comply with Vinyl Plus. The BRE confirm that the life expectancy of a PVC-U window can be expected to exceed 35 years. PVC-U can be recycled many times without any significant change to the physical properties of the material. We can expect therefore that the PVC-U already installed in buildings today can still be in buildings for centuries to come.
- Authority & Performance:
 - BS 7412:2007: Performance: Plastic windows and doors made from PVC-U extruded hollow profiles
 - BS 6375: Part 1, 2 & 3. Performance: Windows and door sets, classification for weather tightness, specification for operation and strength characteristics and general performance criteria.
 - PAS 24:2012: Security: Specification for enhanced security performance of casement, tilt turn windows and external door sets for domestic applications (BS7950 or replacement standard)
 - BS EN 1991-1-4:2005: Design: Loadings for buildings
 - BS EN ISO 10077 Part 1:2006 Part 2:2012: Thermal performance of windows, doors and shutters. Calculation of thermal transmittance. Simplified method. Energy ratings at the clients request.
 - BS 8213: Part 1:2004: Safety: Windows doors and roof lights. Design for safety in use and during cleaning of windows, including door-height windows and roof windows.
 - Guarantees periods:
 - PVC-U profiles: 10 Years
 - Composite door slabs: 10 Years
 - Hardware components: 10 years
 - Double glazed units: 10 years
 - Terms & Conditions: Must be supplied by supplier for approval by client.
- Installation:
 - PVC-U: Installation of fenestration systems shall be performed by a registered member of an authorised Competent Persons Scheme and approved VEKA fabricator/installer, in accordance with issued drawings. Installation, Fixing & glazing shall be in accordance with BS 8213 Part 4:2007.
 - Protection & cleaning: The sub-contractor shall be responsible for any damage to the materials under this section of the specification incurred by him during installation and shall leave the work in a clean condition. The general contractor shall be responsible for the protection of these materials from damage by other trades and shall be responsible for the final cleaning of the work.
- Extent of works:
 - The units supplied will include all items and materials for their installation, making good, and use, including:
 - Fixed and opening lights;
 - Ventilators;
 - Glazing and gasketry;
 - Ironmongery and furniture;
 - Weather sealing;
 - All necessary trims, internal and external mastics, foam fillers, and other ancillary items required for an effective and neat finish to the works.
- Survey/Dimension & Design:
 - The units supplied are to be manufactured to suit existing/prepared openings in accordance with BS 8213 Part 4:2007.
 - The Window and Door Survey or Installer (Specialist Contractor) is expected to make a pre tender visit to site / inspection of all relevant drawings and

documents, including risk assessments, in order to ascertain all relevant conditions, structural details and site layout. No additional claim will be entertained for items that would be apparent during the pre-tender site visit. The Contractor must allow in his tender for the replacement of all items specified and/or required.

- The Specialist Contractor shall allow in his price for a survey visit to site in order to take the dimensions and adjacent structural details of every window and door that is to be replaced.
- The Specialist Contractor is responsible for ensuring that all new windows are square and central in the opening, and that a perimeter gap shall be provide to allow adequate thermal expansion and contraction of the framing, consistent with the site location and limitations of the perimeter sealant used.
- The Specialist Contractor shall provide drawings to the Main Contractor depicting all profiles, glazing, weather seals, gaskets fixings and sealants to be used and the relationship of the above to the adjacent structural detail for each window/door type.
- Allow for any anomalies and variations in the size of the openings, and for out-of-square openings. This is to include for the manufacture of 'specials' as necessary.
- The Specialist Contractor is to provide drawings showing the relationship of framing to structure, including all profiles, sealants, fixings, trims and weather seals.
- Notwithstanding any information within this Specification, all framing and infills shall be capable of withstanding the design wind loadings calculated in accordance with BS6399 Pt2: 1997, and imposed loads as defined in BS6399 Pt1: 1996, and the systems company shall provide the Specialist Contractor calculations to demonstrate this upon receipt of project detail.
- Opening lights shall be no closer to FFL than 1100mm, opening lights below this level shall be protected by an appropriate opening barrier provided by others.
- Standards:
 - The frames are to comply with all relevant British Standard Specification, Code of Practice, and Statutory Requirements (including all revisions and amendments), as well as the guides and recommendations laid down by the relevant trade organisation relating to their performance, constituent materials, methods of assembly and use. Any exceptions to the above are to be confirmed in writing by the Specifier.
 - PVC-U window profiles to be designed and manufactured by an approved systems company to BS EN ISO.9001 Management System.
 - PVC-U window profiles to be manufactured by an approved systems company under Environmental Systems BS EN ISO 14001: Manufactured from VEKA extruded hollow PVC-U to BS EN 12608. (Nominated profiles to include recycled content in strict accordance with this standard.)
 - The window extrusion systems manufacturer must hold British Standard Kitemark licences for "Plastics windows made from unplasticized polyvinyl chloride (PVC-U) extruded hollow profiles. The fabricated product is to conform to BS 7412:2007 with steel or aluminium reinforcement in accordance with BPF Code of Practice 323/1 and BS 6375 Parts 1,2 & 3 (as appropriate).
 - The window fabricator must hold British Standard Kitemark licences for BS7412 "Specifications for windows and door sets made from unplasticized polyvinyl chloride (PVC-U) extruded hollow profiles Domestic Applications". Enhanced Security of Casement and Tilt & Turn Windows for Domestic Applications PAS 24:2012. Prior to commencement of work on site, the Specialist Contractor shall forward copies of the Kitemark Certificates to the Contract Administrator.
- Reinforcement:

- All white windows shall be locally reinforced, in steel, in accordance with the relevant technical manual but must meet the correct wind resistance (pascal rating) for the area.
- All laminated coloured profiles shall be fully reinforced, in steel, in accordance with the relevant technical manual.
- Please refer to VEKA plc Technical Department for exact requirements.
- For Guidance (windload less than 1200 pa):
 - No reinforcement to outer frames where direct fixing is achieved
 - Mullions < 600mm no reinforcement
 - Mullions 600 – 1200mm 65mm mullion with 1.5mm steel
 - Mullions 1200 – 1400mm 75mm mullion with 2mm steel
 - Top hung casements <1000mm no reinforcement
 - Side hung casements <1000mm high no reinforcement
 - Side hung casements <700mm wide no reinforcement
 - Screw fixings into local reinforcement
 - Coloured laminated profile to be reinforced
- Appearance & Design:
 - All window designs and finishes must take into account any restrictions or requirements of local planning departments.
 - Where planning applications are required, the specialist contractor will provide full working drawings and process the planning application to conclusion.
- Gaskets:
 - All gaskets should be supplied and pre-fitted by the systems company in bar length prior to frame manufacture thus ensuring gasket is welded in each corner.
 - The gasket sightlines shall not exceed the profile sightline to keep overall sightlines to a minimum.
- Weather Performance:
 - The system company will provide CAD drawings and proposed design for any application which exceeds maximum recommended sizes as indicated in the technical manual.
 - For windows in severe locations the performance shall be as specified below to BS 6375, Part 1, 2009, and will achieve a pass for mechanical testing to BS6375, Part 2:2009.
 - Water Tightness: Class 7A (300 Pascals)
 - Air Permeability: Class 3 (600 Pascals)
 - Wind Resistance: Class AE 2400 (2400 Pascals)
 - For windows in other locations the performance shall be as specified below to BS 6375, Part 1, 2009, and will achieve a pass for mechanical testing to BS6375, Part 2:2009.
 - Water Tightness: Class 7A (300 Pascals)
 - Air Permeability: Class 3 (600 Pascals)
 - Wind Resistance: Class A3 (1200 Pascals)
 - All framing including mullions, transoms and couplers shall be capable of withstanding the design wind loadings calculated in accordance with BS EN 1991-1-4:2005.
- Drainage:
 - All horizontal lower rails of frames, transoms and sashes within a window or door shall be drained to allow water to escape. Drain slots (30mm x 5mm) to be in accordance with the product manual.
 - The frames are to incorporate an adequate means of concealed self-drainage. This is to be achieved using a sub-cill or drainage tray, according to site requirements, allowing drainage through frame of window and exiting via hidden drainage holes in the nose of the sub-cill or drainage tray.

- Glazing packers should not obstruct the drainage and profile specific bridging packers must be used.
 - Cill ends to be closed with plastic end caps and sealed.
 - Cill profiles to be selected according to the position of each frame within the structural opening.
 - Installation/fixing:
 - See Clauses 756 & 783
- 56 INTERNAL GLAZED WOOD SCREEN SYSTEM
- Location: See Window & Screen Schedule
 - Manufacturer:
 - Product Reference:
 - Screen height: Refer to drawings/ window schedule
 - Fire Resistance rating of complete system: To BS 476-22, 30 min integrity
 - Materials:
 - Frames: Timber- Species: Hardwood as Table NA2
 - Finish: Painted white.
 - Thermal performance (U-value maximum)
 - Fire Performance: 30min fire protection to be achieved by glazing.
 - Glazing details: 7mm Pilkington Pyrodur Clear
 - Manifestation: The contractor is to allow for manifestation to glazed screens to fully comply with the current Building Regulations Part M.
 - Fixing: Screw fixing and pelleting
 - Fastening spacing: When not predrilled 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.
- 65 PRIMING/ SEALING
- Wood surfaces inaccessible after installation. Prime or seal as specified before fixing components.
- 70 FIRE RESISTING FRAMES
- Gap between back of frame and reveal: Completely fill with intumescent mastic or tape.
- 75 INTERNAL SEALANT JOINTS
- Sealant: Silicone sealant.
 - Manufacturer: Fosroc Limited
 - Product reference: Fosroc Hilastic LM
 - Colour: White
 - Application: As section Z22 to prepared joints. Finish triangular fillets to a flat or slightly convex profile.
- 76 EXTERNAL SEALANT JOINTS
- Sealant: Polsulphide sealant.
 - Manufacturer: Fosroc Limited.
 - Product Reference: Fosroc Nitoseal MS100
 - Colour: To be confirmed by CA from manufacturer's full colour range.
 - Application: As Section Z22 to prepared joints. Triangular filets finished to a flat or slightly convex profile.
- 80 IRONMONGERY
- 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.

- Checking/ Adjusting/ Lubricating: Carry out a completion and ensure correct functioning.

L20 DOORS/ SHUTTERS/ HATCHES

To be read with Preliminaries/ General Conditions.

GENERAL

10 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.

20 INTERNAL **FD30S** FIRE RESISTING WOOD FLUSH DOORS

- Drawings: Refer to door schedule.
- Manufacturer: Doors and frames by one supplier only from the following list of approved companies under a BWF Quality Assurance Scheme or Registration to BS 5750: Part 2:
 - Leaderflush + Shapland
 - Young's Doors
 - Porters
 - Or similar approved by CA.
- Performance: To the requirements of BSI DD171: 1987. 'Guide to specifying performance requirements for hinged or pivoted doors (including test methods)' for the following categories of duties as set out in the schedules.
 - Heavy duty (HD)
 - Severe duty (SD)
- Test certificates to be provided for each of the categories of duties specified.
- Fire Resistance: Where specified in the schedules in accordance with BS 5588 'Fire precautions in the design and construction of buildings as follows: FD 30' Where fire doors are required to resist smoke, they are designated in the schedules by adding the suffix 'S'. Door sets so classified must resist smoke penetration at ambient temperatures and limited smoke at medium temperatures as defined in BS PD 6572 and BS 476: Part 22 by means of seals mounted in the door frame and one or both meeting door styles.
- Identification of Fire Resistance: Identify each door leaf and frame using the TRADA/BWF 'Stick of Rock' colour coding identification system consisting of a 6mm diameter coloured plug let 25mm into the edge of the door or frame and located so that planing will not remove colour coding.
- Facings: min 8mm timber veneer facing to both sides (**veneer type to be confirmed by CA**).
- Lipping's: min 8mm thick European selected hardwood to both long edges.
- Core: Solid multi-layer particleboard - severe duty.
- Finish as delivered: Timber veneer finish, as noted above.
- Glazing/ Infill details: Refer to door schedule. Glazing to L40/65
 - Manifestation: Not required.
 - Beading: As L40/65.
- Ironmongery: See appended ironmongery schedule.
- Other requirements: Fire and smoke seals, as per appended Ironmongery Schedule.

21 INTERNAL NON-FIRE RESISTING WOOD FLUSH DOORS

- Drawings: Refer to door schedule.
- Manufacturer: Doors and frames by one supplier only from the following list of approved companies under a BWF Quality Assurance Scheme or Registration to BS 5750: Part 2:
 - Leaderflush + Shapland
 - Young's Doors
 - Porters
 - Or similar approved by CA.
- Facings: Painted white to both sides
- Lipping's: min 8mm thick European selected hardwood to both long edges.
- Finish as delivered: Timber veneer finish.
- Glazing/ Infill details: No glazing.
- Ironmongery: See appended ironmongery schedule.
- Other requirements: None.

50 INTERNAL FIRE RESISTING WOOD DOOR FRAMES

- Materials generally: To BS EN 942.
 - Wood species: Softwood as table NA1
 - Appearance Class: J20
- Section 100 x 75 0mm finished size. Chamfered arises and 15 mm rebate.
- Assembly:
 - Adhesive: WBP.
 - Joinery workmanship: As section Z12.
- Preservative treatment: Organic solvent as section Z12 and British Wood Preserving and Damp-proofing Association Commodity Specification C5.
Desired service life: 30 years.
- Finish as delivered: Primed by manufacturer for painting as clause M60/130.
- Perimeter seals: Fire and smoke seals, as per appended Ironmongery Schedule.
- Fixing: As clause 790.

31 NEW EXTERNAL THERMALLY BROKEN ALUMINIUM COMMERCIAL DOOR SYSTEM

Manufacturer: Senior Architectural Systems Ltd

Product reference: SPW500/01 COMMERCIAL THERMAL DOOR AND FRAMEWORK by

Senior Architectural Systems Ltd, Eland Road, Denaby Main, Doncaster, DN12 4HA

Tel: 01709 772600; Fax: 01709 772601; email: info@seniorarchitectural.co.uk;
www.seniorarchitectural.co.uk

Aluminium alloy door profiles to conform to BS EN 755-9, alloy 6063 T5 or T6. All doors shall be fabricated from square cut components, mechanically jointed, from the S.A.S SPW500 Series range of profiles from aluminium alloy conforming to BS EN 755- alloy 6063 T5 or T6. Polyamide thermal barriers PA66 GF25

Corners shall be reinforced with special aluminium cleats/brackets bolted together, along with torsion bars in the top and bottom rails for compressive strength. A Proprietary sealant to protect against water entry should be used on all metal to metal joints and cleat insertion points at assembly.

Doors are to be commercial quality with heavy duty pivot assembly and with concealed transomatic overhead closers with hold open device. (Light, Medium, Heavy, DDA duty TBC on door widths) and radius anti-finger trap stiles.

Standard lock door Stiles (SPW51415) shall be 71.5 x 47mm. Unless AXPR7085PAL Concealed Emergency Push Paddle/bar exit devices are to be used then (SPW52122) 110 x 47mm door stiles to be used

Standard Pivot stiles (SPW51011 AFT bulbous stile / SPW52828 AFT Jamb trim, shall be 97mm combined) so that, when the door is opened, the gap between the door jamb and stile does not exceed 4mm in any position). Unless AXPR7085AL Concealed Emergency Push Bars are to be used then SPW51015 AFT Panic Bar door stile / SPW52828 AFT Jamb trim to be used, maintaining the same 4mm gap)
Emergency exit doors to be confirmed with the Architect. (Refer to schedule)

Top rails (SPW51213) shall be 119 x 46mm, Bottom rail (SPW51213) shall be 119 x 46mm. Mid Rail.

The door frame shall incorporate a double ramp threshold, with integral drainage ref SD501N in natural anodised finish, the door leaf to have double wool-pile to the stiles, top rail and bottom rail, in order to provide a degree of weather resistance. Mid rail as per architect's drawings

Finish as delivered: The finish is to be polyester powder coating, complying with the requirements of BS 6496: 1984, to a minimum thickness of 40 microns (60 microns in hazardous environments). This finish to be obtained using an 8 stage pre-treatment operation, prior to the application of the polyester External: Polyester Powder coated to minimum 40 microns thickness.

- Finish: PPC RAL 7016 (Anthracite Grey) From standard colour range.
- Glazing details: to be beaded to take 28 mm insulating glass units, to meet BS6262 and conform to BS6206, also to suit Part M and DDA.
Glazing gaskets and seals to be extruded thermo-plastic rubber, and are to be and meet BS4255

All of the double glazing will be 28 mm thick, insulating glass overall to BS 5713, thermetically sealed and kitemark certified. These to be made up as follows:-

Glazing:-

28.8mm insulating DGU units. As per Guardian Glass data sheet details
Outer pane: 6mm SN75 toughened on Extra Clear float (Heat Soak Tested)
coating to face 2

Cavity: 16mm Black warm edge spacer 90% argon filled

Inner pane: 6.8mm Sound Control Laminated on Extra Clear float

To have a minimum centre pane U value of 1.0

Pane Size: Stress and deflection calculations to be produced based upon a pane and wind loading of 1.5 kN/m² to be verified by a structural engineer, architect and Glass manufacturer.

- Thermal performance of all glazing, to be in accordance with Document L2 of the Building Regulations, for England & Wales 2016.
- Acoustic performance as per Guardian Glass data sheets and acoustician report.

All glazing to suit BS6262

Ironmongery:

All doors to be fitted with Standard Cranked "D" Push Pull Handles @ 300mm centres x 32mm dia (PPC or SAA 30 shades different to doors) to both sides for

opening (unless AXPR7085 emergency exit Paddles (PAL) / bars (AL) are used with relevant door closing stiles.

Locks-

Adams Rite maximum security hook locks with Euro-profile cylinders with thumb-turn to the inside face (Top lock for daytime use).

Additional security lock for night use to be incorporated (Key operated both sides) Where applicable (Bottom Lock).

AXPR7085 Emergency Exit push bars (AL) / Push Paddles (PAL) where required to Fire exit areas.

Door rails to incorporate external glazing up stand as part of section, with separate beads only to the inside of each rail and to both sides of vertical sections, as an aid to security.

61 ROLLER SHUTTER TO KITCHEN & CHAIR STORE

- Manufacturer: Access Group UK, Unit 1, Farnworth Industrial Estate, Emlyn Street, Farnworth, Bolton, BL4 7AQ, UK Tel: 01204 572208 E-mail: reception@accessgroupco.uk Web: www.accessgroupuk.co.uk
- Product Reference: Roller Shutter Doors
- Size: To accommodate openings shown on door schedule.
- Colour/ Finish: Polyester powder coated in steel to be confirmed by CA from manufacturer's **full colour range.**
- Curtain: Constructed of rust resistant galvanised interlocking slats cold-formed to an accurate profile, interlocking to present a uniform faced curtain. Alternative slats have riveted endlocks to prevent lateral movement. Supplied complete with a reinforced bottom rail.
- Guides: Steel channel guides are mounted on angle iron securing brackets to give necessary support.
- Roller: Seamless steel tube fitted with internal helical springs of hard drawn steel wire, wound to a maximum diameter and assembled into the roller without stretching or pre-stressing. Bright steel shafts run in ball races, strong enough to give full support to the bearings to resist the torque of the springs. The whole roller is greased and sealed, with necessary brackets.
- Finish: Prime painted
- Operation: Electrically operated by remote control. Connected to the fire alarm system.
- Accessories: Manual chain

70 FIRE AND SMOKE RESISTANCE

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

75 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.

80 INTERNAL SEALANT JOINTS

- Sealant: Silicone sealant.
- Manufacturer: Fosroc Limited
- Product reference: Fosroc Hilastic LM

- Colour: White
- Application: As section Z22 to prepared joints. Finish triangular fillets to a flat or slightly convex profile.

81 EXTERNAL SEALANT JOINTS

- Sealant: Polsulphide sealant.
- Manufacturer: Fosroc Limited.
- Product Reference: Fosroc Nitoseal MS100
- Colour: To be confirmed by CA from manufacturer's full colour range.
- Application: As Section Z22 to prepared joints. Triangular filets finished to a flat or slightly convex profile.

85 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.

L30 STAIRS/ LADDERS/ WALKWAYS/ HANDRAILS/ BALUSTRADES

To be read with Preliminaries/ General conditions.

PRELIMINARY INFORMATION/ REQUIREMENTS

05 SITE DIMENSIONS

- Procedure: Before starting work on designated items take site dimensions, record on shop drawings and use to ensure accurate fabrication.
- Designated items: Balustrades as Clause 570.

COMPONENTS

65 PURPOSE MADE EXTERNAL HANDRAILS/BALUSTRADES

- Component material, grade and finish as delivered:
 - Handrails: 40mm diameter tubular steel, galvanised to BS EN ISO 1461 and finished with a polyester powder coating to Section Z31 from the entire BS/RAL colour range.
 - Lower handrail (midrail): 40mm diameter tubular steel, galvanised to BS EN ISO 1461 and finished with a polyester powder coating to Section Z31 from the entire BS/RAL colour range.
 - Brackets: Steel, galvanised to BS EN ISO 1461 and finished with a polyester powder coating to Section Z31 from the entire BS/RAL colour range.
- Handrail height: 1100mm from finished ground level.
- Workmanship:
 - Metalwork: To Section Z11.
- Fixing: Posts to be set in a concrete foundation/haunching.

45 EXTERNAL RAMPS/ WALKWAYS

- Component material, grade and finish as delivered:
 - Flooring: concrete flagged surface
 - Edging: concrete flag-on-edge
 - Handrails: To L30/65
- Gradient: Approx. 1:13
- Cross fall: BS 8300-2 1:50 for external locations.

80 INSTALLATION GENERALLY

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

L40 GENERAL GLAZING

To be read with Preliminaries/General conditions.

GENERAL REQUIREMENTS

10 WORKMANSHIP GENERALLY

- Glazing generally: to BS 6262.
- Integrity: Glazing must be wind and watertight under all conditions with full allowance made for deflections and other movements.
- Glass:
 - Standards: Generally to BS 952 and relevant parts of:
 - BS EN 572 for basic soda lime silicate glass.
 - BS EN 1096 for coated glass.
 - BS EN 12150 for thermally toughened soda lime silicate glass.
 - BS EN ISO 12543 for laminated glass.
 - Quality: Free from scratches, bubbles and other defects.
 - Dimensional tolerances: Panes/ sheets to be accurately sized.
- Material compatibility: Glass/plastics surround materials, sealers primers and paints/ clear finishes to be used together are compatible. Comply with glazing/ sealant manufacturers' recommendation.

30 PREPARATION

- Surrounds, rebates, grooves and beads: Clean and prepare before installing glazing.

55 BEAD FIXED INSULATING GLASS UNITS TO EXTERNAL WINDOWS/ DOORS/ SCREENS

- IGU: As clause 60.
- Pane material: 28 mm insulating glass units to BS EN 1279, Kitemark certified to achieve a weighted average U-value of 1.8W/m²k for the whole unit.
 - Inner pane: 6.8mm clear laminated with ClimaGuard A 1.0 toughened, to have a minimum centre pane U value of 1.0 w/m²K.
 - Spacer/ cavity: 16 mm Black Warm edge Argon filled.
 - Outer pane: 6.0mm Pilkington Optilam Safety Glass, Kitemark certified.
 - Perimeter taping: Do not use.
- Surround/ beads: Aluminium frame with aluminium beads.
 - Preparation: In strict accordance with the window/doors manufacturer's instructions.
 - Bead location: Internal.
 - Bead fixing: In strict accordance with the window/doors manufacturer's instructions.
- Glazing system: In strict accordance with the manufacturer's instructions.
 - Insulating unit: Located centrally in surround using settling and location blocks.
 - Gaskets and beads: Installed as recommended by frame manufacturer.
 - Gasket fit at corners: Tight, without gaps.
 - Drainage and ventilation holes: Unobstructed.

65 FIRE RESISTANT GLAZING TO INTERNAL TIMBER DOORS & SCREENS

- Fire rating: 30 minutes integrity
- Pane material: 7.5mm Pyrodur Plus by Pilkington UK Ltd.
- Surround/ bead: As L20/50 and L10/56 with 24x20mm hardwood beads chamfered 15° with 4x4mm bolection return.
 - Bead fixing: 38mm long steel pins @ nominal 150mm centres approximately 30° to face of glass.
- Glazing system: Tape/ strip: 20 x 2mm proprietary glazing medium ref: Dufaylite Developments Ltd Interdens intumescent seal.

- Apply glazing tape/strip to beads and fix in accordance with glazing manufacturer's recommendations. Leave no gaps at corners.
- Locate glazing centrally in surround using 3mm hardwood/non-combustible setting and location blocks as required.
- Apply pointing sealant immediately after glazing and finish to a smooth chamfer.
- Installation: By a firm currently registered under a UKAS certified accreditation scheme for the installation of fire resistant glazing, in accordance with glazing manufacturer's recommendations.
- Certification: Submit fire test certification for system, including any framing, installation and maintenance requirements or restrictions.

M10 CEMENT BASED LEVELLING/ WEARING SCREEDS

To be read with Preliminaries/ General conditions.

TYPES OF SCREED**07 PROPRIETARY QUICK DRYING LEVELLING SCREED**

- Substrate: Concrete Floor slabs
- Screed manufacturer: Tarmac Ltd.
 - Product reference: True Screed HD.
- Screed construction: Sand/Cement/Water.
 - Reinforcement for crack control: Polypropylene Fibres.
- Thickness:
 - Minimum: 60mm.
- Mix:
 - Cement: As delivered.
 - Proportions: Manufacturer's standard.
- In situ crushing resistance (ISCR) category: C35.
 - Mass of test weight: As delivered.
- Flatness/ Surface regularity class: BS EN 13813
- Finish: Trowelled finish.
 - To receive: Sheet Vinyl / Carpet
- Other requirements: No

17 PROPRIETARY LEVELLING/ WEARING SCREEDS

- General: Materials, mix proportions, mixing methods, minimum/ maximum thicknesses and workmanship must be in accordance with recommendations of screed manufacturer.
- Standard: To BS 8204-3.

18 CONDUITS CAST INTO OR UNDER SCREEDS

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

45 AGGREGATES

- Sand: To BS EN 13139.
 - Grading limits: In accordance with BS 8204-1, Table B1.
- Coarse aggregates for fine concrete levelling screeds:
 - Standard: To BS EN 12620.
 - Designation 4/10.
- Lightweight aggregates: In accordance with BS 8204-1, Annex A.
- Cement types: Cement types: In accordance with BS 8204-1, clause 5.1.3.
- Aggregates: In accordance with BS 8204-3.

47 ADMIXTURES

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

50 MIXING

- Water content: Minimum necessary to achieve full compaction, low enough to prevent excessive water being brought to surface during compaction.
- 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.
- Consistency: Use while sufficiently plastic for full compaction.
- Ready-mixed retarded screed mortar: Use within working time and site temperatures recommended by manufacturer. Do not retemper.

52 COMPACTION OF SCREEDS

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

55 JOINTS IN LEVELLING SCREEDS GENERALLY

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

60 FORMED JOINTS IN WEARING SCREEDS

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

75 TROWELLED FINISH TO LEVELLING SCREEDS

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

80 TROWELLED FINISH TO WEARING SCREEDS

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

90 CURING

- 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.
- Curing period (minimum): Keep polyethylene sheeting in position for 48 hours.
- 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.

M20 PLASTERED/ RENDERED/ ROUGHCAST COATING

To be read with Preliminaries/ General conditions.

TYPES OF COATING**50 GYPSUM PLASTER SKIM COAT ON PLASTERBOARD**

- Plasterboard: As K10
- Preparation: Bonding agent recommended by plaster manufacturer.
- Plaster: Board finish plaster to BS EN 13279-1, class B.
- Manufacturer: British Gypsum Ltd
- Product reference: Thistle Board Finish
- Thickness: 2 mm applied in 1 coat
- Finish: Smooth as clause 777.

65 MIXING

- Render mortars (site-made):
- Batching: By volume using gauge boxes or buckets
- Mix proportions: Based on damp sand. Adjust for dry sand.
- Mixes: Of uniform consistence and free from lumps.

67 COLD WEATHER

- External work: Avoid when air temperature is at or below 5°C and falling or below 3°C and rising. Maintain temperature of work above freezing until coatings have fully hardened.
- Internal work: Take precautions to enable internal coating work to proceed without detriment when air temperature is below 3°C.

71 SUITABILITY OF SUBSTRATES

- General: Suitable to receive coatings. Sound, free from contamination and loose areas.

74 EXISTING DAMP AFFECTED PLASTER/ RENDER

- Plaster affected by rising damp: Remove to a height of 300 mm above highest point reached by damp or 1 m above dpc, whichever is higher.
- Perished and salt contaminated masonry:
 - Mortar joints: Rake out
 - Masonry units: Submit proposals.
- Drying out substrates: Establish drying conditions.

76 REMOVING DEFECTIVE EXISTING PLASTER

- Plaster for removal: Loose, hollow, soft, friable, badly cracked, affected by efflorescence or otherwise damaged.
- Removing plaster: Cut back to a square, sound edge.

82 BEADS/ STOPS

- Location: External angles and stop ends, except where specified otherwise.
- Material: Galvanized steel to BS 13658-1.
- Corners: Neat mitres at return angles.
- Fixing: Secure, using longest possible lengths, plumb, square and true to line and level, ensuring full contact of wings with substrate.
 - Beads/ stops for external render: Fix mechanically.
- Finishing: After coatings have been applied remove surplus material, while still wet, from surfaces of beads/ stops exposed to view.

87 APPLICATION OF COATINGS

- General: Apply coatings firmly and achieve good adhesion.
- Appearance of finish surfaces: Even and consistent. Free from ripping, hollows, ridges, cracks and crazing.
 - Accuracy: Finish to a true plane with walls and reveals plumb and square.
- Drying out: Prevent excessively rapid or localized drying out.
- Keying Undercoats: Cross scratch plaster coatings and comb render coatings. Do not penetrate undercoat.

93 CURING AND DRYING OF RENDER COATINGS

- Curing: Keep each coat damp by covering with polyethylene sheet and/ or spraying with water.
 - Curing period (minimum): 3-4 days
- Drying: Allow each coat to dry thoroughly, with shrinkage substantially complete before applying next coat.

99 RENDER FINAL COAT- PLAIN FLOATED FINISH

- Finish: Even, open texture free from laitance.