

Gorton Community Hub; Specification

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Unit 2, Blueberry Business Park, Kingsway, Rochdale, OL16 5DB

Telephone: 01706 647765

Facsimile: 01706 647770

E-mail: Rochdale@ibigroup.com

REVISIONS:

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30.03.2020	Clause J40/ 297 & 380 added	P12
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A01 EQUIVALENT PRODUCTS

TO BE READ WITH PRELIMINARIES/GENERAL CONDITIONS

20 IBI GUIDANCE NOTE ONLY

1. REMOVE THIS CLAUSE AFTER READING:

INCLUDE SECTION A01 INCLUDING CLAUSE 100 ONLY ON CONTRACTOR LED PROJECTS (eg P21+, D&B etc) WHERE THE CONTRACTOR IS INSISTENT ON INCLUSION OF 'OR EQUIVALENT'.

INCLUDING THIS CLAUSE WILL AVOID NEED TO INCLUDE IT IN EVERY SECTION. NOTE THAT THIS CLAUSE IS MORE ONEROUS THAN THE STANDARD NBS 'SUBSTITUTION' CLAUSE IN THE PRELIMS

100 EQUIVALENT PRODUCTS

1. Wherever products are specified by proprietary name, the phrase 'or equivalent' is deemed to be included
2. Where an 'equivalent' product is proposed, obtain architect's approval to substitution. Such agreement shall not be unreasonably withheld but will not be granted where, by comparison with the specified product, the 'equivalent' has/ is likely to have:
 - Shorter continuing availability
 - Shorter lifespan
 - Inferior sustainability characteristics
 - Greater capital or operational cost
 - Inferior relevant performance characteristics
 - Inferior functionality
 - Inferior operation
 - More costly or time consuming method of removal for maintenance/ replacement
 - Incompatibility of accessories
 - Incompatibility with adjacent work
 - Different appearance including finish/ texture/ colour/ sheen availability particularly where this would result in difficulty matching adjacent finishes/ components
 - Adverse implications with respect to programme
 - Adverse implications with respect to inspection, maintenance, cleaning or replacement
3. Reasons: Submit reasons for the proposed substitution together with any cost implications
4. Documentation: Submit technical literature and relevant information, including but not limited to:
 - Manufacturer and product reference
 - Product history and manufacturer's statement regarding current and continuing availability
 - BBA Certification (if available)
 - Lifespan of product
 - Material(s)
 - Manufacturing tolerances
 - Capital and operational costs
 - Relevant standards
 - Performance including copies of all test results demonstrating, in comparative form, the performance characteristics of the proposed alternative against those of the specified product

- Function
 - Operation
 - Method and type(s) of fixing and, where relevant, method of removal for maintenance/ replacement
 - Compatibility of accessories
 - Proposed revisions to drawings and specification
 - Compatibility with adjacent work including, where relevant, adjacent retained facilities
 - Appearance including finish/ texture/ colour/ sheen availability
 - Programme implications.
 - Inspection, maintenance, cleaning and replacement requirements/ recommendations
 - Copy of warranty/ guarantee including clear statement as to whether this is provided by manufacturer, supplier or single source. If substitution is accepted, submit before ordering product
5. Alterations to adjacent work: If needed, advise scope and nature and submit evidence of equivalent functionality, durability and appearance of whole construction

Ω End of Section

E05 IN SITU CONCRETE CONSTRUCTION GENERALLY

TO BE READ WITH PRELIMINARIES/GENERAL CONDITIONS.

310 SURFACE REGULARITY OF CONCRETE FLOORS TO BS 8204 - GENERAL

1. Standard: To BS 8204-1 or -2.
2. Measurement: From underside of a 2 m straightedge (between points of contact) placed anywhere on surface and using a slip gauge.

315A SURFACE REGULARITY OF CONCRETE FLOORS - TOLERANCE CLASS

1. Description: sr3 to BS 8204 for suspended floors
fm3 to tr34 4th edition for ground bearing slabs
2. Abrupt changes: Not permitted

Ω End of Section

E20 FORMWORK FOR IN SITU CONCRETE

CLAUSES

2 TO BE READ WITH PRELIMINARIES/ GENERAL CONDITIONS.

GENERALLY/ PREPARATION

200A PROPRIETARY UNDERSLAB INSULATION

1. Manufacturer: Kingspan Insulation Ltd, Pembridge, Leominster, Herefordshire, HR6 9LA
 - Product reference: Kingspan GreenGuard GG300 extruded polystyrene insulation board
2. Recycled content: None permitted
3. Thickness:
 - Under slab: 30 mm
 - To edge of slab: Not required

CONSTRUCTION

315 SUBSTRUCTURE FORMWORK AND UNDERSLAB INSULATION

1. Cutting: Neat and accurate to edges, and around penetrations and downstands
2. Laying: Tightly butted and fully supported on firm, even substrate
3. Vertical faces: Stiffen as necessary to act as shutter
4. Formwork/ insulation surfaces: Protect from indentation by spacers and other items
5. Joints in formwork/ insulation and with edge structure and penetrations: Seal to prevent penetration of concrete
6. Concrete placement: Restrain formwork/ insulation against movement

STRIKING - NOT USED

FORMED FINISHES - NOT USED

Ω End of Section

E60 PRECAST/ COMPOSITE CONCRETE FLOORS/ ROOF DECKS

CLAUSES

2 TO BE READ WITH PRELIMINARIES/ GENERAL CONDITIONS.

PROPRIETARY FLOORS/ ROOF DECKS

185 PRECAST STAIRS

1. Description:
2. Manufacturer: Contractor's choice
 - Product reference: Contractor's choice
3. Dimensions:
 - Overall depth of landings (excluding finishes): As shown on detail drawing(s)
 - Overall depth of stair stringer including waist (excluding finishes): As shown on detail drawing(s)
 - Overall rise: As shown on detail drawing(s)
4. Span: As shown on detail drawing(s)
5. In situ continuity reinforcement: Submit proposals
6. Void formers: Not permitted
7. Finish:
 - Exposed faces: To BS EN 13670, Plain finish
 - Treads and risers: To BS EN 13670, Plain finish
8. Other requirements: None

PERFORMANCE SPECIFIED FLOORS/ ROOF DECKS - NOT USED

GENERAL/ PERFORMANCE

240 DETAILING OF PROPRIETARY SYSTEM

1. Installation details: Submit location and assembly drawings showing every aspect of the construction, incorporated components and features, trimming for voids, holes for services, and related work by others
 - Purpose: To allow checking of compatibility with surrounding structure and coordination of services
2. Method statement and risk assessment for installation: Submit
3. Programme: Submit well in advance of construction

250 CONTRACTOR'S STRUCTURAL DESIGN

1. Design: Complete in accordance with the designated code of practice to satisfy specified performance criteria
 - Composite construction: Not applicable
 - Fully precast construction: Provide diaphragm and tie action where required

INSTALLATION - NOT USED

Ω End of Section

F10 BRICK/ BLOCK WALLING

CLAUSES

2 TO BE READ WITH PRELIMINARIES/ GENERAL CONDITIONS.

TYPES OF WALLING

110A CLAY FACING BRICKWORK

1. Description: To outer leaf of external cavity wall, from not less than 150 mm below finished level of adjoining ground or external works
2. Bricks: To BS EN 771-1
 - Manufacturer: To be confirmed
 - Product reference: To be confirmed
 - Durability designation: F2
 - Mean compressive strength (minimum): 27 N/mm²
 - Water absorption: Less than 12%
 - Recycled content: None permitted
 - Special shapes:
 - BS 4729 type I.SA.4.1 rebated stretcher
 - BS 4729 type I.SA 5.1 rebated stretcher external return
3. Mortar: As section Z21
 - Standard: To BS EN 998-2
 - Mix: 1:0.5:4.5 cement:lime:sand 6 N/mm² (mortar class M6) generally but 1:0.25:3 cement:lime:sand 12 N/mm² (mortar class M12) incorporating Styrene Butadiene additive to copings, unprotected cills and top 3 courses of freestanding walls
 - Additional requirements: Coloured mortar: Tarmac Building Products Ltd, pre-mixed lime:sand mortar in colour to CA's requirements from manufacturer's full range
4. Bond: Half lap stretcher
5. Joints: Generally square recessed, 4 mm deep, well ironed but flush, well ironed to window and door opening reveals and to tops and splayed sections of copings
6. Features: None

315A CLAY COMMON BRICKWORK

1. Description: To outer leaf of external cavity wall, from foundation level up to not more than 150 mm below level of adjoining ground or external works
2. Bricks: To BS EN 771-1
 - Type: HD
 - Size: 215 x 102 x 65 mm
 - Mean compressive strength (minimum): 28 N/mm²
 - Durability designation: F2 S2
 - Density:
 - Gross dry: Not applicable
 - Net dry: Not applicable
 - Water absorption: Less than 7%
 - Configuration: Solid
 - Recycled content: Contractor's choice

- Additional requirements: None
- 3. Mortar: As section Z21
 - Standard: To BS EN 998-2
 - Mix: 1:1¼:3 cement:lime:sand 12 N/mm² (class M12)
 - Additional requirements: None
- 4. Bond: Half lap stretcher

355A CONCRETE COMMON BLOCKWORK

1. Description: Internal generally
2. Blocks: To BS EN 771-3
 - Configuration: Group 1
 - Compressive strength:
 - Mean value: 7.3 N/mm²
 - Characteristic value: Not applicable
 - Category: I
 - Recycled content: None permitted
 - Work sizes (length x width x height): 440 x 140 x 215 mm
 - Tolerance category: D1
 - Special shapes: None
 - Additional requirements: None
3. Mortar: As section Z21
 - Standard: To BS EN 998-2
 - Mix: 1:1:6 cement:lime:sand 4 N/mm² (class M4)
 - Additional requirements: None
4. Bond: Half lap stretcher

355B SMOOTH FACED PAINT GRADE CONCRETE COMMON BLOCKWORK

1. Description: Internal where fairfaced
2. Blocks: To BS EN 771-3
 - Configuration: Group 1
 - Compressive strength:
 - Mean value: 7.3 N/mm²
 - Characteristic value: Not applicable
 - Category: I
 - Recycled content: None permitted
 - Work sizes (length x width x height): 440 x 140 x 215 mm
 - Tolerance category: D1
 - Special shapes: None
 - Additional requirements: Paint grade
3. Mortar: As section Z21
 - Standard: To BS EN 998-2
 - Mix: 1:1:6 cement:lime:sand 4 N/mm² (class M4)
 - Additional requirements: None
4. Bond: Half lap stretcher

355C CONCRETE COMMON BLOCKWORK

1. Description: Below ground
2. Blocks: To BS EN 771-3
 - Configuration: Group 1
 - Compressive strength:
 - Mean value: 7.3 N/mm²
 - Characteristic value: Not applicable
 - Category: I
 - Water absorption: Less than 7%
 - Freeze/ Thaw resistance: Frost resistant
 - Recycled content: None permitted
 - Work sizes (length x width x height): 440 x 140 x 215 mm
 - Tolerance category: D1
 - Special shapes: None
 - Additional requirements: None
3. Mortar: As section Z21
 - Standard: To BS EN 998-2
 - Mix: 1:0.5:4.5 cement:lime:sand 6 N/mm² (mortar class M6)
 - Additional requirements: None
4. Bond: Half lap stretcher

397 THERMAL BRIDGING BLOCKS

1. Manufacturer: Pittsburgh Corning UK Limited, 31-35 Kirby Street, London, EC1N 8TE
 - Product reference: Foamglas Perinsul HL insulating, loadbearing blocks
 - Size (length x width x height): 450 x 100 x 65 mm
 - Mean compressive strength: > 2.75 mpA
2. Fixing: Mortar as specified to walling above/ below

TESTING

410A COMPRESSIVE STRENGTH OF MORTAR FOR EACH WALLING TYPE

1. Refer to Structural Engineer's Specification

415 FRESH MORTAR CEMENT CONTENT

1. Test method: BREMORTEST in accordance with Building Research Establishment Information Paper 8/89
2. Test specimens: Test mortar for the following wall types: F10/ 110A .
3. Results: Submit

WORKMANSHIP GENERALLY

430 CONDITIONING OF CLAY BRICKS AND BLOCKS

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

440 CONDITIONING OF CONCRETE BRICKS/ BLOCKS

1. Autoclaved concrete bricks/ blocks delivered warm from manufacturing process: Do not use
2. Age of nonautoclaved concrete bricks/ blocks: Do not use until at least four weeks old

3. Avoidance of suction in concrete bricks/ blocks: Do not wet
 - Use of water retaining mortar admixture: Submit details

460 MORTAR DESIGNATIONS

1. Mix proportions: For a specified designation select a mix from the following:
 - Designation (i) (BS EN 998-2 M12 equivalent)
 - 1:0-¼:3 (Portland cement:lime:sand with or without air entraining additive).
 - 1:3 (Portland cement:sand and air entraining additive).
 - Designation (ii) (BS EN 998-2 class M6 equivalent)
 - 1:½:4-5 (Portland cement:lime:sand with or without air entraining additive).
 - 1:3 (masonry cement:sand containing Portland cement and lime in approximate ratio 1:1, and an air entraining additive).
 - 1:2½-3½ (masonry cement:sand containing Portland cement and inorganic materials other than lime and air entraining additive).
 - 1:3-4 (Portland cement:sand and air entraining additive).
 - Designation (iii) (BS EN 998-2 class M4 equivalent)
 - 1:1:5-6 (Portland cement:lime:sand with or without air entraining additive).
 - 1:3½-4 (masonry cement:sand containing Portland cement and lime in approximate ratio 1:1, and an air entraining additive).
 - 1:4-5 (masonry cement:sand containing Portland cement and inorganic materials other than lime and air entraining additive).
 - 1:5-6 (Portland cement:sand and air entraining additive).
 - Designation (iv) (BS EN 998-2 class M2 equivalent)
 - 1:2:8-9 (Portland cement:lime:sand with or without air entraining additive).
 - 1:4½ (masonry cement:sand containing Portland cement and lime in approximate ratio 1:1, and an air entraining additive).
 - 1:5½-6½ (masonry cement:sand containing Portland cement and inorganic materials other than lime and air entraining additive).
 - 1:7-8 (Portland cement:sand and air entraining additive).
2. Batching: Mix proportions by volume
3. Mortar type: Continuous throughout any one type of masonry work

500A LAYING GENERALLY

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

520 ACCURACY

1. Courses: Level and true to line
2. Faces, angles and features: Plumb
3. Permissible deviations
 - Position in plan of any point in
4. relation to the specified building

5. reference line and/ or point at
6. the same level ± 10 mm.
 - Straightness in any 5 m length ± 5 mm.
 - Verticality up to 3 m height ± 10 mm.
 - Verticality up to 7 m height ± 14 mm.
 - Overall thickness of walls ± 10 mm.
 - Level of bed joints up to 5 m
 - (brick masonry) ± 11 mm.
 - Level of bed joints up to 5 m
 - (block masonry) ± 13 mm.
7. (brick masonry) ± 11 mm.
 - Level of bed joints up to 5 m
8. (block masonry) ± 13 mm.

535 HEIGHT OF LIFTS IN WALLING USING CEMENT GAUGED OR HYDRAULIC LIME MORTAR

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

545A LEVELLING OF SEPARATE LEAVES

1. Locations for equal levelling of cavity wall leaves: As follows:
 - 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
2. Where coursing to inner and outer leafs differs or inner leaf is constructed in advance of outer leaf, use F30/ 221 channel/ slot ties in lieu of conventional wall ties

560 COURSING BRICKWORK

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

580 LAYING FROGGED BRICKS

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

595 LINTELS

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

635 JOINTING

1. Profile: Consistent in appearance

645 ACCESSIBLE JOINTS NOT EXPOSED TO VIEW

1. Jointing: Struck flush as work proceeds

671 FIRE STOPPING

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

690 ADVERSE WEATHER

1. General: Do not use frozen materials or lay on frozen surfaces
2. Air temperature requirements: Do not lay bricks/ blocks
 - In cement gauged mortars when at or below 3°C and falling or unless it is at least 1°C and rising.
 - In hydraulic lime:sand mortars when at or below 5°C and falling or below 3°C and rising, or as manufacturer's/ supplier's recommendations.
 - In thin layer mortars when outside the limits set by the mortar manufacturer.
3. Temperature of walling during curing: Above freezing until hardened
4. Newly erected walling: Protect at all times from:
 - Rain and snow.
 - Drying out too rapidly in hot conditions and in drying winds.

ADDITIONAL REQUIREMENTS FOR FACEWORK

705 SUPPLIERS

1. Obtain all facing bricks and matching special facing bricks direct from their manufacturer and not, without the written consent of the CA, from any other source

710 THE TERM FACEWORK

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

740 FINISHED MASONRY WORK REFERENCE PANELS

1. General: Before proceeding to construct the following walling types, construct panels as specified. Give notice when panels are dry
2. Selection of masonry units: Reasonably representative of the average quality of the whole order to be delivered
3. Panel types
 - Walling type: F10/ 110A
 - Location: In good natural light and so that panel(s) can be seen in juxtaposition with the finished work
 - Size: 1565 mm wide x 1500 mm high
 - Other requirements: Movement joint with sealant as clause F30/ 610

750 COLOUR CONSISTENCY OF MASONRY UNITS

1. Colour range: Submit proposals of methods taken to ensure that units are of consistent and even appearance within deliveries
2. Conformity: Check each delivery for consistency of appearance with previous deliveries and with approved reference panels; do not use if variation is excessive
3. Finished work: Free from patches, horizontal stripes and racking back marks

760 APPEARANCE

1. Brick/ block selection: Do not use units with damaged faces or arrises
2. Cut masonry units: Where cut faces or edges are exposed cut with table masonry saw
3. Quality control: Lay masonry units to match relevant reference panels
 - Setting out: To produce satisfactory junctions and joints with built-in features and components
 - Coursing: Evenly spaced using gauge rods

4. Lifts: Complete in one operation
5. Methods of protecting facework: Submit proposals

780 GROUND LEVEL

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

790 PUTLOG SCAFFOLDING

1. Use: Not permitted in facework

830 CLEANLINESS

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

Ω End of Section

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

CLAUSES

2 TO BE READ WITH PRELIMINARIES/ GENERAL CONDITIONS.

CAVITIES

110 CONCRETE FILL TO BASE OF CAVITY

1. Concrete generally: To BS EN 206 and BS 8500-2
2. Concrete type: Designated GEN1
 - Workability: High
3. 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
4. Placement: Compact to eliminate voids

120 CLEANLINESS

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

132 PERPEND JOINT PLASTICS WEEP HOLES

1. Manufacturer: Rytons Building Products, Kettering Business Park, Kettering, NN15 6NL
 - Product reference: SVMIN Slim Vent Minor (Cavity Vent/ Weep) perpend cavity ventilator
2. 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
3. Provision: At not greater than 1000 mm centres and not less than two over each opening

150A FULL FILL CAVITY INSULATION

1. To plinth areas below curtain walling
2. Insulation: Rock wool batts to BS EN 13162
 - Product certification: British Board of Agrément (BBA) Certificate number 94/ 3079
3. Manufacturer: Rockwool Ltd, Pencoed, Bridgend, CF35 6NY
 - Product reference: Rockwool Cavity Batts
4. Recycled content: Submit proposals
5. Face size (nominal length x width): 1200 x 455 mm
6. Thickness (nominal): 125 mm
7. Thermal conductivity: 0.037 W/(m.K)
8. Reaction to fire class: A1
9. Additional requirements: None
10. Placement: Continuous and free of mortar and debris

152 FULL FILL CAVITY INSULATION FOR USE BELOW CAVITY LEVEL

1. Insulation: Fibre-free rigid extruded polystyrene insulation
 - Product certification: Not Applicable
2. Manufacturer: Kingspan Insulation Ltd, Pembroke, Leominster, Herefordshire, HR6 9LA
 - Product reference: GreenGuard GG300
3. Recycled content: Contractor's choice
4. Face size (nominal length x width): 1250 x 600 mm
5. Thickness (nominal): 125 mm

6. Thermal conductivity: 0.034 W/(m.K)
7. Reaction to fire class: F
8. Additional requirements: None
9. Placement:
 - Continuous and free of mortar and debris.
 - Residual cavity: Clear and unobstructed
10. Joints between boards at closures and penetrations: Loose laid break-bonded with joints lightly butted and free from mortar and debris

155A PARTIAL FILL CAVITY INSULATION

1. Description: To wall type e2 (sfs backing wall)
2. Insulation: Rock wool batts BS EN 13162
 - Product certification: British Board of Agreement (BBA) Certificate number 93/ 2884
3. Manufacturer: Rockwool Ltd, Pencoed, Bridgend, Mid-Glamorgan, CF35 6NY
 - Product reference: Rainscreen Duo Slab
4. Recycled content: Not applicable
5. Face size (length x width): 1200 x 600 mm
6. Thickness (nominal): 75 mm
7. Thermal conductivity: 0.035 W/(m.K)
8. Reaction to fire class: A1
9. Additional requirements: None
10. Placement: Secure against face of inner leaf
 - Residual cavity: Clear and unobstructed
11. Joints between boards, at closures and penetrations: No gaps and free from mortar and debris

155B PARTIAL FILL CAVITY INSULATION

1. Description: To wall type e3 & e4 (blockwork backing wall)
2. Insulation: Rock wool batts BS EN 13162
 - Product certification: British Board of Agreement (BBA) Certificate number 93/ 2884
3. Manufacturer: Rockwool Ltd, Pencoed, Bridgend, Mid-Glamorgan, CF35 6NY
 - Product reference: HP Partial Fill Cavity Slabs
4. Recycled content: Not applicable
5. Face size (length x width): 1200 x 455 mm
6. Thickness (nominal): 150 mm
7. Thermal conductivity: 0.034 W/(m.K)
8. Reaction to fire class: A1
9. Additional requirements: None
10. Placement: Secure against face of inner leaf
 - Residual cavity: Clear and unobstructed
11. Joints between boards, at closures and penetrations: No gaps and free from mortar and debris

159 CAVITY INSULATION TO STRUCTURAL STEELWORK EXPOSED WITHIN CAVITY

1. Insulation: Polyethylene bubble sheet laminated both sides with aluminium foil
 - Product certification: British Board of Agreement (BBA) Certificate number 93/ 2861

2. Manufacturer: Thermal Economics Ltd, Thermal house, 1 Cardigan Street, Luton, Bedfordshire, LU1 1RP
 - Product reference: Alreflex 2L2 Super-R insulation
3. Recycled content: Not applicable
4. Roll width: 1200 mm
5. Surface spread of flame rating: Class O
6. Additional requirements: None
7. Placement: Secure over face of steelwork using: clout nails and manufacturer's blue plastic washers
 - Residual cavity: Clear and unobstructed
8. Joints between boards, at closures and penetrations: No gaps and free from mortar and debris

182A FIRE RESISTING CAVITY CLOSERS

1. Description: To external door & window jambs
2. Manufacturer: Kingspan Insulation Ltd, Pembroke, Leominster, Herefordshire, HR6 9LA
 - Product reference: Kooltherm Cavity Closer
3. Accessories:
 - Moulded PVC-U fixing ties
 - Jointing strips
4. Other requirements: To suit cavity width

REINFORCING/ FIXING ACCESSORIES

215 CAVITY WALL TIES USED WITH PARTIAL FILL INSULATION

1. Description:
2. Standard: To BS EN 845-1
 - Type: 1 (Masonry heavy duty)
3. Manufacturer: Ancon Building Products, President Way, President Park, Sheffield, S4 7UR
 - Product reference: Ref ST1 heavy duty wall ties
4. Material/ finish: Austenitic stainless steel - material/ coating reference 3
5. Sizes: Cavity width + 125 mm
6. End types: Symmetrical deformed plate for mortar bedding
7. Embedment length (minimum): 63 mm
8. Movement: Non tolerant
9. Additional requirements: None
10. Tie mounted insulation retaining clips: As recommended by the manufacturer

218A SHEAR WALL TIES

1. Description: Abutting columns
2. Standard: To BS EN 845-1
3. Manufacturer: Ancon Building Products, President Way, President Park, Sheffield, S4 7UR
 - Product reference: Ref PPV wall tie with debonding sleeve
4. Material/ finish: Austenitic stainless steel - material/ coating reference 3
5. Fixing centres: Alternate courses
6. Sizes: 175 mm
7. Fixing: Fixed to columns using ITW Buildex Ltd self drilling fasteners

220A LATERAL RESTRAINT WALL TIES TO MOVEMENT JOINTS

1. Manufacturer: Ancon Building Products, President Way, President Park, Sheffield, S4 7UR
 - Product reference: Ref PPS lateral restraint wall ties with plastic debonding sleeves
2. Material/ finish: Austenitic stainless steel
3. Fixing centres: Alternate courses
4. Sizes: 225 mm

222 FRAME CRAMPS

1. Description:
2. Manufacturer: Ancon Building Products, President Way, President Park, Sheffield, S4 7UR
 - Product reference: Ref SDB frame cramps
3. Material/ finish: Austenitic stainless steel
4. Sizes:
 - 275 mm for cavities between 195-219 mm
 - 300 mm for cavities between 220-244 mm
5. Tie mounted insulation retaining clips: As recommended by tie manufacturer
6. Additional requirements: 3 mm thick thermal break pads

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

1. Embedment in mortar beds (minimum): 50 mm
2. Placement: Sloping slightly downwards towards outer leaf, without bending. Drip centred in the cavity and pointing downwards
3. Spacing: Evenly space in non staggered horizontal and vertical rows
 - Horizontal centres: 600 mm
 - Vertical centres: 450 mm
4. Provision of additional ties: Within 225 mm of reveals of unbonded openings and at the vertical reveals of unsupported masonry
 - Spacing: At not more than 300 mm centres vertically generally but in every course where masonry units are 215 mm high

248 CHANNEL/ SLOT TIES USED WITH PARTIAL FILL INSULATION

1. Description:
2. Standard: To BS EN 845-1
3. Manufacturer: Ancon Building Products, President Way, President Park, Sheffield, S4 7UR
 - Product reference: Ref 25/ 14 channel system with ref SD25 wall ties
4. Material/ finish: Austenitic stainless steel - material/ coating reference 3
5. Sizes:
 - Channel: 25 x 14 mm
 - Ties: Cavity width + 49 mm (to provide minimum 63 mm embedment)
6. Channel/ slot fixing: Surface
7. End types: Asymmetrical deformed (pierced) plate and flat plate for mortar bedding
8. Embedment length (minimum): 63 mm
9. Additional requirements: None
10. Tie mounted insulation retaining clips: As recommended by the manufacturer

260 ANGLE SUPPORTS

1. Description:

2. Standard: To BS EN 1090-1
3. Manufacturer: Ancon Building Products, President Way, President Park, Sheffield, S4 7UR
 - Product reference: MDC bracket angle support system to Structural Engineer's details
4. Material: Steel to European Standards indicated in BS EN 1090-2
5. Size: To suit cavity width and unfactored masonry load
6. Fixings (complete with washers and shims): To suit supporting structure
7. Additional requirements: Ancon Building Products ref BK03-135 fibre reinforced thermoset plastic thermal breaks

265 SUPPORT SYSTEM

1. Description: For brickwork window reveals
2. Manufacturer: Ancon Building Products, President Way, President Park, Sheffield, S4 7UR
 - Product reference: Ancon Reveal Support Plate
3. Material: Austenetic Stainless Steel
4. Components, arrangement and dimensions: As shown on drawings

FLEXIBLE DAMP PROOF COURSES/ CAVITY TRAYS

330A DAMP PROOF COURSES

1. Description: Co-polymer thermoplastic
2. Manufacturer: Visqueen Building Products, Visqueen Building Products, Heanor Gate, Heanor, Derbyshire, DE75 7RG
 - Product reference: Zedex CPT High Performance dpc

335 INSULATED DAMP PROOF COURSES - PITCH POLYMER

1. Manufacturer: IKO plc, Appley Lane North, Appley Bridge, Wigan, WN6 9AB
 - Product reference: Hyload FR Insulated DPC comprising polymeric sheet dpc bonded to 20 mm thick phenolic foam

345 SITE FORMED FLEXIBLE SHEET CAVITY TRAYS – PLASTICS

1. Standard: To BS EN 14909
2. Material: Co-polymer thermoplastic
3. Manufacturer: Visqueen Building Products, Heanor Gate, Heanor, Derbyshire, DE75 7RG
 - Product reference: Zedex CPT High Performance dpc
4. Additional requirements: Self adhesive detailing strip for forming complex shapes and junctions

390 JUNCTION CLOAKS/ STOP ENDS FOR SITE FORMED DPCS/ CAVITY TRAY

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

INSTALLATION OF DPCS/ CAVITY TRAYS

415A INSTALLATION OF HORIZONTAL DPCS

1. Placement: In continuous lengths on full even bed of fresh mortar, with 100 mm laps at joints and full laps at angles
2. Width: At least full width of leaf unless otherwise specified. Edges of dpc not covered with mortar or projecting into cavity
3. Overlying construction: Immediately cover with full even bed of mortar to receive next masonry course

4. Overall finished joint thickness: As close to normal as practicable

425 INSTALLATION OF GROUND LEVEL DPCS

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

435 INSTALLATION OF STEPPED DPCS IN EXTERNAL WALLS

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

445 INSTALLATION OF SILL DPCS

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

455 INSTALLATION OF COPING/ CAPPING DPCS

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

465 SEALING OF DPCS

1. Description:
2. Overlaps and junctions: Seal with Visqueen Building Products Zedex double sided butyl jointing tape .

475 INSTALLATION OF SITE FORMED CAVITY TRAYS

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

485 INSTALLATION OF CAVITY TRAYS OVER OPENINGS AND OTHER CAVITY BRIDGINGS

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

515A DPC/ CAVITY TRAY LEADING EDGE IN FACEWORK - FLUSH

1. Treatment at face of masonry: Finish flush and clear of mortar in all locations

560A INSTALLATION OF VERTICAL DPCS GENERALLY

1. Form: In one piece wherever possible
 - Joints: Upper part overlapping lower not less than 150 mm and sealed

570 INSTALLATION OF JAMB DPCS AT OPENINGS

1. Joint with cavity tray/ lintel at head: Full underlap
2. Joint with sill/ horizontal dpc at base: Full overlap
3. Projection into cavity: Not less than 25 mm
4. Relationship with frame: In full contact

JOINTS

610 MOVEMENT JOINTS WITH SEALANT

1. Description: To external facing brickwork

2. Joint preparation and sealant application: As section Z22
3. Filler: Low density, low compression closed cell polyethylene
 - Thickness: To match design width of joint
 - Manufacturer: Grace Construction Products Ltd (Servicised), Ajax Avenue, Slough, Berkshire, SL1 4BH
 - Product reference: Aerofil 1 low density, compressible, closed cell circular polyethylene joint filler
 - Placement: Build in as work proceeds with no projections into cavities and to correct depth to receive sealant system
4. Sealant
 - Designation: ISO 11600 12.5P F
 - Manufacturer: Adshead Ratcliffe & Co Ltd, Derby Road, Belper, Derby, DE56 1WJ
 - Product reference: Arbokol 1000 polysulphide joint sealant
 - Colour: To CA's requirements from manufacturer's full range

650A POINTING IN FLASHINGS

1. Joint preparation: Free of debris and lightly wetted
2. Caulking compound:
 - Manufacturer: Cavity Trays Ltd, Yeovil, Somerset, BA21 5HU
 - Product reference: Siliconbond caulking compound
3. Placement: Rake out joint as necessary, remove dust and neatly point with caulking compound to a depth of 12 mm, finished flush

660 PINNING UP TO SOFFITS

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

670A HEAD OF NON-LOADBEARING WALLS

1. Restraints:
 - Manufacturer: : Ancon Building Products, President Way, President Park, Sheffield, S4 7UR
 - Product reference: : Ref IHR-V internal head restraint to suit 215 mm block (Min. 150 mm where required) and a 25-50 mm gap
 - Fixing: To soffit of concrete slab or to hot rolled steelwork in accordance with manufacturer's recommendations
2. Joint filler:
 - Manufacturer: PFC Corofil, Units 3-4 King George Trading Estate, Davis Road, Chessington, Surrey, KT9 1TT
 - Product Reference: C144 Firestop Strips with Fastight Coating
 - Placement: Full, no gaps

PROPRIETARY SILLS/ LINTELS/ COPINGS/ DRESSINGS

745A PRESTRESSED CONCRETE LINTELS

1. Standard: To BS EN 845-2
2. Manufacturer: Naylor Lintels, Longlands Industrial Estate, Milner Way, Longlands Industrial Estate, Ossett, Wakefield, WF5 9JE
 - Product reference:
 - 100 x 145 mm Hi-Spec pre-stressed lintels ref R6 or, as recommended by manufacturer to suit span and loading, 100 x 215 mm Hi-Spec pre-stressed lintels

ref R9 to suit 100 mm thick non-fire resisting/ 30 mins fire resisting blockwork partitioning

- 140 x 215 mm Hi-Spec pre-stressed lintels ref R8 to suit 140 mm thick non-fire resisting/ 30 mins fire resisting blockwork partitioning
- 100 x 145 mm Ultra-Fire pre-stressed lintels ref Ultrafire 100-6 or, as recommended by manufacturer to suit span and loading, 100 x 215 mm Ultra-Fire pre-stressed lintels ref Ultrafire 100-9 to suit 100 mm thick 60 mins fire resisting blockwork partitioning
- 140 x 215 mm Fire-Spec pre-stressed lintels ref FireR8 to suit 140 mm thick 60 mins fire resisting blockwork partitioning

3. Types: Single

4. Placement: Bed on mortar used for adjacent work. Prop at not more than 1.2 m centres to prevent displacement during construction. Retain props in position for not less than 14 days or until mortar has matured, whichever is longer

- Bearing length (minimum): 150 mm

755C PREFABRICATED STEEL LINTELS

1. Standard: To BS EN 845-2

2. Manufacturer: Catnic, Pontypandy Industrial Estate, Caerphilly, CF83 3GL

- Product reference: Catnic lintel ref ANG

3. Types: Single

4. Material/ finish: Hot dipped galvanised steel, black polyester powder coated after fabrication

5. Placement: Bed on mortar used for adjacent work

- Bearing length (minimum): 150 mm

785 COPING SYSTEM

1. Manufacturer: Bailey Eaves Systems, Blatchford Close, Horsham, West Sussex, RH13 5RF

- Product reference: C-Fix coping system

2. Material: Aluminium to EN 485/515/573

- Thickness: 2 mm
- Finish: Matt polyester powder coating finish to BS EN 12206:2004 Part 1 and Qualicoat Class 1 standards as section Z31, average minimum film thickness 60 microns
- Colour: To CA's requirements from full RAL range

3. Fixing:

- Fix aluminium clips with EPDM sealing strips at 1000mm intervals
- Install coping to compress EPDM seals and return edge of profile to clip firmly on to projections, ensuring fixing clips are fully supported along entire width of profile
- Provide insulation to complete the thermal design of the coping system and avoid excessive cold bridging

MISCELLANEOUS ITEMS

840 OPENINGS FOR FRAMES

1. Formation: Use accurate, rigid templates to required size

Ω End of Section

G10 STRUCTURAL STEEL FRAMING

GENERAL REQUIREMENTS/ INFORMATION

140 STRUCTURAL PERFORMANCE OF G10/ 150 STEEL FRAMING SYSTEM

1. Description: Refer to Structural Engineer's Specification

FRAME SYSTEMS

150A STEEL FRAMING SYSTEM

1. Manufacturer: voestalpine Metsec plc, Broadwell Road, Oldbury, West Midlands, B69 4HE
 - System reference: Metsec Steel Framing System
2. Certification: Provide European Technical Assessment (ETA) with CE marking and a Declaration of Performance (DoP)
3. Framing:
 - Studs, head and base channels, joists, bracing, ties, angles and straps:: Fabricated from galvanised mild steel sheet to BS EN 10147 grade S350 GD+Z coating G275, with a minimum yield strength of 350 N/ mm², together with all other framing components and fastenings necessary to complete fabrication and installation
 - Framing component types, sizes, gauges and centres:: Determine in accordance with BS 5950:Part 5:1988, Structural use of steelwork in building, Part 5 'Code of Practice for Design of Cold Formed Thin Gauge Sections' and to suit outer facing(s) and inner lining(s)
 - Width(s) of channels and studs shown on detail drawings take precedence where dimension(s) exceed those determined in accordance with BS EN 1993
4. Component fastenings: ITW Buildex Ltd self-drilling, self-tapping screws. Screw size and pattern to be as determined by structural calculation and of sufficient size to achieve required strength of connection

COLD-FORMED MATERIALS - NOT USED

FABRICATION

185 DRAWINGS AND CALCULATIONS PREPARED BY CONTRACTOR

1. Requirement: Prior to fabrication of steel framing system type G10/ 150 submit:
 - General arrangement drawings with individual framing members clearly identified
 - Details of conflicts with other work
 - Calculations for major connections

WELDING - NOT USED

BOLT ASSEMBLIES

395 THERMAL BREAK CONNECTION PLATES

1. Manufacturer: Farrat Isolevel, Balmoral Rd, Altrincham, WA15 8HJ
 - Product reference: Farrat TBF A2 fire rated structural thermal break plate
2. Certification: Provide third party certification by a United Kingdom Accreditation Service (UKAS)-approved independent laboratory
3. Material: Glass fibre laminate bound with a high temperature polymer resin laminate
4. Dimensions:
 - Length: Sub-contractor design to match steelwork connection plates
 - Width: Sub-contractor design to match steelwork connection plates

- Thickness (maximum): 25 mm
- 5. Holes: Sub-contractor design to match steelwork connection plates
- 6. Thermal conductivity: 0.2 W/m-k
- 7. Maximum permitted compressive stress: 400 N/mm², MPa
- 8. Operating temperature
 - Maximum: 550 deg C
 - Minimum: -300 deg C

ERECTION

415 PRE-ERECTION CHECKS FOR G10/ 150 STEEL FRAMING

1. At least 7 days before proposed erection start date, check the following:
 - Floor slabs and other structures to which framing system will be attached: Accuracy of setting out and provision of complete, uniform, level and securely fixed bearing supports to bottom channel runners
 - Supports: Provision of supports to receive framing system components running perpendicular to or running parallel with, but offset from main structural supports
2. Inaccuracies and defects: Report without delay.
3. Permission to commence erection: Obtain.

420 SETTING OUT

1. Permissible deviations: In addition to the requirements of the NSSS, add permissible deviations for different types of dimension and locations, as necessary.

450 FIXING G10/ 150 STEEL FRAMING

1. Erection: Components, accessories and methods as recommended by system manufacturer. Temporarily brace as necessary until completion of erection
2. Accuracy of erection:
 - Prefabricated panels: Square, with components attached in a manner as to prevent racking and minimise distortion while lifting
 - Components: Cut squarely for attachment to perpendicular members, or as required to suit angular fit against abutting members
 - Bottom/ head channels and perimeter studs:
 - Set out to provide accurately aligned framework with a true vertical plane
 - Fix securely to supporting structure at all perimeters with abutting lengths of channel runners securely anchored to a common structural element and spliced
 - Studs: Plumb, aligned, securely attached to flanges of bottom/ head channels and located at equal centres to suit performance requirements and K10/ 160 and K11/ 486 linings, maintaining sequence across openings
 - Additional studs, header and lintels: Provide at openings and junctions as necessary to ensure support to all vertical edges of boards and at jambs and masonry cladding movement joints to provide support for wall ties. Do not splice studs
3. Insulation: Install equal to that specified elsewhere in all boxed sections inaccessible after erection
4. Bracing and strapping: Provide as necessary to resist bending and rotation about minor axis
5. Component fastenings:
 - Screws: Self-drilling, self-tapping
 - Components: Do not distort
 - Wire tying of components: Not permitted

- Screw fixings: Drawn perpendicular to surfaces to be fixed. Skew fixings not permitted
- 6. Support framing for fixtures, fittings and services: Accurately positioned and securely fixed. After fixing of linings, mark positions of framing for following trades
- 7. Floor/ ceiling joists: Locate directly over loadbearing studs or overload distribution members
- 8. Web stiffeners: Provide at reaction points and/or point of concentrated loads

TESTING - NOT USED

PROTECTIVE COATINGS - NOT USED

PROTECTIVE COATING SYSTEMS - NOT USED

PREPARATION FOR PAINTING - NOT USED

PAINTING - NOT USED

Ω End of Section

G20 CARPENTRY/TIMBER FRAMING/FIRST FIXING

CLAUSES

2 TO BE READ WITH PRELIMINARIES/ GENERAL CONDITIONS.

GENERAL

105 TIMBER PROCUREMENT

1. 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).
2. 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.

PRODUCTS

270 UNGRADED SOFTWOOD

1. Description: For internal use
2. Quality of timber: Free from decay, insect attack (except pinhole borers) and with no knots wider than half the width of the section
3. Surface finish: Regularised
4. Treatment
 - Preservative treatment: Organic solvent impregnation as Z12/ 160A and Wood Protection Association Commodity Specification C8
 - Design service life: 40 years
 - Fire retardant treatment: None required

311 NON-STRUCTURAL PLYWOOD

1. Description:
2. Standard: To an approved national standard.
3. Thickness: As shown on drawings
4. Appearance class to BS EN 635:
 - E for natural surfaces intended to remain visible
 - I for surfaces which will remain visible
 - II for surfaces which will be directly overlaid or painted
 - III for surfaces which will be unseen, painted or coated
 - IV for surfaces for which appearance is not the prime consideration
5. Use class to BS EN 335:
 - Class 1 for use in dry conditions
 - Class 2 where there is a risk of wetting or humid conditions
 - Class 3 where moisture content may be above 20%
 - Sub-class 3.1 where plywood will not remain wet for long periods

- Sub-class 3.2 where plywood will remain wet for long periods
 - Class 4 where moisture content is permanently over 20%
 - Class 5 for use in salt waters where moisture content is permanently over 20%
6. Bonding quality to BS EN 314-2:
 - Class 1 generally for internal applications
 - Class 2 for high humidity internal applications and protected external applications
 - Class 3 for exposed external applications
 7. Finish: Unsanded where concealed, sanded where visible
 8. Edges: As shown on drawings
 9. Treatment
 - Preservative treatment: Organic solvent impregnation to NBS section Z12 and Wood Protection Association Commodity Specification C11
 - Design service life: 40 years
 - Fire retardant treatment: None required

WORKMANSHIP GENERALLY

402 CROSS-SECTION DIMENSIONS OF NON-STRUCTURAL SOFTWOOD

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

420 WARPING OF TIMBER

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

430 SELECTION AND USE OF TIMBER

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

435 NOTCHES, HOLES AND JOINTS IN TIMBER

1. Notches and holes
 - General: Avoid if possible
 - Sizes: Minimum needed to accommodate services
 - Position: Do not locate near knots or other defects
 - In same joist: Minimum 100 mm apart horizontally
 - Notches in joists
 - Position: Locate at top. Form by sawing down to a drilled hole
 - Depth (maximum): 0.15 x joist depth
 - Distance from supports: Between 0.1 and 0.2 x span
 - Holes in joists
 - Position: 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
2. Scarf joints, finger joints and splice plates: Do not use without approval

440 PROCESSING TREATED TIMBER

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

450 MOISTURE CONTENT

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

451 MOISTURE CONTENT TESTING

1. Procedure: When instructed, test timber sections with an approved electrical moisture meter
2. Test sample: Test 5% but not less than 10 lengths of each cross-section in the centre of the length
3. Test results: 90% of values obtained to be within the specified range. Provide records of all tests

510A PROTECTION

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

JOINTING TIMBER

570 JOINTING/ FIXING GENERALLY

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

670 ANTI-CORROSION FINISHES FOR FASTENERS

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

ERECTION AND INSTALLATION

750 MODIFICATIONS/ REPAIRS

1. Defects due to detailing or fabrication errors: Report without delay
2. Methods of rectification: Obtain approval of proposals before starting modification or remedial work
3. Defective/damaged components: Timber members/ components may be rejected if the nature and/or number of defects would result in an excessive amount of site repair

770 ADDITIONAL SUPPORTS

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

Ω End of Section

G30 METAL PROFILED SHEET DECKING

CLAUSES

2 TO BE READ WITH PRELIMINARIES/ GENERAL CONDITIONS.

PROPRIETARY SPECIFIED ROOF/ FLOOR DECKING - NOT USED

PERFORMANCE SPECIFIED ROOF/ FLOOR DECKING - NOT USED

FIXING DECKING

220 PAINTING STRUCTURE

1. Sequence: Before the decking is attached paint surfaces of supporting structure that will be subsequently inaccessible

230 PREVENTION OF ELECTROLYTIC ACTION

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

240A FIRE RESISTING PROFILE FILLERS

1. Supplier and length: As clause P10/ 433
2. Type/ shape: To match decking profile void
3. Location: Parallel and continuous to supports
4. Fixing: Fit securely, as recommended by manufacturer, to form fire compartment

260 FIXING DECKING GENERALLY

1. Cut sheets: Clean edges with true lines and no burrs
 - Treatment of edges: As recommended by manufacturer
2. Penetrations: Cut openings to the minimum size necessary
 - Edge reinforcement: Angles .
3. Fixings: Drill all holes
4. Cleanliness: Remove debris from within decking construction
5. Installation: Seams and ribs of deck must be parallel, with no damage to deck coating

Ω End of Section

H11

CURTAIN WALLING

CLAUSES

2 TO BE READ WITH PRELIMINARIES/ GENERAL CONDITIONS.

TENDERING

10 INFORMATION TO BE PROVIDED WITH TENDER

1. Submit the following curtain walling particulars
 - Evidence of compliance: All curtain walling to be CE marked to BS EN 13830:2003. Submit Declaration of Performance (DoP). CE marking and Declaration of Performance (DoP) requirements for structural sealant glazing to be submitted on the basis of a manufacturer's European Technical assessment (ETA) prepared in accordance with EOTA technical guide ETAG 002 (Parts 1, 2 and 3)
 - Typical plan, section and elevation drawings at suitable scales.
 - Typical detailed drawings at large scales, including interfaces between all the different system components.
 - Technical information and certification demonstrating compliance with specification of proposed incorporated products and finishes, including insulating glass units.
 - Certification, reports and calculations demonstrating compliance with specification of proposed curtain walling.
 - Proposals for connections to and support from the building structure and building components.
 - Proposals for amendments to primary supporting structure and for secondary supporting structure additional to that shown on preliminary design drawings.
 - Schedule of builder's work, special provisions and special attendance by others.
 - Examples of standard documentation from which project quality plan will be prepared.
 - Preliminary fabrication and installation method statements and programme.
 - Schedule of products and finishes with a design life expectancy less than that specified in clause 440, with proposals for frequencies and methods of replacement.
 - Proposals for replacing damaged or failed products.
 - Areas of non-compliance with the specification.

TYPES OF CURTAIN WALLING

110A CURTAIN WALLING

1. Description: Generally
2. Supporting structure: In situ concrete floor slab, structural steelwork at head
3. Curtain walling system:
 - Manufacturer: Technal, Albert Drive, Silkwood Park, Wakefield, WF5 9TG
 - Product reference: Technal MX Visible Grid thermally insulated curtain walling system
 - Type: Single box system
4. Internal framing member:
 - Material: Aluminium as clause 710
 - Finish: Polyester powder coated as section Z31
 - Colour/ texture: To Architect's requirements from manufacturer's full range
 - Minimum film thickness: 40 microns
5. External cover cap:

- Material: Aluminium as clause 710
- Finish: Polyester powder coated as section Z31
 - Colour/ texture: To CA's requirements from manufacturer's full range
 - Minimum film thickness: 40 microns
- 6. Glazing: Insulating glass units to BS EN 1279, hermetically sealed and Kitemark certified, as section L40, clause 650A
- 7. Glazing system: Pressure plates and gaskets with tamper proof screw fixings
- 8. Spandrel panel type:
 - Manufacturer: Saint Gobain Glass UK, Weeland Road, Eggborough, East Riding of Yorkshire, DN14 0FD
 - Product reference: 28mm opaque look-alike insulating spandrel glass units as L40/ 650A
 - External material: 6mm Emalit Evolution opaque toughened coloured enamelled glass
 - Internal material: Aluminium tray bonded to rear of glass
 - Internal finish: Self finish
 - Core insulation: 70 mm thick Rockwool Lamella mineral fibre insulation
- 9. Accessories: Perimeter flashings
- 10. Incorporated components:
 - Concealed top hung vents (structurally bonded) in locations shown on drawing(s)
 - Single action glazed aluminium door as section L20/ 481
- 11. Other requirements:
 - Performance criteria to comply with Design/Performance Requirements and Testing subsections but dimensions of mullions and transoms shown on detail drawings to take precedence where these exceed those of components determined in compliance with clause 311
 - Visible glass edges to concealed opening vents to be arrised
 - Curtain walling to achieve RC2 when tested to BS EN 1627:2011 (NB incorporating toughened outer pane and laminated inner pane with secure retention glass specification to achieve Category P1A of BS EN 356:2000)
 - Curtain walling to be installed with Tremco Illbruck Limited, Coupland Road, Hindley Green, Wigan, WN2 4HT ref. ME501 Duo Window Membrane HD external weathertight sealing membrane to all perimeter joints with structure and ME500 Duo Flexible Window Membrane internal airseal where noted on drawings

GENERAL REQUIREMENTS/ PREPARATORY WORK

205 APPROVED FIRMS

1. Fabrication and installation of curtain walling: To be carried out by one of the following firms approved by curtain walling manufacturer;:
 - Bretton Architectural Limited, Broughton Mills Road, Bretton, Chester, CH4 0DH
 - Dorteck Architectural Systems Limited, Unit 3, Fieldhouse Business Park, Fieldhouse Lane, Huddersfield, HD2 1FA
 - LDG Contracts, Hammond Street, Preston, PR1 7NU
 - Quest Solutions (UK) Limited, Euroway Trading Estate, Unit 1 Wharfedale Road, Bradford, BD4 6QB

210 DESIGN

1. Curtain walling and associated features: Complete the detailed design. Submit before commencement of fabrication
2. Related works: Coordinate in the detailed design

220 SPECIFICATION

1. Compliance standards: BS EN 13830:2003 and The Centre for Window and Cladding Technology (CWCT) 'Standard for systemised building envelopes'
2. Reference information: For the duration of the contract, keep available at the design office, workshop and on site copies of:
 - The CWCT 'Standard for systemised building envelopes'.
 - Publications invoked by the CWCT 'Standard for systemised building envelopes'.

230 INFORMATION TO BE PROVIDED DURING DETAILED DESIGN STAGE

1. Submit the following curtain walling particulars
 - A schedule of detailed drawings and dates for submission for comment.
 - A schedule of loads that will be transmitted from the curtain walling to the structure.
 - Proposed fixing anchor details relevant to structural design and construction.
 - A detailed testing programme in compliance with the main contract master programme.
 - A detailed fabrication and installation programme in compliance with the main contract master programme.
 - Proposals to support outstanding applications for Building Regulation consents or relaxations.

235 INFORMATION TO BE PROVIDED BEFORE COMMENCEMENT TESTING OR FABRICATION OF CURTAIN WALLING

1. Submit the following curtain walling particulars
 - Detailed drawings to fully describe fabrication and installation.
 - Detailed calculations to prove compliance with design/ performance requirements.
 - Project specific fabrication, handling and installation method statements.
 - Certification for incorporated components manufactured by others confirming their suitability for proposed locations in the curtain walling.
 - Recommendations for spare parts for future repairs or replacements.
 - Recommendations for safe dismantling and recycling or disposal of products.
2. Certification for incorporated components manufactured by others confirming their suitability for proposed locations in the curtain walling.
 - Recommendations for spare parts for future repairs or replacements.
3. Recommendations for safe dismantling and recycling or disposal of products.

270 FABRICATION SAMPLES

1. General: During detailed design, submit samples of: 600 x 600 mm mullion and transome intersection with fitted glazing units .
 - Obtain approval of appearance before proceeding.

DESIGN/ PERFORMANCE REQUIREMENTS

305 CWCT 'STANDARD FOR SYSTEMISED BUILDING ENVELOPES'

1. General: Unless specified or agreed otherwise comply with:
2. Part 2 - Loads, fixings and movement.
3. Part 3 - Air, water and wind resistance.
4. Part 4 - Operable components, additional elements and means of access.
5. Part 5 - Thermal, moisture and acoustic performance.
6. Part 6 - Fire performance

7. Part 7 - Robustness, durability, tolerances and workmanship.
8. Project performance requirements specified in this subsection: Read in conjunction with CWCT performance criteria

312 INTEGRITY

1. Requirement: The curtain walling must resist wind loads, dead loads and design live loads, and accommodate deflections and movements without damage
2. Design wind pressure: Maximum calculated wind pressure in accordance with BS EN 1991-1-4 but not less than 800 Pa

320 DEFLECTION UNDER DEAD LOADS

1. Requirement: Framing members parallel to the curtain walling plane must not:
 - Reduce glass bite to less than 75% of design dimension.
 - Reduce edge clearance to less than 3 mm between members and immediately adjacent glazing units, panel/ facing units or other fixed units.
 - Reduce clearance to less than 2 mm between members and movable components such as doors and windows.

325 DEFLECTION UNDER WIND LOAD

1. Requirement: To CWCT 'Standard for systemised building envelopes' clause 3.5 2 and the following additional requirements: Normal to plane deflection not to exceed 10 mm for framing members between 2500 mm and 3000 mm long.
2. Additional stiffness to CWCT 'Standard for systemised building envelopes' clause 3.5 4.2: Not allowed

333 APPEARANCE AND FIT

1. Requirement: Design curtain walling system:
 - To ensure position and alignment of all parts and features as shown on preliminary design drawings.
 - To accommodate deviations in the primary support structure.
2. Primary support structure: Before commencing installation of curtain walling system, carry out survey sufficient to verify that required accuracy of erection can be achieved
 - Give notice: If the structure will not allow the required accuracy or security of erection

340 AIR PERMEABILITY

1. Requirement: Permissible air leakage rates of 1.5m³/hr/m² for fixed lights and 2.0 m³/hr/lin.m for opening lights must not be exceeded when the curtain walling is subjected to the peak test pressure
2. Permeability class to BS EN 12152: A4
 - Peak test pressure: 600 Pa

350 WATER PENETRATION

1. Watertightness class to BS EN 12154: R7
 - Peak test pressure: 600 Pa
2. Additional requirements: Underside of any transome not to be wetted at peak test pressure

385 THERMAL STRESS IN GLAZING

1. Glass panes/ units: Must have adequate resistance to thermal stress generated by orientation, shading, solar control and construction

430 FIRE STOPPING

1. Locations: At junctions of curtain walling with compartment or separating walls and floors

2. Materials and methods of fixing: To ensure fire resistance not less than that specified for compartment or separating walls and floors when tested from both sides

450 SAFETY

1. Finished surfaces of curtain walling: Accessible internal and external areas must not:
 - Have irregularities capable of inflicting personal injury.
 - Release irritant or staining substances.

BREEAM PERFORMANCE REQUIREMENTS - NOT USED

TESTING

510 COMPARISON (TYPE) TESTING

1. Requirement: To CWCT 'Standard for systemised building envelopes', Part 8
2. Test results and reports: Before commencement of curtain walling fabrication and installation, submit proof of compliance with this specification

PRODUCTS

710 ALUMINIUM ALLOY FRAMING SECTIONS

1. Standard: To relevant parts of BS EN 515, BS EN 573, BS EN 755 and BS EN 12020
2. Alloy, temper and thickness: Suitable for the application and specified finish
3. Structural members: To BS EN 1999-1-1

730 MECHANICAL FIXINGS

1. Stainless steel: To BS EN ISO 3506, grade A2 generally, grade A4 when used in severely corrosive environments
2. Carbon steel: To BS 4190 and suitable for galvanizing or other protective coating
3. Aluminium brackets, rivets and shear pins: To relevant parts of BS EN 755

732 ADHESIVES

1. General: Not degradable by moisture or water vapour, or exposure to UV light

735 FIXING ANCHORS

1. Type and use: Reviewed and approved by fixing manufacturers. Submit confirmatory information on request
2. Dimensions: Not less than recommended by their manufacturers
3. Adjustment capability: Sufficient in three dimensions to accommodate building structure and curtain walling fabrication/ installation tolerances

737 GLASS GENERALLY

1. Standards: To BS 952 and relevant parts of:
 - BS EN 572 for basic soda lime silicate glass.
 - BS EN 1096 for coated glass.
 - BS EN 1748 for borosilicate glass.
 - BS EN 1863-1 for heat strengthened soda lime silicate glass.
 - BS EN 12150 for thermally toughened soda lime silicate glass.
 - BS EN 13024 for thermally toughened borosilicate glass.
 - BS EN ISO 12543 for laminated glass.
2. Selection of glass type and thickness in accordance with recommendations of CIRIA publication 'Glazing at height'.

3. Glass quality: Clean and free from obvious scratches, bubbles, cracks, ripples, dimples and other defects
4. Glass edges: Generally undamaged. Shells and chips not more than 2 mm deep and extending not more than 5 mm across the surface are acceptable if ground out

739 DIMENSIONAL TOLERANCES ON GLASS

1. Measurement of tolerances: Before any thermal toughening/ heat strengthening
2. Pane dimensions less than 1500 mm
 - For 3 to 6 mm thick glass: ± 1.0 mm
 - For 8 to 12 mm thick glass: ± 1.5 mm
 - For 15 mm thick glass: ± 2.0 mm
 - For 19 mm and 25 mm thick glass: ± 2.5 mm
3. Pane dimensions more than 1500 mm
 - For 3 to 6 mm thick glass: ± 1.5 mm
 - For 8 to 12 mm thick glass: ± 2.0 mm
 - For 15 mm thick glass: ± 2.5 mm
 - For 19 mm and 25 mm thick glass: ± 3.0 mm
4. Pane squareness: Not more than 4 mm difference in diagonal measurements

742 HEAT-SOAKED THERMALLY TOUGHENED GLASS

1. Standard: To BS EN 14179
 - Holding period: 2 hours
2. Locations of heat soaked glass: All locations

745A INSULATING GLASS UNITS

1. Insulating glass units to BS EN 1279, hermetically sealed and Kitemark certified as section L40, clause 650A.

760 GASKETS

1. Material
 - Noncellular rubber to BS 4255-1.
 - Cellular rubber to ASTM-C509-06.
2. Continuity: Outer gaskets of single front sealed curtain walling systems and inner gaskets of drained and ventilated or pressure equalized curtain walling systems must be formed in a complete frame with sealed joints. Vulcanized rubber gaskets must have factory moulded corner joints
3. Durability: Resistant to oxidation, ozone and UV degradation

765 WEATHERSTRIPPING OF OPENING UNITS

1. Material
 - Noncellular rubber to BS 4255-1.
 - Cellular rubber to ASTM-C509-06.
 - Polypropylene woven pile, silicone treated.
2. Attachment: Fixed in undercut grooves in framing sections using preformed corners, with any joints in the length

770 GENERAL SEALANTS

1. Selection: In accordance with BS 6213 from:
 - Silicone.

- One part polysulfide.
 - Two part polysulfide.
 - One or two part polyurethane.
2. Classification and requirements: To BS EN ISO 11600
 3. Reaction to contact products and finishes: Stable and compatible

772 CURTAIN WALLING JOINT ASSEMBLY SEALANTS

1. Material: One part, low modulus silicone to BS EN ISO 11600, type F or G. Neutral curing where in contact with or close proximity to other products that may be adversely affected by acetoxy curing
2. Manufacturer: Contractor's choice
 - Product reference: Contractor's choice

FINISHES

810 PROTECTIVE COATING OF CARBON STEEL FRAMING SECTIONS/ REINFORCEMENT

1. Treatment: One of the following to all surfaces:
 - Hot dip galvanized to BS EN ISO 1461.
 - An appropriate equivalent coating to BS EN ISO 12944-5 or BS EN ISO 14713-1, -2 and -3.

820 PROTECTIVE COATING OF CARBON STEEL MECHANICAL FIXINGS

1. Treatment: One of the following to all surfaces:
 - Hot dip galvanized to BS EN ISO 1461.
 - Sherardized to BS 7371-8, Class 30 coating thickness and passivated.
 - Zinc plated to BS EN ISO 2081, coating designation Fe//Zn//C for an iridescent (yellow passivate) chromate conversion coating or Fe//Zn//D for an opaque (olive green) chromate conversion coating.

830 POWDER-COATING

1. Requirement: As section Z31

FABRICATION AND INSTALLATION

910 GENERALLY

1. Electrolytic corrosion: Prevent. Submit proposed methods
2. Fixings: Concealed unless indicated on detailed drawings. Where exposed they must match material and finish of the products fixed
3. Fabrication: Machine cut and drill products in the workshop wherever possible
4. Identification of products: Mark or tag to facilitate identification during assembly, handling, storage and installation. Do not mark surfaces visible in the completed installation

912 METALWORK

1. Requirement: As section Z11, unless specified otherwise in this section

915 GLAZING

1. Requirement: As section L40, unless specified otherwise in this section
2. Directional patterned/ wired glass: Generally fix parallel to surround and align adjacent panes where seen together at close quarters

917 FIXINGS/ ADHESIVES APPLICATION

1. Requirement: As section Z20, unless specified otherwise in this section

920 SEALANT APPLICATION

1. Requirement: As section Z22, unless specified otherwise in this section

930 ASSEMBLY

1. General: Carry out as much assembly as possible in the workshop
2. Joints (other than movement joints): Rigidly secured, reinforced where necessary and fixed with hairline abutments
3. Displacement of components in assembled units: Submit proposals for reassembly on site

955 FIXING ANCHOR INSTALLATION

1. Site drilling or cutting into structure: Submit proposals for positions other than shown on detailed drawings
2. Concrete supporting structure
 - Cast-in inserts: Provide detailed locational information. Protect cavities in inserts from entry of concrete
 - Edge fixing distances: Not less than recommended by fixing anchor manufacturers
3. Corrective fabrication: Minimize. Where necessary, submit proposals

970 CURTAIN WALLING INSTALLATION

1. Securing to fixing anchors: Through holes formed during fabrication only
2. Tightening mechanical fasteners: To manufacturer's recommended torque figures. Do not overtighten fasteners intended to permit differential movement
3. Protective coverings: Remove only where necessary to facilitate installation and from surfaces that will be inaccessible on completion

975 WELDING

1. In situ welding: Not permitted

978 INSTALLING FIRE AND SMOKE STOPS

1. Fire and smoke stops: To be located at all junctions between the curtain wall and compartment or separating walls and floors. To be installed strictly in accordance with manufacturers' guidelines and as recommended in CWCT Technical Note TN 98
2. Installer qualification: To be a member of a UKAS accredited installer scheme

980 INTERFACES

1. Flashings, closers, etc: Locate and form correctly to provide weathertight junctions with the curtain walling

982 IRONMONGERY

1. Assembly and fixing: Accurately, using fasteners with matching finish supplied by ironmongery manufacturer
2. Completion: Check, adjust and lubricate as necessary to ensure correct functioning

985 MAINTENANCE

1. Maintenance manual: Incorporate details within the Building Manual in accordance with CWCT 'Standard for systemised building envelopes' clause 7.6.1
 - Materials certification and test reports to be included:
 - Contact details for sub-contractor(s) and supplier(s)

- Product information for components and materials including manufacturers' literature, COSHH data sheets and recommendations for cleaning, maintenance and repair
- Copies of materials, components and finishes certification
- Construction drawings, updated to include any changes made up to completion
- Terms and conditions of guarantee(s)
- Method statement for means of access for maintenance and use of any permanent equipment
- Method statement covering procedures for replacement of parts with a design life less than that of the curtain walling system
- Recommendations for routine maintenance and cleaning, including suitable cleaning agents and lubrication/ adjustments to working parts
- Record book for listing defects, maintenance and repairs

Ω End of Section

H31 METAL PROFILED/ FLAT SHEET CLADDING/ COVERING

CLAUSES

2 TO BE READ WITH PRELIMINARIES/ GENERAL CONDITIONS.

TYPES OF CLADDING/ COVERING SYSTEM

120A METAL

1. Description: Cladding
2. Support structure: K11/ 425 plywood on vertical and horizontal carrier rails
 - Manufacturer: Nvelope Rainscreen Systems Ltd, Unit A City Park, Welwyn Garden City, Herts, AL7 1LT
 - Product Reference: NV1
 - Fasteners: Number, location and fixing to masonry backing wall to structural engineer's specification
3. External sheets: Aluminium to BS EN 508-2
 - Manufacturer: Euroclad Group Ltd, Wentloog Corporate Park, Wentloog Road, Cardiff, CF3 2ER
 - Product reference: Vieo 25_454 Profile fixed vertically
 - Material: Aluminium 3105 to BS EN 485-2 and BS EN 1396: 2015
 - Thickness (nominal): 0.9 mm
 - Finish side 1 (outer): PVF2
 - Colour: To Architect's requirements from manufacturer's full colour range
 - Finish side 2 (inner): Not applicable
 - Colour: Not applicable
 - Additional requirements: None
4. Accessories:
 - Aluminium Vieo Closures (multiple use closure as per drawings)
 - Coloured Vieo Closure Covers (to match sheet finish if required)
 - Profile Fillers to suit Vieo profile
5. Primary cladding/ covering sheet fasteners: Sheet overlap mechanically seamed over head of Clip using Euroclad Vieo seaming tool
6. Sealing laps
 - End laps: Not applicable
 - Side laps: Not applicable
7. Spacers:
 - Manufacturer: Euroclad Group Ltd, Wentloog Corporate Park, Wentloog Road, Cardiff, CF3 2ER
 - Standing Seam Clips: Vieo-SC-Sliding Seam Clip, stainless steel
 - Rocbar: Not applicable
 - Fixing: Fit Vieo Sliding Seam Clips over breather membrane on to plywood at 454 mm centres
 - Tophat: Not applicable
 - Fasteners:
 - Vieo 25mm Clip to plywood: Stainless steel self drilling screws to manufacturer's recommendations

- Closures: Stainless steel screws
- 8. Breather membrane: As clause 281
- 9. Thermal insulation: Not required
- 10. Vapour control layer: Not required
- 11. Profile fillers: As clause 300
- 12. Flashings: As clauses 480A & 482A
- 13. Additional requirements:
 - Install system as detailed in this Specification and manufacturer's documentation
 - Flashings, fabricated details and trims to be supplied by system manufacturer
 - Penetrations (eg flues, vents and access hatches) to be weatherproofed using Roll-A-Flex supplied and installed by M.R. Site Services

GENERAL REQUIREMENTS

167A COMPLETION OF DESIGN

1. Description:
2. Description: Detailed design
3. Requirement: Complete the detailed design to satisfy specified performance criteria and coordinate with the detailed design of related and adjacent work
4. Structural requirements: As Structural Engineer's requirements
5. Additional requirements: Responsibility for coordination at design interfaces
6. Design and production information: Preparation of detail drawings
7. Timing of submissions: Within two weeks of request but not less than 8 weeks before programmed commencement of work on site

172 THERMAL PERFORMANCE/ BRIDGING

1. Requirement: Complete the thermal design of the cladding/ covering system to avoid excessive thermal bridging
 - Standard: MCRMA Technical Paper 14, MCRMA Technical Paper 17 with MCRMA Technical Bulletin 14 and BRE Information Paper 1/06

175 PRODUCT SAMPLES

1. General: Before commencing detailed design, submit labelled samples of the following: External sheet in specified finish/ colour

176 FASTENER SAMPLES

1. General: During detailed design, submit labelled samples of each type of fastener

DESIGN/ PERFORMANCE REQUIREMENTS

185 PERFORMANCE COMPLIANCE

1. Verification: Before commencing fabrication, submit evidence based on laboratory testing or computer modelling
 - Verifying authority: Euroclad Group Ltd, Wentloog Corporate Park, Wentloog Road, Cardiff, CF3 2ER

196 INTEGRITY OF METAL CLADDING/ COVERING

1. Requirement: Design sheet , coverings/ flashings and methods of attachment to prevent loss of weathertightness and permanent deformation due to wind pressure or suction
2. Wind loads: Calculate wind loads to BS 6399-2

3. Standard fixing arrangement load capacities: Positive load: limited by supporting structure performance (sheet must be fully supported)
4. Single Seam Negative/suction load:
 - Clips at 1260 mm centres: 0.8kN/m²
 - Clips at 660 mm centres: 1.2kN/m²
 - Suction loads 1.2-3 kN/m², reduce centres to 300 mm
5. Double Seam Negative/suction load:
 - Clips at 1260 mm centres: 0.8kN/m²
 - Clips at 660 mm centres: 1.2kN/m²
 - Suction loads 1.2-3 kN/m², reduce centres to 300 mm

198 WATER PENETRATION

1. Requirement: Under site exposure conditions, moisture must not penetrate onto internal surfaces, or into cavities not designed to be wetted

202 AVOIDANCE OF SURFACE CONDENSATION

1. Requirement: Determine surface condensation risk of cladding/ covering system using the method described in BS EN ISO 13788. If necessary, revise thermal insulation to provide satisfactory temperature factor (f_{min}). Ensure that damage and nuisance from surface condensation does not occur

FIXING CLADDING/ ROOF COVERING

219 FASTENERS

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

221 FITTINGS AND ACCESSORIES

1. Unspecified fittings and accessories: Recommended for the purpose by the cladding/ covering manufacturer

281 BREATHER MEMBRANE

1. Manufacturer: DuPont (UK) Ltd, Bristol and Bath Science Park, Dirac Crescent, Emersons Green, Bristol, BS16 7FR
 - Product reference: Tyvek FireCurb Housewrap non-woven high density polyethylene breather membrane
2. Installation requirements:
 - Setting out: Joints minimized. Membrane to form a continuous barrier to prevent water, snow and wind blown dust reaching the substrate
 - Method of fixing: Galvanized, sherardized or stainless steel large head nails or austenitic stainless steel staples
 - Joints: Lapped 100 mm minimum horizontally and 150 mm minimum vertically and sealed using tape recommended by breather membrane manufacturer
 - Openings: Membrane fixed to reveals.
 - Bottom edges: Membrane lapped over flashings, sills, etc. to allow free drainage to the exterior
3. Penetrations: Sealed

300 PROFILE FILLERS GENERALLY

1. Material: MP

2. Manufacturer: Euroclad Group Ltd, Wentloog Corporate Park, Wentloog Road, Cardiff, CF3 2ER
 - Product references: Vieo Ridge Filler
3. Colour: Black
4. Thickness: 25 mm
5. Fixing method: Secure by Ridge Zed Section
 - Requirement: To close cavities/ regulate air paths within the external envelope. Tight fit with no unintended gaps

411 FIXING SHEETS GENERALLY

1. Fasteners torque: Set to cladding panel manufacturer's recommendations. Do not overdrive
2. Debris: Remove dust and other foreign matter before finally fixing sheets
3. Fixing: To provide a secure, free draining and weathertight installation
4. Operatives: Trained in the application of H31/ 120A metal cladding
5. Folding (where required): With mechanical or manual presses to give straight, regular and tight bends, leaving panels free from ripples, kinks, buckling and cracks
6. Details: Pressed prior to delivery
7. Sealants: Do not use in joints to achieve waterproofing
8. Cut edges: Clean true lines with no burrs
9. Penetrations: Openings to minimum size necessary
 - Edge reinforcement: Angles
10. Completion: Check fixings to ensure watertightness and that sheets are secure
11. Cut edges: Paint to match face finish
12. Finished cladding: Fully supported, adequately fixed to resist wind uplift and able to accommodate thermal movement without
13. distortion or stress.
14. Protection: Prevent staining, discolouration and damage by subsequent works

460 ACCOMMODATION OF THERMAL MOVEMENT

1. Sheet type/ location: H31/ 120A metal wall cladding
2. Method: Sliding Clips and fixed points

470 STRUCTURAL MOVEMENT JOINTS

1. Type: Cover flashing fixed on one side over gap between sheets
2. Location: Coincident with structural movement joint
3. Width of gap: To match structural movement joint requirements
4. Requirement: Weathertight

480A FLASHINGS/ TRIMS GENERALLY

1. Lap joint treatment
 - Vertical and sloping flashings/ trims: End laps to be same as for adjacent sheeting
 - Horizontal flashings/ trims: End laps to be 150 mm, sealed and where possible arranged with laps away from prevailing wind
2. Method of fixing: To structure in conjunction with adjacent sheeting. Otherwise to sheeting

482A BUTT JOINTED FLASHINGS/ TRIMS

1. Generally: As MCRMA Technical Paper no 11

2. Manufacturer: Euroclad Group Ltd, Wentloog Corporate Park, Wentloog Road, Cardiff, CF3 2ER
3. Material: Aluminium
 - Thickness: : Generally: 0.9mm to match wall finish for appropriate details only (eg ridge cappings and small scale flashings)
 - Typically 2 or 3 mm for large face, aesthetically sensitive details, verge flashings, fascias etc
 - Finish: Polyester powder coated as Section Z31
4. Butt straps: 300 mm wide and made from sheet of same material and finish
5. Butt joints: Seal

540 ABUTMENTS

1. Junctions with flashings: Weathertight and neatly dressed down

Ω End of Section

H71 LEAD SHEET COVERINGS/ FLASHINGS

CLAUSES

2 TO BE READ WITH PRELIMINARIES/ GENERAL CONDITIONS.

TYPES OF LEADWORK

420 COVER FLASHINGS

1. Description:
2. Lead
 - Thickness: 1.75-2.00 mm (code 4)
3. Dimensions
 - Lengths: Not more than 1500 mm.
 - End to end joints: Laps of not less than 100 mm
 - Cover: Overlap to upstand of not less than 75 mm
4. Fixing: Lead wedges into bed joint, clips to lead upstand at laps and 500 mm centres

GENERAL REQUIREMENTS/ PREPARATORY WORK

510 WORKMANSHIP GENERALLY

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

520 LEAD SHEET

1. Production method
 - Rolled, to BS EN 12588, or
 - Machine cast and BBA certified, or
 - Sand cast, from lead free from bitumen, solder, other impurities, inclusions, laminations, cracks, air, pinholes and blowholes; to code thicknesses but with a tolerance (by weight) of $\pm 10\%$.
2. Identification: Labelled to show thickness/ code, weight and type

FIXING LEAD

715 CLIPS

1. Manufacturer: Contractor's choice
2. Material
 - Lead clips: Cut from sheets of same thickness/ code as sheet being secured
 - Copper clips
 - Thickness: 0.70 mm
 - Temper: BS EN 1172, designation R220 in welts, seams and rolls, R240 elsewhere; dipped in solder if exposed to view
 - Stainless steel clips
 - Thickness: 0.46 mm
 - Grade: BS EN 10088, 1.4301(304)terne coated if exposed to view
3. Dimensions
 - Width: 50 mm where not continuous
 - Length: To suit detail
4. Fixing clips: Secure each to substrate with either two screw or three nail fixings not more than 50 mm from edge of lead sheet. Use additional fixings where lead downstands exceed 75 mm
5. Fixing lead sheet: Welt clips around edges and turn over 25 mm

770 WEDGE FIXING INTO JOINTS/ CHASES

1. Joint/ chase: Rake out to a depth of not less than 25 mm
2. Lead: Dress into joint/chase
 - Fixing: Lead wedges at not more than 450 mm centres, at every change of direction and with at least two for each piece of lead
3. Sealant:
 - Manufacturer: Cavity Trays Ltd, Yeovil, Somerset, BA21 5HU
 - Product reference: Siliconbond caulking compound
 - Application: As section Z22

780 WEDGE FIXING INTO DAMP-PROOF COURSE JOINTS

1. Joint: Rake/ cut out under damp proof course to a depth of not less than 25 mm
2. Lead: Dress lead into joint
 - Fixing: Lead wedges at not more than 450 mm centres, at every change of direction and with at least two for each piece of lead
3. Sealant:
 - Manufacturer: Cavity Trays Ltd, Yeovil, Somerset, BA21 5HU
 - Product reference:: Siliconbond caulking compound
 - Application: As section Z22

JOINTING LEAD - NOT USED

Ω End of Section

J30 LIQUID APPLIED TANKING/DAMP PROOFING

CLAUSES

2 TO BE READ WITH PRELIMINARIES/GENERAL CONDITIONS

TYPES OF TANKING/ DAMP PROOFING

135 COLD APPLIED RESIDUAL MOISTURE SUPPRESSANT & SURFACE DAMP PROOFING

1. Description:
2. Substrate: In situ concrete slab
3. Primer: Not required
4. Coating: Solvent free two part epoxy resin
 - Manufacturer: F Ball & Co Ltd, Churnetside Business Park, Station Rd, Cheddleton, Leek, Staffordshire, ST13 7RS
 - Product reference: Stopgap F77 high performance one coat waterproof surface coating
 - Application: One coat to achieve a minimum thickness of 350 microns
5. Reinforcement: Not required
6. Blinding: 3 mm thick F Ball & Co Ltd, Stopgap 1200 Pro floor smoothing underlayment applied within 24 hrs of coating curing. If this time is exceeded, prime cured coating with F Ball & Co Ltd P141 acrylic primer and allow to dry before applying smoothing underlayment

EXECUTION

205 SUITABILITY OF SUBSTRATE

1. Substrates generally
 - Smooth, even textured, clean, dry and frost free.
 - Within tolerances for level and surface regularity.
 - Vertical and horizontal surfaces: Correctly prepared and free from irregularities
2. Curing period for concrete substrates (minimum): 7 days
3. Moisture content and stability of substrate: Must not impair integrity of finished tanking/ damp proofing
4. Preliminary work: Complete including:
 - Chases.
 - External angles.
 - Formation of upstands and kerbs.
 - Movement joints.
 - Penetrations/ Outlets.

215 APPLICATION OF J30/ 135 COLD APPLIED RESIDUAL MOISTURE SUPPRESSANT & SURFACE DAMP PROOFING

1. Adjacent surfaces exposed to view in finished work: Protect.
2. New in situ concrete slabs:
 - Leave for minimum 7 days before surface preparation and application of coating.
 - Minimum surface strength of substrate: > 1.5N/ mm²
3. Moisture testing: Turn off drying aids for not less than 4 days, then test substrate for moisture content using an accurately calibrated hygrometer in accordance with BS 8203 and BS 5325.

Take readings in all corners, along edges and at various points over area being tested.
Record results and report to CA

4. Substrates: Power grind to ensure that substrates are firm, sound, clean, surface dry and free of dirt, laitance, grease, rust, loose material, concrete curing agents, additives or other contaminants liable to prevent penetration of coating into substrate or adhesion to surface, and to produce a slightly textured surface
5. Surface dust: Remove using an industrial vacuum cleaner
6. Coatings:
 - Application temperatures: Maintain laying area at steady 18-27°C for minimum 48 hours prior to, during and after completion, with floor temperature minimum 10°C
 - Apply in dry atmospheric conditions in accordance with manufacturer's recommendations using a 1.5 x 5 mm notched trowel. While coating material is still wet, flatten out serration ridges with a long handled roller, initially pre-wetted in coating material, to achieve a pinhole free cover of minimum nominal thickness 350 microns over entire area, ensuring that coverage is not exceeded. Allow to cure for 8-10 hours.
 - Uniform, continuous coverage. Do not allow to pool in hollows.
 - Firmly adhered to substrate and free from imperfections.
 - Prevent damage to finished coatings.
7. Penetrations: Impervious
8. Final covering: Apply as soon as possible after coating has cured

220 COLD APPLIED COATINGS

1. Thinning: Not permitted unless recommended by manufacturer
2. Successive coats
 - Allow to dry before applying next.
 - Apply at right angles to previous.

260 JUNCTIONS WITH DPCS

1. Dpcs: Clean, all edges fully exposed
2. Application: Fully coat dpc and overlap adjacent surfaces by (minimum) 50 mm.

271 UNDERLAYMENT

1. Coatings: Apply underlayment within 24 hours of application of J30/ 135 coating

COMPLETION

290 PROTECTION

1. Underlayment: Protect from damage and contamination by subsequent building operations

310 INSPECTION

1. Interim and final inspections: Submit reports

Ω End of Section

J31

LIQUID APPLIED WATERPROOF ROOF COATINGS

CLAUSES

2 TO BE READ WITH PRELIMINARIES/GENERAL CONDITIONS.

TYPES OF COATING

130 INVERTED ROOF COATING

1. Description:
2. Substrate: Concrete roof deck
 - Preparation:
 -
 -
 -
 - Ensure substrate is level and even without depressions, deflections or backfalls and with a wood float or similar finish, but not power floated, steel floated or tamped
 - Surfaces to receive roof coating: Dry, frost free, free of voids, cracks, holes or other damage, and free of all contaminants including dust, grease, dampness and laitance. Brush or blow dry all loose dirt or debris using dry air or industrial vacuum machine
 - Advance bond tests: Carry out to all areas to receive roof coating and record for reference in accordance with method statement contained within manufacturer's pre-installation control procedures document
3. Waterproof coating: Icopal Parabit Duo hot melt roof coating
 - System manufacturer: Icopal Ltd, Barton Dock Road, Stretford, Manchester, M32 0YL
 - Primer reference: Icopal Siplast Primer
 - Coating reference: Parabit Hot-Melt Compound as clause 353
 - Application: In accordance with manufacturer's instructions/ specification, including all necessary bond and depth checks
 - Reinforcement: Parabit Duo Reinforcing Fabric
 - Minimum dry film thickness: 6 mm in 2 no 3 mm coats each at a rate of 3kg/m² plus access or protection sheet as specified
 - Colour: Black
4. Surface protection: Power Elastomeric 250 Sand generally with Power Elastomeric 250 Mineral Capsheet to exposed upstands
5. Insulation: Extruded polystyrene board as clause 340A
6. Water control/ filter layer: Water flow control layer as clause 390A
7. Insulation protection/ Securement: Stone ballast and paving slabs as shown on roof plan
8. Accessories:
 - Parabit Duo Angle Reinforcing Strip as clause 750- Rainwater outlets fully compatible with the roofing system as R10/ 365A
 - Geotextile membrane to rainwater outlet pebble border

PERFORMANCE

205A COMPLETION OF ROOFING DESIGN

1. Description: Detailed design
2. Requirement: Complete the detailed design to satisfy specified performance criteria and coordinate with the detailed design of related and adjacent work

3. Additional requirements: Responsibility for coordination at design interfaces
4. Design and production information: Preparation of detail drawings
5. Timing of submissions: Within two weeks of request but not less than 8 weeks before programmed commencement of work on site

210A ROOF PERFORMANCE

1. General: Firmly adhered, free draining and weathertight

PRODUCTS

340A INVERTED ROOF INSULATION

1. Description: horizontally laid:
2. Type: Extruded polystyrene board
3. Manufacturer: Icopal Ltd, Barton Dock Road, Stretford, Manchester, M32 0YL
 - Product reference: Thermazone IVR high performance rigid extruded polystyrene board
4. Standard: To BS EN 13164
 - Reaction to fire: Manufacturer's standard
 - Thermal conductivity (minimum): 0.033 W/mK
 - Thickness: 1 layer 120mm and 1 layer 160mm. 280 mm overall thickness
 - Compressive strength (minimum): 300 kPa
5. Edges: Rebated
6. Facing: Not required
7. Application: Staggered break-bond pattern ensuring all boards are laid flat and close butted

340B INVERTED ROOF INSULATION

1. Description: vertically laid to upstands:
2. Type: Mortar faced extruded polystyrene board
3. Manufacturer: Dow Chemical Co Ltd, Diamond House, Lotus Park, Kingsbury Crescent, Staines, TW18 3AG
 - Product reference: XEnergy LG extruded polystyrene insulation board with integral 10 mm thick mortar topping
4. Standard: To BS EN 13164
 - Reaction to fire: Manufacturer's standard
 - Thermal conductivity (minimum): 0.033 W/mK
 - Thickness: 50 mm
 - Compressive strength (minimum): 300 kPa
 - Other characteristics: None
5. Edges: Tongue and grooved on long sides, butt edge on short sides
6. Facing: 10mm thick mortar topping

353 WATERPROOF COATING

1. Type: Hot melt monolithic membrane
2. Manufacturer: Icopal Ltd, Barton Dock Road, Stretford, Manchester, M32 0YL
 - Product reference: Parabit Hot-Melt Compound
3. Primer: Icopal Siplast Primer, high penetration solvent based quick drying elastomeric bitumen priming solution, coverage typically 0.1-0.35 litres/m² as clause 725
4. Application: Fully in accordance with manufacturer's instructions, as clause 765
5. Reinforcement: Parabit Duo Reinforcing Fabric

6. Colour: Black
7. Minimum dry film thickness: 6 mm in 2 no 3 mm coats each at a rate of 3kg/m² plus access or protection sheet as required
8. Surface protection: Power Elastomeric 250 Sand generally with Power Elastomeric 250 Mineral Capsheet to exposed upstands

357 PIPE COLLARS

1. Manufacturer: Contractor's choice
 - Product reference: Contractor's choice
2. Size: As required to suit application

365 STONE BALLAST

1. Type: Washed, round aggregate
2. Supplier: Contractor's choice
3. Size: Graded 20-40 mm, free from fines and sharps
4. Colour: Natural

370 PRECAST CONCRETE PAVING SLABS

1. Manufacturer: Marshalls, Landscape House, Premier Way, Lowfields Business Park, Elland, West Yorkshire, HX5 9HT
 - Product reference: Standard Paving
2. Standard: To BS EN 1339, hydraulically pressed
 - Size: 600 x 600 x 50 mm
 - Water absorption: Manufacturer's standard
 - Resistance to freeze thaw: Manufacturer's standard
 - Breaking load (minimum): Manufacturer's standard
 - Colour: Natural
 - Finish: Pimple surface
 - Other BS EN 1339 characteristics: None
3. Recycled content: Manufacturer's standard
4. Support system: As clause 377

377 SUPPORT SYSTEM FOR PAVING SLABS OR TILES

1. Manufacturer: Alumasc Exterior Building Products Ltd, White House Works, Bold Road, Sutton, St Helens, WA9 4JG
 - Product reference: Harmer Uniring Paving support
2. Size: 176 mm diameter, 16 mm thick
3. Accessories: Shims

390A WATER FLOW REDUCING LAYER

1. Type: Non-woven polyethylene
2. Manufacturer: Icopal Ltd, Barton Dock Road, Stretford, Manchester, M32 0YL
 - Product reference: Monaperm 700 Vapour Permeable Roofing Felt
3. Installation: Lay so that water runs over and not into laps, with minimum 150 mm laps and so that water runs over and not into laps. Immediately seal laps and any penetrations through membrane using Monobond LT double sided tape

EXECUTION GENERALLY

410 ADVERSE WEATHER

1. Do not apply coatings
 - In wet conditions or at temperatures below 5°C, unless otherwise permitted by coating manufacturer.
 - In high winds (speeds > 7 m/s), unless adequate temporary windbreaks are erected adjacent to working area.
2. Unfinished areas of roof: Keep dry

420 SUITABILITY OF SUBSTRATES

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

430 APPLICATION

1. Transitions between dissimilar substrate material (eg concrete slab to masonry upstands, minor movement etc): Apply Parabit Polyester Reinforced Angle Flashing, 300 mm wide, lapped min 100 mm and bond continuously over whole surface, smooth and with no air pockets
2. Upstands: Install waterproofing system so that continuity is maintained for minimum 150 mm above finished roof level
3. Timing: Apply full waterproofing system to minimise foot traffic over membrane or provide temporary protection
4. Application of roof coating:
 - General: Carry out application in accordance with system manufacturer's current recommendations. Where any uncertainty of detailing or application arises, seek advice and approval for fabrication proposals from system manufacturer before proceeding
 - Apply Parabit DUO system to upstand details.
 - Roll out reinforcing layer into base coating whilst still hot, ensuring full embedment without wrinkles and air pockets and with minimum 75 mm laps.
 - Finished membrane: Firmly adhered to substrate and free of pinholes, blisters, foreign matter or other defects liable to permit passage of water
 - Pipework and other penetrations: Install metal framework around groups of pipes/ or other penetrations and fill with monolithic waterproofing membrane to form permanent waterproof pitch pocket. Apply protection sheet to pitch pocket upon completion
 - Reinforced elastomeric bitumen protection sheet: Apply into hotmelt compound/ membrane whilst still hot. Bond fully over whole surface, with no air pockets or wrinkles. Use wide head brush when rolling to aid application. Lap minimum 75 mm and seal with hotmelt compound. Spread out excess compound at laps with scraper to ensure seal
 - Exposed details and upstands: Torch apply mineral faced bitumen membrane to hot melt system. Fully bond without wrinkles or air pockets ensuring thermofusible film to underside is completely removed, with minimum 150 mm end laps and side laps following mineral-free selvedge. Ensure continuous 5 mm bead of bitumen extruded at all overlaps
 - Waterproofing to upstand: Secure using Fixing Restraint Bar mechanically fixed at 150 mm centres through membrane or, where independent cover flashing is omitted, with

Termination Bar mechanically fixed at 150 mm centres and pointed with suitable mastic sealant

EXISTING SUBSTRATES - NOT USED

NEW SUBSTRATES/ VAPOUR CONTROL LAYERS/ WARM DECK ROOF INSULATION - NOT USED

ROOF COATING SYSTEM - NOT USED

NEW SUBSTRATES

725 APPLYING PRIMERS/ BONDERS

1. Surface coverage: Apply well in to ensure local or full coverage according to type
2. Coats: Allow to dry before overcoating
3. Conditions:
 - Apply when temperature is >5°C and rising, provided this is above dew point.
 - Ensure each coat is through cured before proceeding.

750A PRELIMINARY LOCAL REINFORCEMENT

1. Reinforcement strip: Apply to junctions at upstands, penetrations and outlets, joints and fixings in discontinuous unit substrates
 - Bedding: Preliminary coating application
 - Joints: Lap in length min 150 mm
 - Bond: Continuous over whole surface, with no air pockets
 - Condition at completion: Smooth

765 APPLICATION OF COATINGS

1. Conditions:
 - Apply when temperature is >5°C and rising, provided this is above dew point.
 - Ensure each coat is through cured before proceeding.
2. Thickness: Monitor by taking wet/ dry film thickness readings
3. Continuity: Maintain full thickness of coatings around angles, junctions and features
4. Rainwater outlets: Form with watertight joints
5. Drainage systems: Do not allow liquid coatings to enter piped rainwater or foul systems

775 SKIRTINGS AND UPSTANDS

1. Reinforcement: As clause 750
2. Termination:
 - Use termination bar to fix waterproofing and protection sheet terminating on vertical face.
 - Fix termination bar at maximum 300 mm centres.
 - Sealant: Apply mastic sealant in a neat bead behind and along top edge of termination bar

SURFACING

830 LAYING INVERTED ROOF INSULATION

1. Condition of substrate: Clean
2. Separating layer: Lay polyethylene sheet under insulation where required by coating manufacturer
3. Setting out: Loose lay with staggered joints. Minimize cutting and avoid small pieces at perimeters and penetrations

- Joints: Butt together
- 4. Projections, upstands, rainwater outlets, etc: Cut insulation cleanly and fit closely around
- 5. Completion
 - Boards in good condition, well fitting and stable.
 - Cover to prevent wind uplift and flotation as soon as practicable.

835 WATER FLOW REDUCING MEMBRANES

1. Rolled out loose over inverted roof insulation, lapped minimum 150 mm and tape sealed in direction that helps shed water from water flow reducing membrane.
2. Dress water flow reducing membrane up all upstands and details to height of surfacing and down into outlets.

840 LAYING STONE BALLAST

1. Condition of substrate: Clean
2. Gravel guards: Fit to outlets
3. Laying: Spread evenly. Do not pile to excessive heights
 - Depth (minimum): 50 mm

850A LAYING PRECAST CONCRETE PAVING SLABS

1. Condition of substrate: Clean
2. Setting out: Minimize cutting
3. Joints: Open
 - Width: Determined by support system
4. Completion: Slabs must be level and stable

COMPLETION

910 INSPECTION

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

920 ELECTRONIC ROOF INTEGRITY TEST

1. Testing authority: Roofing contractor
2. Timing of test: Prior to, and on completion of access by other trades
3. Condition of roof prior to testing
 - Coating: Complete to a stage where integrity can be tested
 - Surface: Clean
4. Test results: Submit
5. Waterproof integrity certificate: On completion of testing, submit

940 COMPLETION

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

Ω End of Section

J40 FLEXIBLE SHEET TANKING/ DAMP PROOFING

TO BE READ WITH PRELIMINARIES/ GENERAL CONDITIONS.

110 SOFT BLINDING TO HARDCORE BEDS

1. Material: Soft sand
 - Thickness (minimum): 25 mm
2. Finish on completion: Smooth, consolidated bed free of sharp projections

TYPES OF TANKING/ DAMP PROOFING

120 LOOSE LAID PLASTICS OR RUBBER SHEET DAMP PROOFING

1. Substrate: Soft blinded hardcore
2. Manufacturer: Visqueen Building Products, Heanor Gate, Heanor, Derbyshire, DE75 7RG
 - Product reference: Visqueen High Performance DPM
3. Thickness/ Gauge: 500 micrometres (2000 gauge)
4. Recycled content: Not applicable
5. Joints
 - Surfaces to be joined: Clean and dry beyond full width of joint
 - Laps (minimum): End and side, 150 mm
 - Sealing:
 - Seal laps using VisqueenPro Double Sided Jointing Tape
 - Seal edges of top sheet and joins using VisqueenPro Single Sided Tape
 - Seal penetrations using preformed collars as clause 370

121 LOOSE LAID POLYETHYLENE TANKING TO LIFT PITS

1. Substrate: Smooth concrete
2. Manufacturer: Visqueen Building Products, Heanor Gate, Heanor, Derbyshire, DE75 7RG
 - Product reference: Visqueen Pre Applied Membrane
3. Thickness/ Gauge: 1mm
4. Recycled content: Not applicable
5. Joints
 - Surfaces to be joined: Clean and dry beyond full width of joint
 - Laps (minimum): End and side, 150 mm
 - Sealing:
 - Seal laps by welding
 - Seal joins using Visqueen Double Sided Jointing Tape with edges sealed using Visqueen Single Sided Jointing Tape

190B SELF-ADHESIVE BITUMEN DAMP PROOFING/ TANKING

1. Substrate: Smooth concrete
2. Primer: As clause 335C
3. Manufacturer: Visqueen Building Products, Visqueen Building Products, Heanor Gate, Heanor, Derbyshire, DE75 7RG
 - Product reference: Visqueen Self Adhesive Membrane
4. Number of layers: One.
5. Thickness/ Gauge: 1.5 mm

6. Bonding:
 - Full. Smooth out to exclude air.
7. Joints:
 - Surfaces to be joined: Clean and dry beyond full width of joint
 - Laps (minimum): 150 mm
 - Sealing: Roll to fully adhere
8. Accessories: Visqueen Pro Detailing Strip

297 WATERPROOFING/ DAMP PROOFING MEMBRANE

1. Substrate: Concrete
2. Manufacturer: Visqueen, Heanor Gate, Heanor, Derbyshire, DE75 7RG
 - Product reference: Viqueen TorchOn Tanking
3. Number of layers: Two, staggered
 - Thickness/ Gauge: 4 mm
4. Bonding: Torch-on full bond to primed surface in accordance with manufacturers datasheet
5. Joints
 - Surfaces to be joined: Clean and dry beyond full width of joint.
 - Laps (minimum): 150 mm
 - Sealing: Fully adhere
6. Accessories:
 - Visqueen Heavy Duty protection boards to membrane as Clause 380
 - Visqueen High Performance Tanking Primer to concrete surfaces
 - Visqueen Pro Detailing Strip for joint to Visqueen High Performance DPM

WORKMANSHIP

310 WORKMANSHIP GENERALLY

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

320 INSPECTION

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

335C PRIMER

1. Description: To smooth concrete for application of J40/ 190B
2. Manufacturer: Visqueen Building Products, Visqueen Building Products, Heanor Gate, Heanor, Derbyshire, DE75 7RG
 - Product reference: Visqueen HP Tanking Primer
3. Coverage per coat (minimum): 6-8m² per litre

4. Curing:

- Prime only sufficient areas which can be covered in less than 4 hours.
- Allow to dry thoroughly before covering.

370 PREFORMED COLLARS FOR PIPES, DUCTS, CABLES, ETC.

1. Manufacturer: Visqueen Building Products, Visqueen Building Products, Heanor Gate, Heanor, Derbyshire, DE75 7RG
 - Product reference: Visqueen Top Hat Unit
 - Sealing:
 - Bond base of unit to damp proof membrane using Visqueen Double Sided Tape
 - Seal joint between skirt of unit and damp proof membrane using VisqueenPro Single Sided Jointing Tape
 - Secure unit to penetration using jubilee clip
2. Sealing:
3. Completed junctions: Impervious

380 PROTECTION BOARDS FOR DAMP PROOFING/ TANKING

1. Manufacturer: Visqueen
 - Product reference: Visqueen Protect and Drain
2. Thickness: 12 mm
3. Application: Membrane surface clean and free from contaminants
 - Bonding: Not required
 - Board joints: Roll end jointing (vertical) to adjacent roll using VisqueenPro single sided jointing tape; Side lap jointing (horizontal) temporarily, as required, prior to backfilling using Visqueen GX double sided jointing tape
 - Board contact with membrane: Secure and continuous
4. Backfilling: Carry out when tanking, loading and protection are complete

381 PROTECTION FLEECE FOR DAMP PROOFING/ TANKING

1. Manufacturer: Visqueen Building Products, Visqueen Building Products, Heanor Gate, Heanor, Derbyshire, DE75 7RG
 - Product reference: Visqueen TreadGUARD 300 non-woven needle punched geotextile protection fleece
2. Application: Membrane surface clean and free from contaminants
 - Bonding: Secured using VisqueenPro Single Sided Jointing Tape
 - Joints: Overlapped minimum 150 mm
 - Fleece contact with membrane: Secure and continuous

Ω End of Section

J42 SINGLE LAYER POLYMERIC SHEET ROOF COVERINGS

CLAUSES

2 TO BE READ WITH PRELIMINARIES/ GENERAL CONDITIONS.

TYPES OF ROOF COVERING

110A WARM DECK ROOF COVERING

1. Description: Mechanically attached
2. Substrate: Steel profiled sheet decking as section G30 clause 150
 - Preparation: Not required
3. Roof covering system:
 - Manufacturer: Sika-Trocal, Sika Ltd, Watchmead, Welwyn Garden City, Herts, AL7 1BQ
 - Lower protection layer (loose laid): Not required
 - Vapour control layer: Polyethylene sheet as clause 395A
 - Insulation: RUF roofboard as clause 420A
 - Separating layer (loose laid): Not required
 - Waterproof membrane: Sika-Trocal S vapour permeable homogenised plasticised PVC roofing membrane
 - Width: 2000 mm
 - Thickness: 2.0 mm
 - Colour: Anthracite
 - Attachment: Mechanically attached as clauses 355A and 710A
 - Upper protection layer (loose laid):
 - As clause 380A, where small plant bases, feet or individual paving slabs supporting equipment are located on exposed waterproof membrane
 - Size: 50 mm larger all round than item located on waterproof membrane
 - Laying: Lay PVC face down and weld by minimum 30mm. Seal all edges with even bead of liquid PVC
4. Surface protection: Membrane walkway(s) as clause 485A
5. Accessories:
 - Rainwater outlets as clauses R10/365B&C
 - Pre-formed edge trims, angles, flashings and upstands as clause 770A
 - Fixings as clause 355A.
 - Roof penetration upstands as section P31/ 315
 - Roof penetration boxes as section P31/ 317

130A COLD DECK ROOF COVERING

1. Description: Mechanically attached
2. Substrate: Cold rolled steel zed bars spanning primary steel frame to structural engineer's details
 - Preparation: Plywood overlay as clause 360 with taped joints on profiled metal deck
3. Roof covering system:
 - Manufacturer: Sika-Trocal, Sika Ltd, Watchmead, Welwyn Garden City, Herts, AL7 1BQ
 - Lower protection layer (loose laid): Sika-Trocal Type P polyester fleece

- Waterproof membrane: Sika-Trocal S vapour permeable homogenised plasticised PVC roofing membrane
 - Width: 2000 mm
 - Thickness: 2.0 mm
 - Colour: Light grey upper surface
 - Attachment: Mechanically attached as clauses 355A and 710A
- Separating/ Upper protection layer (loose laid): Not required
- 4. Surface protection: Not required
- 5. Accessories:
 - Pre-formed edge trims, angles, flashings and upstands as clause 770A
 - Fixings as clause 355A

PERFORMANCE

205A COMPLETION OF DESIGN OF ROOF COVERINGS

1. Description: Detailed design
2. Requirement:
 - Complete the detailed design to satisfy specified performance criteria and coordinate with the detailed design of related and adjacent work.
 - Determine sizes, spacings and locations of fixings.
3. Additional requirements: Responsibility for co-ordination at design interfaces
4. Design and production information: Detail drawings showing fixings, joint details, design interfaces etc
5. Timing of submissions: Within two weeks of request but not less than 8 weeks before programmed commencement of work on site

210 ROOF PERFORMANCE

1. Roof covering: Secure, free draining and weathertight

GENERAL REQUIREMENTS

260A APPROVED FIRMS

1. Requirement: The work specified in this section: Together with any associated steel profiled sheet decking specified in section G30 is to be carried out by one of the following roofing contractors holding a current licence issued by waterproof membrane manufacturer;
 - Robertson Roofing Ltd, Smith Lane Farm, Smith Lane, Mobberley, Cheshire, WA16 7QE
 - Roofclad Systems, Penshaw Way, Portobello Industrial Estate, Birtley, Tyne & Wear, DH3 2SA
 - SIAC Construction Ltd, Bond's Mill, The Counting House, Stonehouse, Gloucestershire, GL10 3RP
2. Operatives: Operatives involved in laying membrane to demonstrate evidence of training by possession of a photo-identocard issued by waterproof membrane manufacturer confirming attendance at manufacturer's training course held at the Construction Industry Training Board, Welwyn Garden City (accreditation number ZZRF/ 18198)

270 WORKING DRAWINGS

1. Working drawings: Submit for appraisal by CA not less than 4 weeks before commencing work on site

PRODUCTS

330A TIMBER TRIMS, ETC

1. Quality: Planed. Free from wane, pitch pockets, decay and insect attack except ambrosia beetle damage
2. Moisture content at time of covering (maximum): 22%
3. Preservative treatment: To BWPDA Commodity Specification C8. If treated timber is in direct contact with membrane use aqueous, salt based preservative

340A PREFORMED SLEEVES

1. Type: 0.8 mm thick factory bonded Sika-Trocal S roofing membrane/ 0.6 mm galvanised steel sheet laminate
2. Manufacturer: As waterproof membrane
 - Product reference: Laminated metal cut and formed to required profile using press brake machinery
3. Colour: Light grey upper surface

345A PERIMETER TRIMS

1. Type: 0.8 mm thick factory bonded Sika-Trocal S roofing membrane/ 0.6 mm galvanised steel sheet laminate
2. Manufacturer: As waterproof membrane
 - Product reference: Laminated metal cut and formed to the required profile using press brake machinery
3. Colour: Light grey upper surface
4. Size: As shown on drawing(s)

355A MECHANICAL FASTENERS, WASHERS, PRESSURE PLATES, ETC

1. Type: Complying with the current edition of the British Board of Agreement MOAT 55, "UEAtc Supplementary guide for the assessment of mechanically fastened roof waterproofing for Class 2 point fasteners"
 - Material: Case hardened carbon steel
2. Manufacturer: Flat Roofing Supplies, Tinsley Lane North, Crawley, Sussex, RH10 9FF
 - Product reference: ISO-TAK ST-Tube system comprising laminated metal disc, ST-Tube and BS-5.5, HD-6.1 or BN-RF-5.0 fastener

360 PLYWOOD OVERLAY TO METAL DECK

1. Standard: To BS EN 636, section 9 (plywood for use in exterior conditions)
 - Quality: Naturally durable timber, free from preservatives.
2. Thickness: 18 mm

395A AIR AND VAPOUR CONTROL LAYER

1. Description: Loose laid
2. Type: Polyethylene sheet
3. Manufacturer: As roof membrane
 - Product reference: Sika-Trocal S-Vap 500E
4. Thickness: 0.15 mm
5. Vapour resistance: 576 MN s/ g

420A RIGID URETHANE FOAM WARM DECK ROOF INSULATION

1. Manufacturer: Kingspan Insulation Ltd, Pembridge, Leominster, Herefordshire, HR6 9LA

- Product reference: Thermaroom TR26 CFC-free rigid urethane insulation board with foil facings both sides
- 2. Standard: Rigid polyurethane foam (PU) board to BS EN 13165
- 3. Grade: 32 kg/ m³
- 4. Edges: Square
- 5. Thickness:
 - 150 mm generally
 - 100 mm at gutters
 - 25 mm to parapet upstands
- 6. Facing: Foil

485A MEMBRANE WALKWAY

1. Manufacturer/ Supplier: As roof membrane
 - Product reference: Sika-Trocac WBP20 overlay
2. Width: 1000 mm
3. Thickness: 2.0 mm
4. Colour: Slate grey
5. Finish: Pyramidically embossed
6. Reinforcement: Mechanically fixed 0.9 mm thick galvanised steel plate sandwiched between insulation and waterproof membrane, set back from edges of the walkway material by 50 mm and wrapped in Sika-Trocac Type P polyester fleece turned under edges of plate by 150 mm

EXECUTION GENERALLY

505 QUALITY OF WORK

1. General: Handle, store and neatly lay the waterproof membrane, ancillary products and accessories in accordance with membrane manufacturer's Application Manual and the recommendations of the respective manufacturer(s), to make the whole sound and watertight at the earliest opportunity

510 ADVERSE WEATHER

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

520 INCOMPLETE WORK

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

SUBSTRATES/ AIR AND VAPOUR CONTROL LAYERS/ WARM DECK ROOF INSULATION

610 SUITABILITY OF SUBSTRATES

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

640 FIXING TIMBER TRIMS

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

670A LAYING AIR AND VAPOUR CONTROL LAYER

1. Laying: Loose laid, flat and smooth
2. Side and head laps: 50 mm and 75 mm respectively. Seal using materials and method as membrane manufacturer's/ supplier's recommendations
3. Upstands, kerbs and other penetrations: Enclose edges of insulation. Fully seal at abutment by bonding or taping

680A LAYING WARM DECK ROOF INSULATION

1. Setting out:
 - Long edges: Fully supported and running at right angles to: troughs of metal decking
 - End edges: Adequately supported
 - Joints: Butted together.
 - End joints: Staggered.
2. Attachment: Not required
3. Mechanical fixing: Not required
4. Completion: Boards must be in good condition, well fitting and secure

WATERPROOF MEMBRANES/ ACCESSORIES

710A MECHANICAL FIXING OF WATERPROOF MEMBRANE

1. Setting out:
 - Perpendicular to deck direction
 - As required by disc pattern and mechanically fixed to structural deck in accordance with BS 6399-2
2. Laying: Loose, do not wrinkle or stretch
3. Installing fasteners:
 - Use manufacturer's/ supplier's recommended methods and equipment.
 - Insertion: Correct and consistent
4. Discs:
 - Sika-Trocal membrane laminated steel anchoring discs specially fabricated to match selected fastener and mechanically fixed as recommended by fastener manufacturer.
 - Distance from fixed edge (minimum): 10 mm
 - Fixing: Flush with membrane
5. Sheet overlaps: Extend beyond washers/ pressure plates by minimum: 50 mm and seal with even bead of liquid PVC
6. Surface condition at completion: Fully sealed, smooth, weatherproof and free draining

730A WELDED JOINTING OF WATERPROOF MEMBRANE

1. Side and end joints:
 - Laps (minimum): 50 mm
 - Preparation: Clean and dry surfaces beyond full width of joint
 - Sealing: Weld together
2. Seam sealant: Even bead of liquid PVC
3. Condition at completion: Fully sealed, smooth, weatherproof and free draining

730C WELDED JOINTING OF WATERPROOF MEMBRANE

1. Side and end joints:
 - Laps (minimum): 80 mm
 - Preparation: Clean and dry surfaces beyond full width of joint
 - Sealing: Weld together
2. Seam sealant: Not required
3. Condition at completion: Fully sealed, smooth, weatherproof and free draining

760A PERIMETER OF MEMBRANE

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

770A PERIMETER DETAILS FOR THERMOPLASTIC MEMBRANES

1. Upstands, edge trims, drips, kerbs, etc:
 - Form from Sika-Trocal membrane laminated metal flashings to all perimeters and changes of direction or plane secured to roof structure with mechanical fasteners.
 - Form exposed vertical upstands 150-900 mm high using Sika-Trocal membrane laminated metal or, at Contractor's choice, Sika-Trocal SG glass fibre reinforced PVC membrane welded to base metal flashing, top edge trim and Sika-Trocal membrane laminated steel anchoring discs.
 - Form curved exposed vertical upstands using Sika-Trocal SG glass fibre reinforced PVC membrane welded to base metal flashing, top edge trim and Sika-Trocal membrane laminated steel anchoring discs.
2. Roof membrane:
 - Join lengths of flashings incorporating 20 mm expansion gap using 'butt' strap of waterproof membrane with minimum 50 mm overlap and welded to each side with at least a 30mm overlap past any fixing.
 - Terminate in horizontal plane immediately adjacent to change in direction.
 - Sealing: Weld together and seal joint with Sika-Trocal PVC

780A ROOF PENETRATIONS THROUGH THERMOPLASTIC MEMBRANES

1. Roof membrane: Cut around penetrations and secure to deck
2. Flanged sleeve:
 - Type: Form with base flange from membrane laminated metal or rigid PVC
 - Installation: Dress over and around penetration and securely fasten to deck
 - Roof membrane overlap to flange (minimum): 50 mm and 30 mm beyond fasteners
 - Sealing: Weld membrane to base flange and seal with even bead of liquid PVC
 - Protection to top edge of sleeve: Flashing or weathering cravat fixed to penetration

787 PRE-FORMED CORNERS

1. Type: Pre-formed corner pieces
2. Manufacturer: As waterproof membrane
 - Product reference: Sika-Trocal pre-formed internal and external corner pieces manufactured in type to suit membrane type and colours used

SURFACING

850A LAYING MEMBRANE WALKWAYS

1. Attachment: All edges continuously welded, minimum width 30 mm, with cross welds every 500 mm and sealed with even bead of liquid PVC

COMPLETION

910 INSPECTION

1. Interim and final roof inspections: Submit reports

920A ELECTRONIC ROOF INTEGRITY TEST

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

940 COMPLETION

1. Roof areas: Clean
 - Outlets: Clear
2. Work necessary to provide a weathertight finish: Complete
3. Storage of materials on finished surface: Not permitted
4. Completed membrane: Do not damage. Protect from traffic and adjacent or high level working

950A GUARANTEE

1. Obtain, on behalf of building owner, product guarantee of 20 years duration from date of Practical Completion of Contract from waterproof membrane manufacturer and furthermore, obtain installer's warranty that installation has been carried out such that the roofing shall remain watertight, if maintained in accordance with waterproof membrane manufacturer's maintenance recommendations, for minimum 20 years from date of Practical Completion of Contract.

Ω End of Section

K10 PLASTERBOARD DRY LININGS/ PARTITIONS/ CEILINGS

CLAUSES

2 TO BE READ WITH PRELIMINARIES/ GENERAL CONDITIONS.

TYPES OF DRY LINING

126 METAL STUD PARTITION SYSTEM

1. Description: Part boarded
2. Locations: Where shown on Fabric/ Finishes layout drawing(s)
3. Manufacturer: British Gypsum Ltd, East Leake, Loughborough, Leicestershire, LE12 6JT
 - Product reference: British Gypsum GypWall ROBUST metal stud partition
4. Nominal thickness (including linings): 102 mm generally but as shown on Fabric/ Finishes layout drawing(s) for twin frame partitions
5. Fire resistance of complete partition assembly to BS EN 1364-1:1999:
 - Integrity/ insulation: As shown on Fabric/ Finishes layout drawing(s)
6. Studs:
 - 70 mm Gypframe ref 70S60 C studs at max 600 mm centres (max 400 mm centres to partitions to receive ceramic wall tiling) and at abutments, openings and junctions, to partitions up to 4000 mm high.
 - 70 mm Gypframe ref 70S60 C studs at max 400 mm centres and at abutments, openings and junctions, to partitions 4000-4400 mm high.
 - 70 mm Gypframe ref 70S60 C studs at max 300 mm centres and at abutments, openings and junctions, to partitions 4400-4700 mm high.
7. Floor channel: Gypframe ref 72DC50 deep flange channel to partitions up to 4700 mm high
8. Head channel: As floor channel except where otherwise specified on detail drawing(s) to partitions incorporating a deflection head
 - Head condition: Concrete slab/ metal deck
 - Deflection allowance: Up to 25 mm as shown on detail drawing
9. Nogging to support top edges of boarding: Gypframe ref 70S50 C stud with each end cut, fitted and screwed to studs
 - Cavity fire barrier at head of boarding as clause 535.
10. Insulation: Not required
 - Recycled content: Not applicable
 - Thickness: Not applicable
11. Resilient layer: Not required
12. Linings: Single layer 15 mm thick tapered edge glass fibre reinforced gypsum board as clause 408A, sheet width 1200 mm, each side of framing to 100 mm above highest adjacent suspended ceiling level
 - Fixing: As clause 590
 - Screws: 25 mm British Gypsum Drywall screws (25 mm British Gypsum Jack-Point screws where fixing to metal components 0.9 mm thick or greater)
13. Acoustic sealant: As clause 515
14. Finishing: Seamless jointing as clause 671
 - Primer/ Sealer:
 - 1 coat Gyproc Drywall Primer to surfaces to receive paint decorative finish
 - 2 coats Gyproc Drywall Sealer to surfaces to receive ceramic wall tiling

- None to surfaces to receive vinyl sheet, vinyl/ acrylic sheet or pvc sheet wall linings
 - Accessories: Metal beads/ stops recommended by board manufacturer
15. Other requirements: Firestopping/ acoustic sealing around services as section P12

127 METAL STUD PARTITION SYSTEM

1. Description: Boarded full height
2. Locations: Where shown on Fabric/ Finishes layout drawing(s)
3. Manufacturer: British Gypsum Ltd, East Leake, Loughborough, Leicestershire, LE12 6JT
 - Product reference: British Gypsum GypWall ROBUST metal stud partition
4. Nominal thickness (including linings): 102 mm generally but as shown on Fabric/ Finishes layout drawing(s) for twin frame partitions
5. Fire resistance of complete partition assembly to BS EN 1364-1:1999:
 - Integrity/ insulation: As shown on Fabric/ Finishes layout drawing(s)
6. Airborne sound insulation
 - Laboratory measurement of complete partition assembly:
 - Weighted sound reduction index R_w (minimum) to BS EN ISO 717-1: R_{w42dB} (100 - 3150 Hz)
7. Studs:
 - 70 mm Gypframe ref 70S60 C studs at max 600 mm centres (max 400 mm centres to partitions to receive ceramic wall tiling) and at abutments, openings and junctions, to partitions up to 4000 mm high.
 - 70 mm Gypframe ref 70S60 C studs at max 400 mm centres and at abutments, openings and junctions, to partitions 4000-4400 mm high.
 - 70 mm Gypframe ref 70S60 C studs at max 300 mm centres and at abutments, openings and junctions, to partitions 4400-4700 mm high.
8. Floor channel: Gypframe ref 72DC50 deep flange channel to partitions up to 4700 mm high
9. Head channel: As floor channel except where otherwise specified on detail drawing(s) to partitions incorporating a deflection head
 - Head condition: Concrete slab/ metal deck
 - Deflection allowance: Up to 25 mm as shown on detail drawing
10. Fixing 'T': Gypframe ref GFT1 fixing 'T' to support horizontal joint between boards where lining height exceeds maximum manufactured length of board
11. Insulation: Not required
 - Recycled content: Not applicable
 - Thickness: Not applicable
12. Resilient layer: Not required
13. Linings: Single layer 15 mm thick tapered edge glass fibre reinforced gypsum board as clause 408A, sheet width 1200 mm, each side of framing full height to structural soffit level (allowing for deflection where specified)
 - Fixing: As clause 590
 - Screws: 25 mm British Gypsum Drywall screws (25 mm British Gypsum Jack-Point screws where fixing to metal components 0.9 mm thick or greater)
14. Acoustic sealant: As clause 515
15. Finishing: Seamless jointing as clause 671
 - Primer/ Sealer:
 - 1 coat Gyproc Drywall Primer to surfaces to receive paint decorative finish
 - 2 coats Gyproc Drywall Sealer to surfaces to receive ceramic wall tiling

- None to surfaces to receive vinyl sheet, vinyl/ acrylic sheet or pvc sheet wall linings
 - Accessories: Metal beads/ stops recommended by board manufacturer
16. Other requirements: Firestopping/ acoustic sealing around services as section P12

128B MEDIUM GRADE ACOUSTICALLY IMPROVED METAL STUD PARTITION SYSTEM

1. Description: Boarded full height
2. Locations: Where shown on Fabric/ Finishes layout drawing(s)
3. Manufacturer: British Gypsum Ltd, East Leake, Loughborough, Leicestershire, LE12 6JT
 - Product reference: British Gypsum GypWall ROBUST metal stud partition
4. Nominal thickness (including linings): 102 mm generally but as shown on Fabric/ Finishes layout drawing(s) for twin frame partitions
5. Fire resistance of complete partition assembly to BS EN 1364-1:1999:
 - Integrity/ insulation: As shown on Fabric/ Finishes layout drawing(s)
6. Airborne sound insulation
 - Laboratory measurement of complete partition assembly:
 - Weighted sound reduction index R_w (minimum) to BS EN ISO 717-1: R_{w50dB} (100 - 3150 Hz)
7. Studs:
 - 70 mm Gypframe ref 70AS50 AcouStud C studs at max 600 mm centres (max 400 mm centres to partitions to receive ceramic wall tiling) with 70 mm Gypframe ref 70S50 C studs at abutments, openings and junctions, to partitions up to 4000 mm high.
 - 70 mm Gypframe ref 70AS50 AcouStud C studs at max 400 mm centres with 70 mm Gypframe ref 70S50 C studs at abutments, openings and junctions, to partitions 4000-4400 mm high.
 - 70 mm Gypframe ref 70AS50 AcouStud C studs at max 300 mm centres with 70 mm Gypframe ref 70S50 C studs at abutments, openings and junctions, to partitions 4400-4700 mm high.
8. Floor channel: Gypframe ref 72DC50 deep flange channel to partitions up to 4700 mm high
9. Head channel: As floor channel except where otherwise specified on detail drawing(s) to partitions incorporating a deflection head
 - Head condition: Concrete slab/ metal deck
 - Deflection allowance: Up to 25 mm as shown on detail drawing
10. Fixing 'T': Gypframe ref GFT1 fixing 'T' to support horizontal joint between boards where lining height exceeds maximum manufactured length of board.
11. Insulation: Glass mineral wool to BS EN 13162
 - Manufacturer: British Gypsum Ltd, East Leake, Loughborough, Leicestershire, LE12 6JT
 - Product reference: Isover Acoustic Partition Roll (APR 1200)
 - Recycled content: Up to 86%
 - Thickness: 50 mm
12. Resilient layer: Not required
13. Linings: Single layer 15 mm thick tapered edge glass fibre reinforced gypsum board as clause 408A, sheet width 1200 mm, each side of framing full height to structural soffit level (allowing for deflection where specified)
 - Fixing: As clause 590
 - Screws: 25 mm British Gypsum Drywall screws (25 mm British Gypsum Jack-Point screws where fixing to metal components 0.9 mm thick or greater)
14. Acoustic sealant: As clause 515
15. Finishing: Seamless jointing as clause 671

- Primer/ Sealer:
 - 1 coat Gyproc Drywall Primer to surfaces to receive paint decorative finish
 - 2 coats Gyproc Drywall Sealer to surfaces to receive ceramic wall tiling
 - None to surfaces to receive vinyl sheet, vinyl/ acrylic sheet or pvc sheet wall linings
- Accessories: Metal beads/ stops recommended by board manufacturer

16. Other requirements: Firestopping/ acoustic sealing around services as section P12

129C HIGH GRADE ACOUSTICALLY IMPROVED METAL STUD PARTITION SYSTEM

1. Description: Boarded full height
2. Locations: Where shown on Fabric/ Finishes layout drawing(s)
3. Manufacturer: British Gypsum Ltd, East Leake, Loughborough, Leicestershire, LE12 6JT
 - Product reference: British Gypsum GypWall ROBUST metal stud partition
4. Nominal thickness (including linings): 132 mm generally but as shown on Fabric/ Finishes layout drawing(s) for twin frame partitions
5. Fire resistance of complete partition assembly to BS EN 1364-1:1999:
 - Integrity/ insulation: As shown on Fabric/ Finishes layout drawing(s)
6. Airborne sound insulation
 - Laboratory measurement of complete partition assembly:
 - Weighted sound reduction index R_w (minimum) to BS EN ISO 717-1: R_{w58dB} (100 - 3150 Hz)
7. Studs:
 - 70 mm Gypframe ref 70AS50 AcouStud C studs at max 600 mm centres (max 400 mm centres to partitions to receive ceramic wall tiling) with 70 mm Gypframe ref 70S50 C studs at abutments, openings and junctions, to partitions up to 5000 mm high.
 - 70 mm Gypframe ref 70AS50 AcouStud C studs at max 400 mm centres with 70 mm Gypframe ref 70S50 C studs at abutments, openings and junctions, to partitions 5000-5200 mm high.
 - 70 mm Gypframe ref 70AS50 AcouStud C studs at max 300 mm centres with 70 mm Gypframe ref 70S50 C studs at abutments, openings and junctions, to partitions 5200-5500 mm high.
8. Floor channel: Gypframe ref 72DC50 deep flange channel to partitions up to 5500 mm high
9. Head channel: As floor channel except where otherwise specified on detail drawing(s) to partitions incorporating a deflection head
 - Head condition: Concrete slab/ metal deck
 - Deflection allowance: Up to 25 mm as shown on detail drawing
10. Fixing strap: Gypframe ref GFS1 fixing strap to support horizontal joint between boards where lining height exceeds maximum manufactured length of board
11. Insulation: Glass mineral wool to BS EN 13162
 - Manufacturer: British Gypsum Ltd, East Leake, Loughborough, Leicestershire, LE12 6JT
 - Product reference: Isover Acoustic Partition Roll (APR 1200)
 - Recycled content: Up to 86%
 - Thickness: 25 mm
12. Resilient layer: Not required
13. Linings: Inner layer 15 mm thick tapered edge gypsum board as clause 409A, sheet width 1200 mm, and outer layer 15 mm thick tapered edge glass fibre reinforced gypsum board as clause 408A, sheet width 1200 mm, each side of framing full height to structural soffit level (allowing for deflection where specified)
 - Fixing: As clause 590

- Screws: 25 mm British Gypsum Drywall screws for fixing inner layer of board and 40 mm British Gypsum Drywall screws for fixing outer layer of board (25 and 41 mm British Gypsum Jack-Point screws respectively where fixing to metal components 0.9 mm thick or greater)
14. Acoustic sealant: As clause 515
15. Finishing: Seamless jointing as clause 671
- Primer/ Sealer:
 - 1 coat Gyproc Drywall Primer to surfaces to receive paint decorative finish
 - 2 coats Gyproc Drywall Sealer to surfaces to receive ceramic wall tiling
 - None to surfaces to receive vinyl sheet, vinyl/ acrylic sheet or pvc sheet wall linings
 - Accessories: Metal beads/ stops recommended by board manufacturer
16. Other requirements: Firestopping/ acoustic sealing around services as section P12

146 SINGLE SIDED METAL STUD PARTITION SYSTEM

1. Description: Part boarded
2. Locations: Where shown on Fabric/ Finishes layout drawing(s)
3. Manufacturer: British Gypsum Ltd, East Leake, Loughborough, Leicestershire, LE12 6JT
 - Product reference: British Gypsum GypWall ROBUST metal stud partition
4. Nominal thickness (including linings): As shown on Fabric/ Finishes layout drawing(s)
5. Studs:
 - 70 mm Gypframe ref 70S60 C studs at max 600 mm centres (max 400 mm centres to partitions to receive ceramic wall tiling) and at abutments, openings and junctions, formed on face of primary masonry wall/ plasterboard/ metal stud partition with metal framing plugged and screwed to masonry/ screw fixed through plasterboard to metal framing within plasterboard/ metal stud partition, to partitions up to 4000 mm high.
 - 70 mm Gypframe ref 70S60 C studs at max 400 mm centres and at abutments, openings and junctions, formed on face of primary masonry wall/ plasterboard/ metal stud partition with metal framing plugged and screwed to masonry/ screw fixed through plasterboard to metal framing within plasterboard/ metal stud partition, to partitions 4000-4400 mm high.
 - 70 mm Gypframe ref 70S60 C studs at max 300 mm centres and at abutments, openings and junctions, formed on face of primary masonry wall/ plasterboard/ metal stud partition with metal framing plugged and screwed to masonry/ screw fixed through plasterboard to metal framing within plasterboard/ metal stud partition, to partitions 4400-4700 mm high.
6. Floor channel: Gypframe ref 72DC50 deep flange channel to partitions up to 4700 mm high
7. Head channel: As floor channel except where otherwise specified on detail drawing(s) to partitions incorporating a deflection head
 - Head condition: Concrete slab/ metal deck
 - Deflection allowance: Up to 25 mm as shown on detail drawing
8. Nogging to support top edges of boarding: Gypframe ref 99FC50 fixing channel
9. Insulation: Glass mineral wool to BS EN 13162
 - Recycled content: Up to 86%
 - Thickness: 25 mm to lining type L3 acoustically improved
10. Resilient layer: Not required
11. Linings: Single layer 15 mm thick tapered edge glass fibre reinforced gypsum board as clause 408A, sheet width 1200 mm, to 100 mm above suspended ceiling level one side of partition
 - Fixing: As clause 590
 - Screws: 25 mm British Gypsum Drywall screws (25 mm British Gypsum Jack-Point screws where fixing to metal components 0.9 mm thick or greater)

12. Acoustic sealant: As clause 515
13. Finishing: Seamless jointing as clause 671
 - Primer/ Sealer:
 - 1 coat Gyproc Drywall Primer to surfaces to receive paint decorative finish
 - 2 coats Gyproc Drywall Sealer to surfaces to receive ceramic wall tiling
 - None to surfaces to receive vinyl sheet, vinyl/ acrylic sheet or pvc sheet wall linings
 - Accessories: Metal beads/ stops recommended by board manufacturer
14. Other requirements:
 - Restrain each stud to substrate at max 1200 mm centres in accordance with system manufacturer's recommendations
 - Firestopping/ acoustic sealing around services as section P12

146A SINGLE SIDED METAL STUD PARTITION SYSTEM

1. Description: Boarded full height
2. Locations: Where shown on Fabric/ Finishes layout drawing(s)
3. Manufacturer: British Gypsum Ltd, East Leake, Loughborough, Leicestershire, LE12 6JT
 - Product reference: British Gypsum GypWall ROBUST metal stud partition
4. Nominal thickness (including linings): As shown on Fabric/ Finishes layout drawing(s)
5. Studs:
 - 70 mm Gypframe ref 70S60 C studs at max 600 mm centres (max 400 mm centres to partitions to receive ceramic wall tiling) and at abutments, openings and junctions, formed on face of primary masonry wall/ plasterboard/ metal stud partition with metal framing plugged and screwed to masonry/ screw fixed through plasterboard to metal framing within plasterboard/ metal stud partition, to partitions up to 4000 mm high.
 - 70 mm Gypframe ref 70S60 C studs at max 400 mm centres and at abutments, openings and junctions, formed on face of primary masonry wall/ plasterboard/ metal stud partition with metal framing plugged and screwed to masonry/ screw fixed through plasterboard to metal framing within plasterboard/ metal stud partition, to partitions 4000-4400 mm high.
 - 70 mm Gypframe ref 70S60 C studs at max 300 mm centres and at abutments, openings and junctions, formed on face of primary masonry wall/ plasterboard/ metal stud partition with metal framing plugged and screwed to masonry/ screw fixed through plasterboard to metal framing within plasterboard/ metal stud partition, to partitions 4400-4700 mm high.
6. Floor channel: Gypframe ref 72DC50 deep flange channel to partitions up to 4700 mm high
7. Head channel: As floor channel except where otherwise specified on detail drawing(s) to partitions incorporating a deflection head
 - Head condition: Concrete slab/ metal deck
 - Deflection allowance: Up to 25 mm as shown on detail drawing
8. Nogging to support top edges of boarding: Gypframe ref 99FC50 fixing channel
9. Insulation: Glass mineral wool to BS EN 13162
 - Recycled content: Up to 86%
 - Thickness: 25 mm to lining type L3 acoustically improved
10. Resilient layer: Not required
11. Linings: Single layer 15 mm thick tapered edge glass fibre reinforced gypsum board as clause 408A, sheet width 1200 mm, full-height to structural soffit
 - Fixing: As clause 590
 - Screws: 25 mm British Gypsum Drywall screws (25 mm British Gypsum Jack-Point screws where fixing to metal components 0.9 mm thick or greater)
12. Acoustic sealant: As clause 515

13. Finishing: Seamless jointing as clause 671
 - Primer/ Sealer:
 - 1 coat Gyproc Drywall Primer to surfaces to receive paint decorative finish
 - 2 coats Gyproc Drywall Sealer to surfaces to receive ceramic wall tiling
 - None to surfaces to receive vinyl sheet, vinyl/ acrylic sheet or pvc sheet wall linings
 - Accessories: Metal beads/ stops recommended by board manufacturer
14. Other requirements:
 - Restrain each stud to substrate at max 1200 mm centres in accordance with system manufacturer's recommendations
 - Firestopping/ acoustic sealing around services as section P12

146B SINGLE SIDED METAL STUD PARTITION SYSTEM

1. Description: Part boarded
2. Locations: Where shown on Fabric/ Finishes layout drawing(s)
3. Manufacturer: British Gypsum Ltd, East Leake, Loughborough, Leicestershire, LE12 6JT
 - Product reference: British Gypsum GypWall ROBUST metal stud partition
4. Nominal thickness (including linings): As shown on Fabric/ Finishes layout drawing(s)
5. Studs:
 - 70 mm Gypframe ref 70S60 C studs at max 600 mm centres (max 400 mm centres to partitions to receive ceramic wall tiling) and at abutments, openings and junctions, formed on face of primary masonry wall/ plasterboard/ metal stud partition with metal framing plugged and screwed to masonry/ screw fixed through plasterboard to metal framing within plasterboard/ metal stud partition, to partitions up to 4000 mm high.
 - 70 mm Gypframe ref 70S60 C studs at max 400 mm centres and at abutments, openings and junctions, formed on face of primary masonry wall/ plasterboard/ metal stud partition with metal framing plugged and screwed to masonry/ screw fixed through plasterboard to metal framing within plasterboard/ metal stud partition, to partitions 4000-4400 mm high.
 - 70 mm Gypframe ref 70S60 C studs at max 300 mm centres and at abutments, openings and junctions, formed on face of primary masonry wall/ plasterboard/ metal stud partition with metal framing plugged and screwed to masonry/ screw fixed through plasterboard to metal framing within plasterboard/ metal stud partition, to partitions 4400-4700 mm high.
6. Floor channel: Gypframe ref 72DC50 deep flange channel to partitions up to 4700 mm high
7. Head channel: As floor channel except where otherwise specified on detail drawing(s) to partitions incorporating a deflection head
 - Head condition: Concrete slab/ metal deck
 - Deflection allowance: 10 mm
8. Nogging to support top edges of boarding: Gypframe ref 99FC50 fixing channel.
9. Insulation: Not required
 - Recycled content: Up to 86%
10. Resilient layer: Not required
11. Linings: Two layers of 15 mm thick tapered edge glass fibre reinforced gypsum board as clause 408A, sheet width 1200 mm, to 100 mm above suspended ceiling level one side of partition
 - Fixing: As clause 590
 - Screws: 25 mm British Gypsum Drywall screws (25 mm British Gypsum Jack-Point screws where fixing to metal components 0.9 mm thick or greater)
12. Acoustic sealant: As clause 515
13. Finishing: Seamless jointing as clause 671

- Primer/ Sealer:
 - 1 coat Gyproc Drywall Primer to surfaces to receive paint decorative finish
 - 2 coats Gyproc Drywall Sealer to surfaces to receive ceramic wall tiling
 - None to surfaces to receive vinyl sheet, vinyl/ acrylic sheet or pvc sheet wall linings
 - Accessories: Metal beads/ stops recommended by board manufacturer
14. Other requirements:
- Restrain each stud to substrate at max 1200 mm centres in accordance with system manufacturer's recommendations
 - Firestopping/ acoustic sealing around services as section P12

147 METAL STUD PARTITION SYSTEM

1. Description: Suspended from structural soffit as cavity barrier within suspended ceiling void
2. Locations: Where shown on Fabric/ Finishes layout drawing(s)
3. Manufacturer: British Gypsum Ltd, East Leake, Loughborough, Leicestershire, LE12 6JT
 - Product reference: British Gypsum GypWall ROBUST metal stud partition
4. Nominal thickness (including linings): 102 mm
5. Fire resistance of complete partition assembly to BS 476-20 and -22:
 - Integrity/ insulation: 30/ 15
6. Studs: 70 mm Gypframe ref 70S60 C studs at max 600 mm centres and at abutments, openings and junctions.
7. Bottom channel: Gypframe ref 72DC50 deep flange channel.
8. Head channel: As bottom channel
 - Head condition: Concrete slab/ metal deck
9. Insulation: Not required
 - Recycled content: Not applicable
 - Thickness: Not applicable
10. Resilient layer: Not required
11. Linings: Single layer 15 mm thick tapered edge glass fibre reinforced gypsum board as clause 408A, sheet width 1200 mm, each side of framing
 - Fixing: As clause 590
 - Screws: 25 mm British Gypsum Drywall screws
12. Acoustic sealant: As clause 515
13. Finishing: Joints taped and filled
 - Primer/ Sealer: Not required
 - Accessories: Metal beads/ stops recommended by board manufacturer
14. Other requirements:
 - Terminate cavity barrier partition(s) within ceiling void(s) 150 mm above suspended ceiling level and infill gap with 50 mm galvanised wire mesh faced Rockwool Fire Barrier clamped between Rockwool support angle and Rockwool clamping plate with support angle tangs pushed through barrier at 450 mm centres and folded back on to face of slotted clamping plate. Fix support angle to underside of partition using ITW Buildex Ltd HT fixings. Lap Fire Barrier on to the top of suspended ceiling and wire to ceiling suspension system
 - Firestopping/ acoustic sealing around services as section P12

148 METAL STUD PARTITION SYSTEM

1. Description: Suspended from structural soffit as bulkhead at change of ceiling level
2. Locations: Where shown on Fabric/ Finishes layout drawing(s)

3. Manufacturer: British Gypsum Ltd, East Leake, Loughborough, Leicestershire, LE12 6JT
 - Product reference: British Gypsum GypWall ROBUST metal stud partition
4. Nominal thickness (including linings): 102 mm generally but as shown on Fabric/ Finishes layout drawing(s) for twin frame partitions
5. Studs: 70 mm Gypframe ref 70S60 C studs at max 600 mm centres (max 400 mm centres to partitions to receive ceramic wall tiling) and at abutments, openings and junctions
6. Bottom channel: Gypframe ref 72DC50 deep flange channel
7. Head channel: As bottom channel
 - Head condition: Concrete slab/ metal deck
8. Insulation: Not required
 - Recycled content: Not applicable
 - Thickness: Not applicable
9. Resilient layer: Not required
10. Linings: Single layer 15 mm thick tapered edge glass fibre reinforced gypsum board as clause 408A, sheet width 1200 mm, each side of and to soffit of framing to 100 mm above highest adjacent suspended ceiling level
 - Fixing: As clause 590
 - Screws: 25 mm British Gypsum Drywall screws
11. Acoustic sealant: As clause 515
12. Finishing: Seamless jointing as clause 671
 - Primer/ Sealer:
 - 1 coat Gyproc Drywall Primer to surfaces to receive paint decorative finish
 - 2 coats Gyproc Drywall Sealer to surfaces to receive ceramic wall tiling
 - None to surfaces to receive vinyl sheet, vinyl/ acrylic sheet or pvc sheet wall linings
 - Accessories: Metal beads/ stops recommended by board manufacturer
13. Other requirements: None

149 METAL STUD PARTITION SYSTEM

1. Description: Suspended from structural soffit as bulkhead at change of ceiling level and acting as cavity barrier within suspended ceiling void
2. Locations: Where shown on Fabric/ Finishes layout drawing(s)
3. Manufacturer: British Gypsum Ltd, East Leake, Loughborough, Leicestershire, LE12 6JT
 - Product reference: British Gypsum GypWall ROBUST metal stud partition
4. Nominal thickness (including linings): 102 mm generally but as shown on Fabric/ Finishes layout drawing(s) for twin frame partitions
5. Fire resistance of complete partition assembly to BS 476-20 and -22:
 - Integrity/ insulation: 30/ 15
6. Studs: 70 mm Gypframe ref 70S60 C studs at max 600 mm centres (max 400 mm centres to partitions to receive ceramic wall tiling) and at abutments, openings and junctions
7. Bottom channel: Gypframe ref 72DC50 deep flange channel
8. Head channel: As bottom channel
 - Head condition: Concrete slab/ metal deck
9. Insulation: Not required
 - Recycled content: Not applicable
 - Thickness: Not applicable
10. Resilient layer: Not required

11. Linings: Single layer 15 mm thick tapered edge glass fibre reinforced gypsum board as clause 408A, sheet width 1200 mm, each side of and to soffit of framing full height to structural soffit level
 - Fixing: As clause 590
 - Screws: 25 mm British Gypsum Drywall screws
12. Acoustic sealant: As clause 515
13. Finishing: Seamless jointing as clause 671
 - Primer/ Sealer:
 - 1 coat Gyproc Drywall Primer to surfaces to receive paint decorative finish
 - 2 coats Gyproc Drywall Sealer to surfaces to receive ceramic wall tiling
 - None to surfaces to receive vinyl sheet, vinyl/ acrylic sheet or pvc sheet wall linings
 - Accessories: Metal beads/ stops recommended by board manufacturer
14. Other requirements: Firestopping/ acoustic sealing around services as section P12

151 SHAFTWALL METAL STUD PARTITION SYSTEM

1. Description: Boarded full height
2. Locations: Where shown on Fabric/ Finishes layout drawing(s)
3. Manufacturer: British Gypsum Ltd, East Leake, Loughborough, Leicestershire, LE12 6JT
 - Product reference: British Gypsum ShaftWall system
4. Nominal thickness (including linings): 97 mm
5. Fire resistance of complete partition assembly to BS 476-20 and -22:
 - Integrity/ insulation: As shown on Fabric/ Finishes layout drawing(s)
6. Studs: 70 mm Gypframe ref 70I70 I studs at max 600 mm centres (max 300 mm centres to partitions to receive ceramic wall tiling) with 70 mm Gypframe ref 70SC70 starter channels at abutments, openings and junctions to partitions up to 4400 mm high
7. Floor channel: Gypframe ref 72FEC50 channel to ShaftWalls up to 4200 mm high
8. Head channel: Gypframe ref 72EDC80 extra deep flange channel
 - Head condition: Concrete slab/ metal deck
 - Head deflection allowance: Up to 15 mm as shown on detail drawing
9. ShaftWall retaining channels: Gypframe ref G110 ShaftWall retaining channels
10. Angle: Gypframe ref GA3 angle to support top edge of lower CoreBoard at horizontal joint between CoreBoards
11. Fixing 'T': Gypframe ref GFT1 fixing 'T' to support horizontal joint between boards where lining height exceeds maximum manufactured length of board
12. Core: Single layer 19 mm thick square edge Gyproc CoreBoard
 - Horizontal joints: Gypframe ref GA3 angle and 122 x 598 mm Gyproc Fire Stops
13. Resilient layer: Not required
14. Linings: Two layers 12.5 mm thick tapered edge glass fibre reinforced gypsum board as clause 404A, sheet width 1200 mm, full height to structural soffit level (allowing for deflection where specified)
 - Fixing: As clause 590
 - Screws: 25 mm British Gypsum Drywall screws for fixing inner layer of board and 35 mm British Gypsum Drywall screws for fixing outer layer of board (25 and 35 mm British Gypsum Jack-Point screws respectively where fixing to metal components 0.9 mm thick or greater)
15. Acoustic sealant: As clause 515
16. Finishing: Seamless jointing as clause 671

- Primer/ sealer:
 - 1 coat Gyproc Drywall Primer to surfaces to receive paint decorative finish
 - 2 coats Gyproc Drywall Sealer to surfaces to receive ceramic wall tiling
 - None to surfaces to receive vinyl sheet, vinyl/ acrylic sheet or pvc sheet wall linings
- Accessories: Metal beads/ stops recommended by board manufacturer

17. Other requirements: Firestopping/ acoustic sealing around services as section P12

152A 120 MINS FIRE RESISTING SHAFTWALL METAL STUD PARTITION SYSTEM

1. Description: Boarded full height
2. Locations: Where shown on Fabric/ Finishes layout drawing(s)
3. Manufacturer: British Gypsum Ltd, East Leake, Loughborough, Leicestershire, LE12 6JT
 - Product reference: British Gypsum ShaftWall system
4. Nominal thickness (including linings): 107 mm
5. Fire resistance of complete partition assembly to BS 476-20 and -22:
 - Integrity/ insulation: 90/ 90
6. Studs: 70 mm Gypframe ref 70I70 I studs at max 600 mm centres (max 300 mm centres to partitions to receive ceramic wall tiling) with 70 mm Gypframe ref 70SC70 starter channels at abutments, openings and junctions to partitions up to 4500 mm high
7. Floor channel: Gypframe ref 72FEC50 channel to ShaftWalls up to 4200 mm high
8. Head channel: Gypframe ref 72EDC80 extra deep flange channel to partitions constructed using 70 mm I studs
 - Head condition: Concrete slab/ metal deck
 - Head deflection allowance: Up to 15 mm as shown on detail drawing
9. ShaftWall retaining channels: Gypframe ref G110 ShaftWall retaining channels
10. Angle: Gypframe ref GA3 angle to support top edge of lower CoreBoard at horizontal joint between CoreBoards
11. Fixing strap: Gypframe ref GFS1 fixing strap to support horizontal joint between boards where lining height exceeds maximum manufactured length of board.
12. Core: Single layer 19 mm thick square edge Gyproc CoreBoard
 - Horizontal joints: Gypframe ref GA3 angle and 122 x 598 mm Gyproc Fire Stops
13. Resilient layer: Not required
14. Linings: Three layers 15 mm thick tapered edge glass fibre reinforced gypsum board as clause 412, sheet width 1200 mm, full height to structural soffit level (allowing for deflection where specified)
 - Fixing: As clause 590
 - Screws: 25 mm British Gypsum Drywall screws for fixing inner layer of board and 40 mm British Gypsum Drywall screws for fixing outer layer of board (25 and 41 mm British Gypsum Jack-Point screws respectively where fixing to metal components 0.9 mm thick or greater)
15. Acoustic sealant: As clause 515
16. Finishing: Seamless jointing as clause 671
 - Primer/ sealer:
 - 1 coat Gyproc Drywall Primer to surfaces to receive paint decorative finish
 - 2 coats Gyproc Drywall Sealer to surfaces to receive ceramic wall tiling
 - None to surfaces to receive vinyl sheet, vinyl/ acrylic sheet or pvc sheet wall linings
 - Accessories: Metal beads/ stops recommended by board manufacturer
17. Other requirements: Firestopping/ acoustic sealing around services as section P12

160 WALL LINING ON STEEL FRAMING SYSTEM

1. Framing: G10/ 150 steel framing system
2. Linings: Two layers 15 mm thick tapered edge glass fibre reinforced gypsum board as clause 408A, sheet width 1200 mm, full height to structural soffit level
 - Fixing: as clause 590
 - Screws: 25 mm British Gypsum Jack-Point screws to steel components up to 1.5 mm thick, 5.5 x 25 mm ITW Buildex Ltd ref CFC26 Bugle Head, Teks 3 screws to steel components up to 2.5 mm thick and 5.5 x 42 mm ITW Buildex Ltd ref TFL42, Teks 5 csk head screws to steel components 2.6-12.5 mm thick
3. Insulation: P10/ 190A semi-rigid unfaced mineral fibre slabs
4. Acoustic sealant: As clause 515.
5. Finishing: Seamless jointing as clause 671
 - Primer/sealer: 1 coat Gyproc Drywall Primer to surfaces to receive paint decorative finish. 2 coats Gyproc Drywall Sealer to surfaces to receive ceramic wall tiling. None to surfaces to receive vinyl sheet, vinyl/ acrylic sheet or pvc sheet wall linings
6. Other requirements: Metal beads/ stops recommended by board manufacturer

160A WALL LINING ON STEEL FRAMING SYSTEM TO REVEALS OF OPENINGS

1. Framing: G10/ 150 steel framing system
2. Linings: Inner layer 36.5 mm thick laminate insulated tapered edge gypsum board as clause 414 and outer layer 15 mm thick tapered edge glass fibre reinforced gypsum board as clause 408A
 - Fixing: as clause 590.
 - Screws: 25 mm British Gypsum Jack-Point screws to steel components up to 1.5 mm thick, 5.5 x 25 mm ITW Buildex Ltd ref CFC26 Bugle Head, Teks 3 screws to steel components up to 2.5 mm thick and 5.5 x 42 mm ITW Buildex Ltd ref TFL42, Teks 5 csk head screws to steel components 2.6-12.5 mm thick
3. Insulation: 27 mm thick extruded polystyrene to rear face of 9.5 mm thick tapered edge gypsum board as clause 414
4. Acoustic sealant: As clause 515.
5. Finishing: Seamless jointing as clause 671
 - Primer/sealer:
 - 1 coat Gyproc Drywall Primer to surfaces to receive paint decorative finish
 - 2 coats Gyproc Drywall Sealer to surfaces to receive ceramic wall tiling
 - None to surfaces to receive vinyl sheet, vinyl/ acrylic sheet or pvc sheet wall linings
6. Other requirements: Metal beads/ stops recommended by board manufacturer

186 WALL LINING SYSTEM (ADHESIVE)

1. Locations: Where shown on Fabric/ Finishes layout drawing(s)
2. Manufacturer: British Gypsum Ltd, East Leake, Loughborough, Leicestershire, LE12 6JT
 - Product reference: British Gypsum DriLyner BASIC lining system
3. Wall: Concrete blockwork
4. Adhesive method: Dabs as clause 621
5. Linings: Single layer 15 mm thick tapered edge glass fibre reinforced gypsum board as clause 408A, sheet width 1200 mm, to 100 mm above suspended ceiling level
6. Finishing: Seamless jointing as clause 671
 - Primer/ Sealer:
 - 1 coat Gyproc Drywall Primer to surfaces to receive paint decorative finish

- 2 coats Gyproc Drywall Sealer to surfaces to receive ceramic wall tiling
 - None to surfaces to receive vinyl sheet, vinyl/ acrylic sheet or pvc sheet wall linings
 - Accessories: Metal beads/ stops recommended by the board manufacturer
7. Other requirements:
- Drywall metal edge beads as clause 692 to stop ends at visible abutments with door and window frames
 - Where applicable, continuous fillet of adhesive to provide fixing for suspended ceiling shadow battens/ perimeter trims

221 PROPRIETARY NON-FIRE RESISTING SUSPENDED CEILING SYSTEM

1. Standard: To BS EN 13964
2. Evidence of compliance: All ceilings kits to be CE marked. Submit Declaration of Performance (DoP)
3. Manufacturer: British Gypsum Ltd, East Leake, Loughborough, Leicestershire, LE12 6JT
 - Product reference: British Gypsum CasoLine MF concealed grid suspended ceiling system
4. Lining board: Single layer 12.5 mm thick tapered edge plasterboard as clause 401A, sheet size 1800 x 900 mm or, where shown on layouts, single layer 12.5 mm thick tapered edge perforated plasterboard as clause 405A, sheet size 1800 x 900 mm
 - Fixing: As clause 590
 - Screws: 25 mm British Gypsum Drywall screws
 - Finishing: Seamless jointing as clause 671
 - Primer/ Sealer: 1 coat Gyproc Drywall Primer to surfaces to receive paint decorative finish
 - Accessories: Drywall metal edge beads as clause 692 to visible edges of linings where system incorporates shadow battens
5. Suspension system:
 - Channel types: Gypframe ref MF7 primary support channels
 - Ceiling sections: Gypframe ref MF5 ceiling sections fixed to primary grid using Gypframe ref MF9 connecting clips
 - Grid centres:
 - Primary grid centres: 1200 mm
 - Secondary grid centres: 450 mm
 - Hangers: Gypframe ref MF8 strap hangers fixed to soffit with Gypframe ref MF12 soffit cleats
 - Centres: 1200 mm
 - Top fixing: To suit structural soffit of concrete slab/ metal deck
 - Perimeters: Gypframe ref MF6 perimeter channel
6. Insulation: Not required
 - Thickness: Not applicable
7. Access units: As clause 431
8. Electrical continuity and earth bonding: Not required
9. Accessories/ Other requirements: None

227A PROPRIETARY 120 MINS SUSPENDED CEILING SYSTEM

1. Standard: To BS EN 13964
2. Evidence of compliance: All ceilings kits to be CE marked. Submit Declaration of Performance (DoP)
3. Manufacturer: British Gypsum Ltd, East Leake, Loughborough, Leicestershire, LE12 6JT

- Product reference: British Gypsum Shaftwall Horizontal System C106056
- 4. Lining board: Upper Frame: Two layers 15 mm thick tapered Gyproc FireLine Upper Frame as clause 404A, Lower Frame: Two layers 15 mm thick tapered Gyproc FireLine Upper Frame as clause 404A, sheet size 1800 x 900 mm, with board joints in second layer staggered relative to layers
 - Fixing: As clause 590
 - Screws: 25 mm British Gypsum Drywall screws for fixing inner layer of board and 40 mm British Gypsum Drywall screws for fixing outer layer of board
 - Finishing: Seamless jointing as clause 671
 - Primer/ Sealer: 1 coat Gyproc Drywall Primer to surfaces to receive paint decorative finish. None to surfaces to receive vinyl sheet, vinyl/ acrylic sheet or pvc sheet ceiling linings
 - Accessories: None
- 5. Suspension system:
 - Channel types: Two Gypframe 146 TI90 tabbed 'I' studs
 - Ceiling sections: Gypframe retaining channel
 - Grid centres: Primary grid centres 600 mm
- 6. Electrical continuity and earth bonding: Not required
- 7. Accessories/ Other requirements: None

265A ENCASUREMENT SYSTEM (FRAMELESS)

1. Description: To steel beams, columns and bracing etc except where within external wall construction
2. Manufacturer: British Gypsum Ltd, East Leake, Loughborough, Leicestershire, LE12 6JT
 - Product reference: British Gypsum FireCase frameless structural steel encasement system
 - Fire protection of complete assembly to BS 476: Part 20 (550°C): 60 mins
 - A/V (HP/A)m-1 section factor: Up to 260
3. Support system: Sizes and spacings of intermediate backing strips/ noggings/ metal angles and fixings as recommended by board manufacturer
4. Linings: Single layer glass reinforced gypsum board as clause 412, thickness to suit HP/ A factor of protected steelwork and fire resistance required
 - Fixing: As clauses 495, 497, 499
 - Screws: 40 mm British Gypsum Glasroc F FireCase screws
5. Finishing: Jointing to visible areas as clause 676
6. Other requirements: None

265B ENCASUREMENT SYSTEM (FRAMELESS)

1. Description: To steel beams, columns and bracing etc except where within external wall construction
2. Manufacturer: British Gypsum Ltd, East Leake, Loughborough, Leicestershire, LE12 6JT
 - Product reference: British Gypsum FireCase frameless structural steel encasement system
 - Fire protection of complete assembly to BS 476: Part 20 (550°C): 120 mins
 - A/V (HP/A)m-1 section factor: Up to 260
3. Support system: Sizes and spacings of intermediate backing strips/ noggings/ metal angles and fixings as recommended by board manufacturer
4. Linings: Single layer glass reinforced gypsum board as clause 412, thickness to suit HP/ A factor of protected steelwork and fire resistance required

- Fixing: As clauses 495, 497 , 499
 - Screws: 40 mm British Gypsum Glasroc F FireCase screws
5. Finishing: Jointing to visible areas as clause 676
 6. Other requirements: None

GENERAL/ PREPARATION

325 PREPARATION OF MASONRY TO RECEIVE WALL LININGS

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

335A ADDITIONAL SUPPORTS

1. 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. Where fixtures and fittings are located on reverse partition face to openings for pre-plumbed sanitary assemblies, avoid obstructing openings through use of Gypframe ref 99FC50 fixing channel(s). 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.

385 SERVICE PENETRATIONS

1. General: Ensure that fire resistance and other specified performance requirements are not impaired by service penetrations
2. Services penetrations:
 - Form framed openings accurately for grouped services, ducts, etc allowing for associated fire barriers.
 - Provide firestop putty pads as clause P12/ 351 to recessed services outlets and switches to maintain fire and/ or acoustic rating of partitions.

395 CONTROL SAMPLES

1. General: Complete areas of finished work and obtain approval of appearance before proceeding
2. Type of dry lining: Partition type K10/ 128B including structural opening for doorset and deflection head
 - Location/ Size: Submit proposals

COMPONENTS

400 RESPONSIBLE SOURCING OF CONSTRUCTION PRODUCTS

1. Required rating to BRE standard BES 6001: Framework Standard for Responsible Sourcing of Construction Products:
 - Plasterboards, glass reinforced specialist boards, plasters and metal products: Very good

400A GYPSUM BOARDS GENERALLY

1. 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)

401A GYPSUM PLASTERBOARD

1. Type: To BS EN 520, type A
2. Core density (minimum): 650 kg/m³
3. Recycled content: Not applicable
4. Exposed surface and edge profiles: Suitable to receive specified finish
5. Manufacturer: British Gypsum Ltd, East Leake, Loughborough, Leicestershire, LE12 6JT
 - Product reference: Gyproc WallBoard

404A GYPSUM PLASTERBOARD (IMPROVED FIRE PROTECTION)

1. Type: To BS EN 520, type F
2. Core: Including fibres and/ or other additives for improved cohesion
 - Density (minimum): 760-784 kg/m³
3. Recycled content: Not applicable
4. Exposed surface and edge profiles: Suitable to receive specified finish
5. Manufacturer: British Gypsum Ltd, East Leake, Loughborough, Leicestershire, LE12 6JT
 - Product reference: Gyproc FireLine glass fibre reinforced gypsum board

405A GYPSUM PLASTERBOARD (PERFORATED)

1. Type: To BS EN 520, type A
2. Core density (minimum): 800 kg/m³
3. Recycled content: Not applicable
4. Exposed surface and edge profiles: Suitable to receive specified finish
5. Manufacturer: British Gypsum Ltd, East Leake, Loughborough, Leicestershire, LE12 6JT
 - Product reference: Gyptone QUATTRO 41 perforated gypsum board

408A GYPSUM PLASTERBOARD (IMPACT RESISTANT)

1. Type: To BS EN 520, types D, F, I and R
2. Core density (minimum): 885-908 kg/m³
3. Paper facings: Heavy duty
4. Recycled content: Not applicable
5. Exposed surface and edge profiles: Suitable to receive specified finish
6. Manufacturer: British Gypsum Ltd, East Leake, Loughborough, Leicestershire, LE12 6JT
 - Product reference: Gyproc DuraLine glass fibre reinforced gypsum board

409A GYPSUM PLASTERBOARD (IMPROVED SOUND INSULATION)

1. Type: To BS EN 520, type D
2. Core density (minimum): 820 kg/m³
3. Recycled content: Not applicable
4. Exposed surface and edge profiles: Suitable to receive specified finish
5. Manufacturer: British Gypsum Ltd, East Leake, Loughborough, Leicestershire, LE12 6JT
 - Product reference: Gyproc SoundBloc gypsum board

412 GYPSUM PLASTERBOARD (IMPROVED FIRE PROTECTION AND IMPACT RESISTANCE)

1. Type: To EN 15283-1, types GM-F and H2

2. Core: Including fibres and/ or other additives for improved cohesion
 - Density (minimum): 800-900 kg/m³
3. Recycled content: Not applicable
4. Exposed surface and edge profiles: Suitable to receive specified finish
5. Manufacturer: British Gypsum Ltd, East Leake, Loughborough, Leicestershire, LE12 6JT
 - Product reference: Glasroc F FireCase glass reinforced gypsum board

414 GYPSUM PLASTERBOARD (INSULATED)

1. Type: To BS EN 13950: 2014
2. Reaction to fire: Manufacturer's standard
3. Water vapour resistance factor: Manufacturer's standard
4. Thermal conductivity: 0.05 W/(m·K)
5. Manufacturer: British Gypsum Ltd, East Leake, Loughborough, Leicestershire, LE12 6JT
 - Product reference: Gyproc Thermaline Plus
 - Insulation thickness: 27 mm
 - Board thickness: 9.5 mm

431A ACCESS PANELS

1. Description: Non-fire resisting
2. Manufacturer: Artex Ltd, Pasture Lane, Ruddington, Nottingham, NG11 6AE
 - Product reference: Proflex standard hinged, non-fire resisting zinc coated mild steel access panel with beaded frame
3. Type: Non-fire resisting
 - Sizes: As shown on ceiling layout drawing(s)
4. Frame: Bead for taping and jointing
5. Door: Metal; primed for site painting
6. Lock: Budget lock
7. Other requirements: Additional Gypframe ref FEA1 steel angle hangers at each corner of trimmed opening for panel

INSTALLATION

436 DRY LININGS GENERALLY

1. General:
 - Use fixing, jointing, sealing and finishing materials, components and installation methods recommended by board manufacturer.
 - Except where stated otherwise, comply with recommendations laid down in BS8212: 1995 "Code of practice for Dry lining and partitioning using gypsum plasterboard"
2. Do not use damaged boards.
3. Operatives: Properly trained for dry lining work and who have attended a recognised training scheme
4. Accuracy: Set out and construct partitions so that deviations from stated setting out positions and tolerances in erected partition faces do not exceed the permissible deviations and tolerances laid down in BS 8212:1995, Section 3, clauses 3.3.2-3.3.3 and 3.3.5-3.3.7
5. Environmental conditions:
 - Comply with recommendations laid down in BS8212: 1995, Section 5, clauses 5.2-5.3
 - Prevent frost damage.
6. Cutting gypsum boards: Neatly and accurately without damaging core or tearing paper facing

- Cut edges: Minimize and position at internal angles wherever possible. Mask with bound edges of adjacent boards at external corners
- 7. Fixings boards: Securely and firmly to suitably prepared and accurately levelled backgrounds. Set heads of fastenings in a depression; do not break paper or gypsum core
- 8. Finishing: Neatly to give flush, smooth, flat surfaces free from bowing and abrupt changes of level

445A CEILINGS

1. Sequence: Fix boards to dry lined walls and partitions before fixing to ceilings
2. Orientation of boards: Fix with bound edges at right angles to supports and with ends staggered in adjacent rows
3. Two layer boarding: Stagger joints between layers by not less than 600 mm

455A METAL FRAMING FOR PARTITIONS/ WALL LININGS

1. Setting out: Accurately aligned and plumb
 - Frame/ Stud positions: Equal centres to suit specified linings, maintaining sequence across openings. Where sequence would otherwise require the provision of a stud within the opening for a pre-plumbed sanitary assembly in order to ensure support to vertical board edges located on the reverse partition face, use vertical Gypframe ref 99FC90 fixing channel(s) to avoid obstructing opening
 - Additional studs: To support vertical edges of boards
2. Fixing centres at perimeters (maximum): 600 mm
3. Twin frame partitions: Cross-brace between studs with horizontal bracing at 600 mm centres comprising short lengths of Gypframe stud or channel section twice screwed to studs at each end
4. Fixing centres at perimeters (maximum):
 - Fix floor/head channels and perimeter abutment studs with a single row of fixings at 600 mm centres.
 - Fix 94 and 148 mm wide floor/head channels/ 92 and 146 mm perimeter abutment studs using two rows of staggered fixings, each at 600 mm centres and with each fixing 25 mm in from flange.
 - Fix head channel to ShaftWall head channels at max 300 mm centres, incorporating 25 x 3 mm Gyproc FireStrip.
5. Splayed junctions: Form internal and external corners using Gypframe ref GA6 pre-formed splayed angles
6. Openings:
 - Form accurately.
 - Framing assembly for doorsets:
 - To achieve Severe (SD) strength grade requirements to BS 5234-1 and to adequately support weight of door.
 - Form using sleeved metal studs incorporating continuous preservative treated sawn softwood inserts full height to structural soffit level to jambs and extra deep flange channel incorporating continuous full width inverted stud insert to head.
 - Services penetrations: Allow for associated fire stopping

485 SUSPENDED CEILING GRIDS

1. Setting out: Accurately aligned and level
 - Grid members and hangers: Centres to suit specified linings and imposed loads
 - Additional grid members: Provide bracing and stiffening at upstands, partition heads, access hatches, etc

2. Fixing: Securely at perimeters, grid joints, top and bottom hanger fixings

495 FIXING K10/ 265 THREE SIDED BEAM CASING ON STEEL ANGLES

1. Framing:
 - Fix continuous lengths of Gypframe ref FEA1 Steel Angle to both sides of top flange or background using shot-fired or fire resistant fixings at 600 mm centres, ensuring face of angle is flush with edge of flange.
2. Boarding:
 - Lightly butt boards together.
 - Fix fascia boards to ref FEA1 Steel Angles using 40 mm Glasroc F FireCase screws at 150 mm centres.
 - Fix fascia boards to soffit boards using 40 mm Glasroc F FireCase screws/ 50 mm galvanised staples at 150 mm centres.
 - Back fascia board joints with 60 mm wide strip of glass reinforced gypsum board as clause 412 fixed through fascia boards using 40 mm Glasroc F FireCase screws/ staples at 150 mm centres.
 - Stagger board joints minimum 600 mm between adjacent sides.
 - Set screw heads in a depression.

497 FIXING K10/ 265 THREE SIDED COLUMN CASING ON STEEL ANGLES

1. Framing:
 - Fix continuous lengths of Gypframe ref FEA1 Steel Angle to both sides of flange abutting wall structure, or to wall structure itself, using shot-fired or fire resistant fixings at 600 mm centres, ensuring face of angle is flush with edge of flange. Use additional ref GA1 angles where column flange is set at right angles to wall structure.
2. Boarding:
 - Lightly butt board joints together.
 - Fix return boards to ref FEA1 Steel Angles using 40 mm Glasroc F FireCase screws at 150 mm centres.
 - Fix face boards to return boards using 40 mm Glasroc F FireCase screws/ 50 mm galvanised staples at 150 mm centres.
 - Back return board joints with 60 mm wide strip of glass reinforced gypsum board as clause 412 fixed through return boards using 40 mm Glasroc F FireCase screws/ 50 mm galvanised staples at 150 mm centres.
 - Stagger board joints minimum 600 mm between adjacent sides.
 - Set screw heads in a depression.

499 FIXING K10/ 265 FOUR SIDED COLUMN CASING

1. Boarding:
 - Butting boards lightly together, fix to each other on adjacent faces using 40 mm Glasroc F FireCase screws/ 50 mm galvanised staples at 150 mm centres setting screw heads/ staples in a depression.
 - Stagger board joints minimum 600 mm between adjacent sides.

505 INSTALLING MINERAL WOOL INSULATION

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

515 SEALING GAPS AND AIR PATHS

1. Manufacturer: British Gypsum Ltd, East Leake, Loughborough, Leicestershire, LE12 6JT
 - Product reference: Gyproc Sealant
2. Location of sealant: After installation of cut pieces of board forming any deflection heads, channels and perimeter studs and immediately prior to installation of boards, apply continuous bead of sealant to perimeter abutments and around openings
 - Pressurised shafts and ducts: At board-to-board and board-to-metal frame junctions
3. Application: To clean, dry and dust free surfaces as a continuous bead with no gaps
 - Gaps greater than 6 mm between floor and underside of gypsum board: After sealing, fill with jointing compound

555 FIRE-STOPPING AT PERIMETERS OF DRY LINING SYSTEMS

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

560 JOINTS BETWEEN BOARDS

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

565 VERTICAL JOINTS

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

570A HORIZONTAL JOINTS

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

590A FIXING GYPSUM BOARD TO METAL FRAMING/ FURRINGS

1. Partitions/ Wall linings: Fix securely and firmly at the following centres (maximum):
 - Single layer boarding: To all framing at 300 mm centres. Reduce to 200 mm centres at external angles
 - Multi-layer boarding: Face layer at 300 mm centres, and previous layers around perimeters at 300 mm centres
2. Ceilings: Fix securely and firmly at 230 mm centres. Reduce to 150 mm at board ends and at lining perimeters
3. Position of screws from edges of boards (minimum): 10 mm from bound edges and 13 mm from cut edges
 - Screw heads: Set in a depression. Do not break paper or gypsum core

595 DEFLECTION HEADS

1. Fixing boards: Do not fix to head channels

621 FIXING GYPSUM BOARD WITH ADHESIVE DABS

1. Setting out boards: Accurately aligned and plumb
2. Fixing to substrates:
 - Securely using adhesive dabs.
 - Apply grid of adhesive dabs to achieve at least 20% contact with background for each board.
3. Adhesive dab spacings for each board:
 - Horizontally: One row along top edge and one continuous dab along bottom edge
 - Vertically: One row along each edge and thereafter at intermediate spacings to suit size of board:
 - Thickness (mm) Width (mm) Dab centres (mm)
 - 9.5 1200 400
 - 9.5/12.5 900 450
 - 12.5 1200 600
4. Adhesive dab dimensions (width x length): At least 50-75 mm x 250 mm
 - Position of dabs from edges/ ends of boards (minimum): 25 mm
5. Temporary supports: Provide under bottom edge of boards until dabs have set

FINISHING

650 LEVEL OF DRY LINING ACROSS JOINTS

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

671 SEAMLESS JOINTING TO GYPSUM BOARDS

1. Manufacturer: British Gypsum Ltd, East Leake, Loughborough, Leicestershire, LE12 6JT
 - Jointing system compounds:
 - Gyproc Joint Filler for bulk and secondary filling and Gyproc Ready Mix Joint Cement for finishing
 - Where surface is to receive vinyl sheet, vinyl/ acrylic sheet or pvc sheet wall/ ceiling linings ensure Gyproc Ready Mix Joint Cement is allowed to fully dry prior to application of linings. Alternatively, use Gyproc Easi-Fill for bulk/ secondary filling and finishing
 - Joints/gaps/internal corners: Gyproc Joint Tape
 - External angles: Gyproc Corner Tape generally but Gyproc Drywall Metal Angle Bead where M20/ 235 multi-coat proprietary polished plaster specified
2. Cut edges of boards: Lightly sand to remove paper burrs
3. Filling and taping: Fill joints, gaps and internal angles with jointing compound and cover with continuous lengths of paper tape, fully bedded

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

692 RIGID BEADS/STOPS

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

695 INSTALLING BEADS/ STOPS

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

Ω End of Section

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

CLAUSES

2 TO BE READ WITH PRELIMINARIES/ GENERAL CONDITIONS.

TYPES OF FLOORING/ SHEATHING/ DECKING/ SARKING/ LINING/ CASINGS

425 PLYWOOD WALL SHEATHING

1. Substrate: Preservative treated softwood framing
 - Additional supports: As clause 930
2. Sheathing: Plywood manufactured to the relevant standards and quality control procedures specified in BS 5268-2, and so marked
 - Manufacturer/ Supplier: Schauman Wood Oy, Niemenkatu 16, PO Box 203, FIN-15141 Lahti, Finland
 - Product reference: WISA-Spruce plywood
 - Type: Finnish conifer plywood
 - Grade: II/ III
 - Nominal thickness/ number of plies: 18 mm/ 7 plies
3. Setting out: Long edges vertical and centred on supports
 - Expansion gap between adjacent boards (unless otherwise recommended by manufacturer): 2-3 mm
4. Fixing to supports:
 - Fasteners: 50 x 3.35 mm galvanized annular ringed shank nails
 - Fixing centres (maximum):
 - Around board edges: 150 mm
 - Along intermediate supports: 300 mm
 - Fixing distance from edges (minimum): 25 mm from bottom edge of board and 10 mm from other edges

486 WALL SHEATHING

1. Description: Cement/ calcium silicate board
2. Substrate: G10/ 150 steel framing system
3. Sheathing: Cement/ calcium silicate sheathing board
 - Manufacturer: RCM Ltd, 25/26 Rosevale Road, Parkhouse Industrial Estate West, Newcastle-under-Lyme, Staffordshire, ST5 7EF
 - Product reference: RCM Y-wall
 - Thickness: 12mm
4. Setting out: Long edges vertical and centred on supports
 - Expansion gap between adjacent boards: 2-5 mm
5. Fixing to supports:
 - Fasteners: 4.8 x 38 mm wing tip self-drilling fixings
 - Fixing centres (maximum):
 - Around board edges: 300 mm
 - Along intermediate supports: 300 mm

- Fixing distance from edges (minimum): 12-15 mm from bottom edge of board, 12-15mm from other edges and 50 mm from corners
6. Accessories:
- Waterproofing seal: RCM Foil Tape
 - Neutral cure sealant for use in gaps and joints: RCM Intusil
 - Airtightness seal: RCM Joint Seal

WORKMANSHIP

910 INSTALLATION GENERALLY

1. Timing: Building to be weathertight before fixing boards internally
2. Moisture content of timber supports (maximum): 18%
3. Joints between boards: Accurately aligned, of constant width and parallel to perimeter edges
4. Methods of fixing, and fasteners: As section Z20 where not specified otherwise

930 ADDITIONAL SUPPORTS

1. Additional studs, noggings/ dwangs (Scot) and battens
 - Provision: 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
 - Quality of timber: As for adjacent timber supports
 - Treatment (where required): As for adjacent timber supports

940 BOARD MOISTURE CONTENT AND CONDITIONING

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

950 MOISTURE CONTENT TESTING

1. Test regime and equipment: Submit proposals
2. Test results: Submit record of tests and results

960 FIXING GENERALLY

1. Boards/ sheets: Fixed securely to each support without distortion and true to line and level
2. 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
3. Surplus adhesive: Removed as the work proceeds

980 OPEN JOINTS

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

Ω End of Section

K13

RIGID SHEET FINE LININGS AND PANELLING

TYPES OF LINING AND PANELLING

160 PROPRIETARY ACOUSTIC WALL PANELS

1. Panels

- Manufacturer: Saint-Gobain Ecophon
 - Contact details
 - Address: Old Brick Kiln
Ramsdell
Tadley
Hampshire
RG26 5PP
 - Telephone: +44 (0)1256 855208
 - Web: www.ecophon.com/uk
 - Email: technical@ecophon.co.uk
 - Product reference: Akusto Wall System C
- Battens: Galvanized steel or aluminium profiles
- Acoustic insulation: In accordance with EN ISO 354, Class A
- Panelling
 - Type: Glass wool panel
 - Surface material: Texona.
- System accessories:
- Finish: Colour to Architect's requirement from manufacturer's full colour range
- Trim: Connect™ Channel Trim.
- Weight: 4–5 kg/m² (approximate, including Connect wall panel system).
- Indoor climate: Recommended by the Swedish Asthma and Allergy Association. Certified as A+ by French VOC. Emission classification of building materials: M1.
- Moisture resistance: Class A, relative humidity 70% and 25°C, according to EN 13964:2014.
- Fire safety: Complies with BS EN 13501-1, Class A2-s1, d0.
- Articulation Class: 230 AC(1.5), ASTM E1111, ASTM E1110.
- Cleaning: Daily dusting, vacuum cleaning and weekly wet-wiping (Super G and Akutex FT surfaces). Weekly dusting and vacuum cleaning (Texona surface) as required.

GENERAL REQUIREMENTS

220 MATERIAL SAMPLES

1. Representative samples of designated materials: Submit before placing orders.

260 ENVIRONMENTAL CONDITIONS

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

FABRICATION/ FIXING/ FINISHING

310 ACCURACY OF FABRICATION

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

350 FIXING LININGS AND PANELLING

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

Ω End of Section

K32 PANEL CUBICLES

TO BE READ WITH PRELIMINARIES/ GENERAL CONDITIONS.

122 PANEL CUBICLES

1. Description:
2. Manufacturer: Thrislington Cubicles Ltd, Prince William Avenue, Sandycroft, Deeside, Flintshire, CH5 2QZ
 - Product reference: Flow system cubicles
3. Panels:
 - Height (overall): CHECK
2700 mm
 - Floor clearance: 15 mm
 - Core material: 650-720 kg/m³ moisture resistant grade chipboard
 - Thickness: 18 mm
 - Facings: Decorative high pressure laminate (HPL)
 - Colour/ Pattern/ Species: To CA's requirements from Formica Group "Washroom" collection
 - Edge treatment: Square, laminate lipped all round
 - Wall support: Concealed
4. Pilasters:
 - Floor clearance: 15 mm
 - Core material: 650-720 kg/m³ moisture resistant grade chipboard
 - Thickness: 63 mm overall comprising 18 mm thick inner and outer panels, laminate faced and lipped all round, fixed each side of aluminium framing, offset to form rebate to accept adjacent door
 - Facings: Decorative high pressure laminate (HPL)
 - Colour/ Pattern/ Species: To CA's requirements from Formica Group "Washroom" collection
 - Edge treatment: Square, laminate lipped all round, fitted with stainless steel receiver
5. Doors:
 - Height: Full height
 - Floor clearance: 15 mm
 - Core material: Composite
 - Thickness: 30 mm
 - Facings: Decorative high pressure laminate (HPL)
 - Colour/ Pattern/ Species: To CA's requirements from Formica Group "Washroom" collection
 - Edge treatment: Rebated on closing edge, splayed to pivot edge of outward opening doors, laminate lipped
 - Ironmongery:
 - Hydraulic door closer concealed within headrail/ floor pivot
 - Stainless steel lock with concealed fixing through door and emergency release facility engaging in flush fitting stainless steel receiver integral to pilaster
 - "D" handles to outward opening doors

- Colour: Manufacturer's standard
6. Fittings:
 - Headrails: Extruded satin anodised headrail faced with matching laminate
 - Pedestals/ Shoes: Manufacturer's standard
 7. Accessories: None
 8. Other requirements: Door(s) to fall closed

160C DUCT LININGS – ONE PIECE SOLID GRADE LAMINATE ASSEMBLY AND PROPRIETARY FIXINGS

1. Description:
2. Manufacturer: Total Laminate Systems Ltd, 11 Nimrod Way, East Dorset Trade Park, Wimborne, Dorset, BH21 7SH
 - Product reference: Simplicity pre-plumbed sanitary assemblies with flush fitting, semi-recessed hinged access doors as shown on detail drawings
3. One piece units:
 - Dimensions: As described in Sanitary Schedule and shown on detail drawings
 - Material: Compact Laminate (CGL)
 - Thickness: 12 mm
 - Colour/ Pattern: To CA's requirements from the following ranges:
 - Formica Group "Washroom Collection" range
 - Polyrey UK "Washroom Collection" range
 - Edge treatment: Square edges
4. Fasteners: Assembly manufacturer's angle brackets and stainless steel 'Slot & Secure' system screw fixed to rear of assemblies and to sawn s/w bearers within metal stud partition framing forming structural openings
5. Other requirements:
 - Access doors to be lockable
 - Fix all sanitary and other components to/ through assemblies using fixings recommended by assembly manufacturer

250A INSTALLATION

1. Programming: Do not install duct/ wall panels before building is weathertight, wet trades have finished their work, wall and floor finishes are complete, and the building is well dried out
2. Accuracy: Set out to ensure panels are plumb, level and accurately aligned
3. Modifications: Do not cut, plane or sand prefinished components except where shown on drawings
4. Fixing: Secure components using methods and fasteners shown on detail drawing(s). Prevent pulling away, bowing or other distortions to panels
5. Moisture and thermal movement: Make adequate allowance for future movement

Ω End of Section

K40 DEMOUNTABLE SUSPENDED CEILINGS

CLAUSES

2 TO BE READ WITH PRELIMINARIES/ GENERAL CONDITIONS.

TYPES OF CEILING SYSTEM

115A UNIT/ MODULAR SUSPENDED CEILING SYSTEM

1. Description: With K40/ 265A infill units
2. Standard: To BS EN 13964
3. Evidence of compliance: All ceilings kits to be CE marked. Submit Declaration of Performance (DoP)
4. Ceiling system manufacturer: Armstrong World Industries Ltd, Building Products Division, Internal Technical Sales, 38 Market Square, Uxbridge, Middlesex, UB8 1NG
5. Ceiling:
 - Infill units: As clause 265A
 - Ceiling module: 600 x 600 mm
 - Soffit height above finished floor level: As shown on ceiling layout drawing(s)
6. Grid:
 - Form: Interlocking
 - Exposure: Exposed
7. Access: Infill units fully demountable
8. Suspension system: As clause 250A
9. Perimeter trim: As clause 260A
10. Accessories: Edge battens as clause 255
11. Integrated services fittings: Luminaires, air grilles, diffusers and other services terminals as shown on M & E Services Consultant's drawing(s)
12. Other requirements: All tiles to be clipped.

115B UNIT/ MODULAR SUSPENDED CEILING SYSTEM

1. Description: With K40/ 265B infill units
2. Standard: To BS EN 13964.
3. Evidence of compliance: All ceilings kits to be CE marked. Submit Declaration of Performance (DoP)
4. Ceiling system manufacturer: Armstrong World Industries Ltd, Building Products Division, Internal Technical Sales, 38 Market Square, Uxbridge, Middlesex, UB8 1NG
5. Ceiling:
 - Infill units: As clause 265B
 - Ceiling module: 600 x 600 mm
 - Soffit height above finished floor level: As shown on ceiling layout drawing(s)
6. Grid:
 - Form: Interlocking
 - Exposure: Exposed
7. Access: Infill units fully demountable
8. Suspension system: As clause 250A
9. Perimeter trim: As clause 260A

10. Accessories: Edge battens as clause 255
11. Integrated services fittings: Luminaires, air grilles, diffusers and other services terminals as shown on M & E Services Consultant's drawing(s)
12. Other requirements: All tiles to be clipped.

115C UNIT/ MODULAR SUSPENDED CEILING SYSTEM

1. Description: With K40/ 265C infill units
2. Standard: To BS EN 13964
3. Evidence of compliance: All ceilings kits to be CE marked. Submit Declaration of Performance (DoP)
4. Ceiling system manufacturer: Armstrong World Industries Ltd, Building Products Division, Internal Technical Sales, 38 Market Square, Uxbridge, Middlesex, UB8 1NG
5. Ceiling:
 - Infill units: As clause 265C
 - Ceiling module: 600 x 600 mm
 - Soffit height above finished floor level: As shown on ceiling layout drawing(s)
6. Grid:
 - Form: Interlocking
 - Exposure: Exposed
7. Access: Infill units fully demountable
8. Suspension system: As clause 250A
9. Perimeter trim: As clause 260A
10. Accessories: Edge battens as clause 255
11. Integrated services fittings: Luminaires, air grilles, diffusers and other services terminals as shown on M & E Services Consultant's drawing(s)
12. Other requirements:
 - All tiles to be clipped
 - Provide timber battens notched over ceiling grid, with additional suspension hangers adjacent to each batten, to allow fixing of ceiling mounted cubicle curtain track

115E UNIT/ MODULAR SUSPENDED CEILING SYSTEM

1. Description: With K40/ 265E infill units
2. Standard: To BS EN 13964
3. Evidence of compliance: All ceilings kits to be CE marked. Submit Declaration of Performance (DoP)
4. Ceiling system manufacturer: Armstrong World Industries Ltd, Building Products Division, Internal Technical Sales, 38 Market Square, Uxbridge, Middlesex, UB8 1NG
5. Ceiling:
 - Infill units: As clause 265E
 - Ceiling module: 600 x 600 mm
 - Soffit height above finished floor level: As shown on ceiling layout drawing(s)
6. Grid:
 - Form: Interlocking
 - Exposure: Exposed
7. Access: Infill units fully demountable
8. Suspension system: As clause 250A
9. Perimeter trim: As clause 260A

10. Accessories: Edge battens as clause 255
11. Integrated services fittings: Luminaires, air grilles, diffusers and other services terminals as shown on M & E Services Consultant's drawing(s)
12. Other requirements:
 - All tiles to be clipped
 - Provide timber battens notched over ceiling grid, with additional suspension hangers adjacent to each batten, to allow fixing of ceiling mounted cubicle curtain track

GENERAL/ PERFORMANCE - NOT USED

COMPONENTS

250A SUSPENSION SYSTEM

1. Description: To K40/ 115A, K40/ 115B, K40/ 115C, K40/ 115E ceiling system
2. Manufacturer: Armstrong World Industries Ltd, Building Products Division, Internal Technical Sales, 38 Market Square, Uxbridge, Middlesex, UB8 1NG
 - Product reference: Trulok Prelude 15 TL exposed ceiling grid
3. Extent of system: Include all hangers, fixings, main runners, cross members, primary channels, perimeter trims, splines, noggings, clips, bracing, bridging, etc. necessary to complete the ceiling system and achieve specified performance
4. Top fixings: To suit structural soffit
5. Hangers: Ref BP A952 rigid suspension angles
6. Grid type: 15 mm wide steel T sections
 - Finish: Pre-coated fully polymerised polyester finish
 - Colour: Standard white

255A EDGE BATTENS

1. Description:
2. Material: Planed softwood to BS EN 942, class J10; moisture content at time of fixing: 15% ± 2%
 - Finished size: As shown on detail drawings
 - Finish (apply before ceiling grid is installed): 2 coats matt black emulsion

260A PERIMETER TRIMS

1. Description: To K40/ 115A, K40/ 115B, K40/ 115C, K40/ 115E ceiling system
2. Manufacturer: Armstrong World Industries Ltd, Building Products Division, Internal Technical Sales, 38 Market Square, Uxbridge, Middlesex, UB8 1NG
 - Product reference: Ref BPT 1932 HA perimeter angle trims, colour white
3. Fixings:
 - Fasteners: BZP raised head screws
 - Fixing centres (maximum): 450 mm

265A INFILL UNITS

1. Description: To K40/ 115A ceiling system
2. Manufacturer: Armstrong World Industries Ltd, Building Products Division, Internal Technical Sales, 38 Market Square, Uxbridge, Middlesex, UB8 1NG
 - Product reference: Dune eVo mineral fibre ceiling tiles with MicroLook edge, ref 5464 M
 - Sizes: 600 x 600 x 15 mm
 - Colour: White

3. Recycled content: Not applicable

265B INFILL UNITS

1. Description: To K40/ 115B ceiling system
2. Manufacturer: Armstrong World Industries Ltd, Building Products Division, Internal Technical Sales, 38 Market Square, Uxbridge, Middlesex, UB8 1NG
 - Product reference: Optima mineral fibre ceiling tiles with MicroLook edge, ref 2331 M
 - Sizes: 600 x 600 x 15 mm
 - Colour: White
3. Recycled content: Not applicable

265C INFILL UNITS

1. Description: To K40/ 115C ceiling system
2. Manufacturer: Armstrong World Industries Ltd, Building Products Division, Internal Technical Sales, 38 Market Square, Uxbridge, Middlesex, UB8 1NG
 - Product reference: Bioguard Plain mineral fibre ceiling tiles with MicroLook edge, ref 2224 M
 - Sizes: 600 x 600 x 15 mm
 - Colour: White
3. Recycled content: Not applicable

265E INFILL UNITS

1. Description: To K40/ 115E ceiling system
2. Manufacturer: Armstrong World Industries Ltd, Building Products Division, Internal Technical Sales, 38 Market Square, Uxbridge, Middlesex, UB8 1NG
 - Product reference: Bioguard Acoustic mineral fibre ceiling tiles with MicroLook edge, ref 2552 M
 - Sizes: 600 x 600 x 17 mm
 - Colour: White
3. Recycled content: Not applicable

EXECUTION

302 CONTROL SAMPLES

1. General: Complete areas as part of the finished work in the following locations: Ceiling system - K40/ 115A: one complete room;- K40/ 115B: one complete room;- K40/ 115C: one complete room;- K40/ 115E: one complete room.
2. Approval: Obtain before completing areas of similar work

305A SETTING OUT

1. General: Completed ceiling should present, over the whole of its surface exposed to the room below, a continuous and even surface, jointed (where applicable) at regular intervals
2. Infill and access units, integrated services: Fitted correctly and aligned
3. Edge/ perimeter infill units size (minimum): Unless shown otherwise on ceiling layout(s), half standard width or length
4. Corner infill units size (minimum): Half standard width and length
5. Grid: Position to suit infill unit sizes. Allow for permitted deviations from nominal sizes of infill unit
6. Infill joints and exposed suspension members: Straight, aligned and parallel to walls, unless specified otherwise

7. Suitability of construction: Give notice where building elements and features to which the ceiling systems relate are not square, straight or level

310 BRACING

1. General: Secure, with additional bracing and stiffening to give a stable ceiling system resistant to design loads and pressures

315 PROTECTION

1. Loading: Do not apply loads for which the suspension system is not designed
2. Ceiling materials: When necessary, remove and replace correctly using special tools and clean gloves, etc. as appropriate

320 TOP FIXING

1. Building structure: Verify suitability
2. Structural soffit: As shown on drawing(s)
 - Suitability to receive specified fixings: Evaluate and confirm.
3. Fixing generally: In accordance with BS EN 13964
4. Fixing to
 - Concrete: Drill and insert suitable expanding anchors
 - Aerated concrete: Fix through from the top of concrete units and provide a system of primary support channels
 - Structural steel: Drill, or use suitable proprietary clips/ adaptors
 - Metal roof decking: Fix to sides of liner tray corrugations
 - Timber: Fix to side of joists at least 50 mm from bottom edge. If ceiling system is intended for fire protection, fix into top third of joists
 - Hollow structural members: Submit fixing proposals

325A INSTALLING ANGLE/ STRAP HANGERS

1. Installation: Install vertical or near vertical, without bends or kinks. Do not allow hangers to press against fittings, services, or insulation covering ducts/ pipes
2. Obstructions: Where obstructions prevent vertical installation, either brace diagonal hangers against lateral movement, or hang ceiling system on an appropriate rigid sub-grid bridging across obstructions and supported to prevent lateral movement
3. Extra hangers: Provide as necessary to carry additional loads
4. Fixing: Do not use rivets for top fixing
5. Spacings: As shown on detail drawing(s)

330A INSTALLING EDGE BATTENS

1. Fixing: Firmly to perimeter wall or other building structure
 - Fasteners: Self tapping screws to metal stud partitions/linings or plugged and screwed to masonry backgrounds
 - Fixing centres (maximum): 600 mm to metal stud partitions/linings and 450 mm to masonry backgrounds

335 PERIMETER TRIMS

1. Jointing: Neat and accurate, without lipping or twisting.
 - External and internal corners: Mitre joints generally. Overlap joints at internal corners are not acceptable.
 - Intermediate butt joints: Minimize. Use longest available lengths of trim. Align adjacent lengths

2. Fixing: Fix firmly to perimeter wall, edge battens or other building structure
 - Fasteners: BZP raised head screws
 - Fixing centres: 450 mm

340 EXPOSED GRIDS

1. Grid fixings: Angle hangers
2. Main runners: Install level. Do not kink or bend hangers
 - Spliced joints: Stagger
 - Wire hangers passing through main runners: Use sharp bends and tightly wrapped loops
 - Angle/ strap hangers: Do not use rivets for bottom fixing
 - Angular displacement of long axis of one runner in relation to next runner in line with it: Not visually apparent
3. Cross members supported by main runners or other cross members: Install perpendicular to intersecting runners
4. Cross tees: Flat and coplanar with flanges of main runners after panel insertion
 - Cross tees over 600 mm long, cut and resting on perimeter trim: Provide an additional hanger
5. Holding down clips: Locate to manufacturer's recommendations
 - Fire protecting/ resisting ceiling systems: Use clip type featured in the fire test/ assessment

355A INSTALLING INFILL UNITS

1. General:
 - Perimeter infill units: Trimmed, as necessary, to fully fill space between last grid member and perimeter trim. Prevent subsequent movement
 - Perimeter infill units with tegular edges: Reform tegular edge(s) as necessary, reseal using brush applied 1:1 mix of PVA adhesive/ water and paint with infill unit manufacturer's touch up paint
 - Deeply textured infill units: Minimize variations in apparent texture and colour. In particular, avoid patchiness
2. Concealed grids: Install infill units uniformly, straight and aligned. Avoid dimension creep
 - Infill units around recessed luminaires and similar openings: Prevent movement and displacement

390 OPENINGS IN CEILING MATERIALS

1. General: Neat and accurate. To suit sizes and edge details of fittings. Do not distort ceiling system

395 INTEGRATED SERVICES

1. General: Position services accurately, support adequately. Align and level in relation to the ceiling and suspension system. Do not diminish performance of ceiling system
2. Small fittings: Support with rigid backing boards or other suitable means. Do not damage or distort the ceiling
 - Surface spread of flame rating of additional supporting material: Not less than ceiling material
3. Services outlets
 - Supported by ceiling system: Provide additional hangers
 - Independently supported: Provide flanges to support ceiling system

401 CEILING-MOUNTED LUMINAIRES

1. Support: Independent
 - Independently supported luminaires: Suspension adjusted to line and level of ceiling
 - Ceiling supported luminaires: Modifications and/ or extra support required: Not applicable.
2. Surface mounted luminaires: Units installed so that in event of a fire the designed grid expansion provision is not affected
3. Modular fluorescent recessed luminaires: Compatible with ceiling module. Extension boxes must not foul ceiling system
4. Recessed rows of luminaires: Provide flanges for support of grid and infill units, unless mounted above grid flanges. Retain in position with lateral restraint
5. Fire protecting/ resisting ceiling systems: Luminaires must not diminish protection integrity of ceiling system
6. Access: Provide access for maintenance of luminaires

411A MECHANICAL SERVICES

1. Fan coil units:
 - Inlet/ Outlet grilles: Trim ceiling grid and infill units to suit
 - Space beneath: Sufficient for ceiling system components
 - Suspension and connections: Permit accurate setting out and levelling of fan coil units
2. Air grilles and diffusers:
 - Setting out: Accurate and level
 - Linear air diffusers: Retain in place with lateral restraint. Provide flanges for support of grid and infill units
 - Grille/ Diffuser ceiling joints: Provide smudge rings and edge seals
3. Smoke detectors and PA speakers:
 - Ceiling infill units: Scribe and trim to suit
 - Independent suspension: Required
 - Flexible connections: Required

500 ELECTRICAL CONTINUITY AND EARTH BONDING

1. Inclusion in finished work: Not required

COMPLETION

520 USER INSTRUCTIONS

1. Contents: Include the following:
 - Correct methods for removing and replacing infill units and other components.
 - Cleaning methods and materials.
 - Recommendations for redecoration.
 - Ceiling systems intended for fire protection: Limitations placed on subsequent alterations and maintenance procedures, to ensure that their fire performance is not impaired
 - Maximum number, position and value of point loads that can be applied to ceiling system after installation.

530 SPARES

1. General: At practical completion, supply the following: 1 no box infill units for ceiling system K40/ 265A; K40/ 265B; K40/ 265C; K40/ 265E;.

Ω End of Section

L10 WINDOWS/ ROOFLIGHTS/ SCREENS/ LOUVRES

CLAUSES

2 TO BE READ WITH PRELIMINARIES/ GENERAL CONDITIONS.

GENERAL

110 EVIDENCE OF PERFORMANCE

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

120 PRECONSTRUCTION SURVEY

1. Procedure: Before starting work on designated items take site dimensions, record on shop drawings and use to ensure accurate fabrication
2. Designated items:
3. Windows

140A CONTROL SAMPLES

1. 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.
2. Designated items:
 - L10/ 330A Aluminium windows
 - L10/ 565 Glazed screen system

PRODUCTS

330A ALUMINIUM WINDOWS

1. Manufacturer: Technal, Albert Drive, Silkwood Park, Wakefield, WF5 9TG
 - Product reference: Technal FY65 Soleal Visible thermally insulated internally glazed windows
2. Finish as delivered: Polyester powder coating to BS 6496
 - Colour: To CA's requirements from manufacturer's full range
 - Film thickness: 40 microns
3. Glazing details: As section L40, clauses 370A and 650A
 - Beading: Internal
4. Fixing: Screwed to masonry reveal as clause 782
5. Other requirements:
 - Fixed lights internally glazed using captive gasket
 - Coupling mullions and transoms as required to composite windows
 - Windows to be manufactured and certificated to meet the requirements of BS 7950 and PAS24:2016 (to achieve RC2 when tested to BS EN 1627:2011)

460D ROOFLIGHTS

1. Manufacturer: Velux Company Ltd., Woodside Way, Glenrothes, Fife, KY7 4ND
 - Product reference: Longlight HVC

2. Type: Modular
3. Frame: Pultruded composite consisting fibreglass threads and 2 component polyurethane resin
 - Colour: To Architect's requirements from manufacturer's full range
4. Kerb: Secondary steelwork with plywood infill externally to receive insulation and single ply membrane and lined internally with plasterboard
5. Thermal performance (U-value maximum): 1.6 W/m²K
6. Glazing details: 30 mm double glazed units comprising 8 mm clear toughened outer pane, 16 mm airspace and 8.8 mm clear laminated low E inner pane
7. Other requirements: Motorised smoke venting module with actuator connected to fireman's switch
8. Fixing: Clamped to 102UB in accordance with manufacturer's recommendations
9. Accessories:
 - BCX vapour barrier connection strip
 - Power supply, actuator and all other ancillary items required to provide both motorised comfort and smoke ventilation
 - All required PPC aluminium flashings and trims to make weatherproof

491 SMOKE VENTS

1. Manufacturer: Bilco UK, 20 Park Farm Business Centre, Fornham St Genevieve, Bury St Edmunds, Suffolk, IP28 6TS
 - Product reference: Type ESW-50REM single leaf, pre-assembled smoke vent, 1488 x 1488 mm overall, complete with 305 mm high upstand kerb
2. Type: Flap
3. Controls: Linear actuator
4. Materials: Frame: Aluminium
 - Finish as delivered: Mill finish
5. Seals: Extruded EPDM rubber gasket
6. Guards: Not required
7. Typical U-value: 0.47 W/m²K
8. Fire/ smoke control performance: Not applicable
9. Accessories/ Special features: None
10. Fixing: Screw fixed

550A GLAZED METAL SCREENS

1. Manufacturer: [Planet Partitioning, 10 Woodway Court, Thursbay Road, Wirral International Park, Bromborough, Wirral, CH62 3PR]
 - Product reference: P20 Single Glazed Frameless Partition System
2. Strength Grade:
 - For glass screens not protecting a change in adjacent floor level <380mm:
 - BS5234 n/a to "all" glass partition screens
 - Nominal line load criteria of "accidental impact load" utilised
 - 0.36kN/m applied as short term load at 1100mm above FFL
 - Glass deflection limited to L/65 or 25mm, whichever is less under load
 - Maximum deflection and stress in accordance with the glass performance requirements of EN572/EN12150/EN12543/EN14179(where heat soaked)
 - Building regulations Part N(BS6262) + InsStucEng publication "structural use of glass in buildings"

- For glass screens protecting a change in adjacent floor level >380mm:
 - All level 01 & 02 screens to atrium designed to BS6180:2011 Barriers in and about Buildings.
 - Horizontal uniformly distributed line load 1100mm above FFL (Lateral deflection limit L/65 or 25mm, whichever is less relative to glass fixings)
 - Structural Glass based on line load and attendant UDL + point load 1.5kN/m
- 3. Sound Insulation: to EN ISO 10140-2 and ISO 717-1, 35dB (Rw)
- 4. Partition Height: As shown on drawing GCH-IBI-XX-XX-DR-A-321-0010, 0011 & 0012
- 5. Partition Abutments:
 - Head Detail: 27mm deep x 20mm wide Aluminium Channel (K201-K204 to suit)
 - Floor Detail: 27mm deep x 20mm wide Two Part Aluminium Channel.
 - Wall Abutments: 27mm deep x 20mm wide Two Part Aluminium Channel.
- 6. Framing: Extruded Aluminium Section
- 7. Glazing Junctions / Corners: Linea dry joint
- 8. Trims: PPC aluminium with fully welded mitred corners. See GCH-IBI-XX-XX-DR-A-321-0013
- 9. Glazing Type: Single, offset laminated glass.
- 10. Manifestation: To architects choice and in accordance with the requirements of Approved Document K.
- 11. Finishes/Colour: Polyester powder coated to full manufacturer's range

550B GLAZED METAL SCREENS

1. Manufacturer: [Planet Partitioning, 10 Woodway Court, Thursbay Road, Wirral International Park, Bromborough, Wirral, CH62 3PR]
 - Product reference: P20 Single Glazed Frameless Partition System
2. Strength Grade:
 - For glass screens not protecting a change in adjacent floor level <380mm:
 - BS5234 n/a to "all" glass partition screens
 - Nominal line load criteria of "accidental impact load" utilised
 - 0.36kN/m applied as short term load at 1100mm above FFL
 - Glass deflection limited to L/65 or 25mm, whichever is less under load
 - Maximum deflection and stress in accordance with the glass performance requirements of EN572/EN12150/EN12543/EN14179(where heat soaked)
 - Building regulations Part N(BS6262) + InsStucEng publication "structural use of glass in buildings"
 - For glass screens protecting a change in adjacent floor level >380mm:
 - All level 01 & 02 screens to atrium designed to BS6180:2011 Barriers in and about Buildings.
 - Horizontal uniformly distributed line load 1100mm above FFL (Lateral deflection limit L/65 or 25mm, whichever is less relative to glass fixings)
 - Structural Glass based on line load and attendant UDL + point load 1.5kN/m
3. Sound Insulation: to EN ISO 10140-2 and ISO 717-1, 40dB (Rw)
4. Partition Height: As shown on drawing GCH-IBI-XX-XX-DR-A-321-0010, 0011 & 0012
5. Partition Abutments:

- Head Detail: 27mm deep x 20mm wide Aluminium Channel (K201-K204 to suit)
 - Floor Detail: 27mm deep x 20mm wide Two Part Aluminium Channel.
 - Wall Abutments: 27mm deep x 20mm wide Two Part Aluminium Channel.
6. Framing: Extruded Aluminium Section
 7. Glazing Junctions / Corners: Linea dry joint
 8. Trims: PPC aluminium with fully welded mitred corners. See GCH-IBI-XX-XX-DR-A-321-0013
 9. Glazing Type: Single, offset laminated glass.
 10. Manifestation: To architects choice and in accordance with the requirements of Approved Document K.
 11. Door Set: Planet IsoPro, double glazed metal framed door leaf, 39dB Rw
 12. Ironmongery: To Architects Choice
 13. Finishes/Colour: Polyester powder coated to full manufacturer's range

550C GLAZED METAL SCREENS

1. Manufacturer: [Planet Partitioning, 10 Woodway Court, Thursbay Road, Wirral International Park, Bromborough, Wirral, CH62 3PR]
 - Product reference: P54 Double Glazed Frameless Partition System
2. Strength Grade:
 - For glass screens not protecting a change in adjacent floor level <380mm:
 - BS5234 n/a to "all" glass partition screens
 - Nominal line load criteria of "accidental impact load" utilised
 - 0.36kN/m applied as short term load at 1100mm above FFL
 - Glass deflection limited to L/65 or 25mm, whichever is less under load
 - Maximum deflection and stress in accordance with the glass performance requirements of EN572/EN12150/EN12543/EN14179(where heat soaked)
 - Building regulations Part N(BS6262) + InsStucEng publication "structural use of glass in buildings"
 - For glass screens protecting a change in adjacent floor level >380mm:
 - All level 01 & 02 screens to atrium designed to BS6180:2011 Barriers in and about Buildings.
 - Horizontal uniformly distributed line load 1100mm above FFL (Lateral deflection limit L/65 or 25mm, whichever is less relative to glass fixings)
 - Structural Glass based on line load and attendant UDL + point load 1.5kN/m
3. Sound Insulation: to EN ISO 10140-2 and ISO 717-1, 45dB (Rw)
4. Partition Height: As shown on drawing GCH-IBI-XX-XX-DR-A-321-0010, 0011 & 0012
5. Partition Abutments:
 - Head Detail : 27mm deep x 20mm wide Aluminium Channel (K201-K204 to suit)
 - Floor Detail: 27mm deep x 20mm wide Two Part Aluminium Channel.
 - Wall Abutments: 27mm deep x 20mm wide Two Part Aluminium Channel.
6. Framing: Extruded Aluminium Section
7. Glazing Junctions / Corners: Linea dry joint
8. Trims: PPC aluminium with fully welded mitred corners. See GCH-IBI-XX-XX-DR-A-321-0013
9. Glazing Type: Double, offset laminated glass.
10. Manifestation: To architects choice and in accordance with the requirements of Approved Document K.
11. Finishes/Colour: Polyester powder coated to full manufacturer's range

650A METAL LOUVRES

1. Glazed into curtain walling to allow for ductwork connection to allow smoke venting to fire fighting lobbies
2. Manufacturer: Renson Fabrications Ltd, Fairfax Units 1-5, Bircholt Road, Parkwood Industrial Estate, Maidstone, Kent, ME15 9SF
 - Product reference: 414THF thermally Insulated Window Louvre
3. Material: Aluminium
 - Finish as delivered: Polyester powder coated in colour to Architect's requirements from full RAL colour range
4. Fire resistance rating: Not applicable
5. Number of louvre banks: One
6. Louvre blade pitch and angle: 33.3 mm pitch, 60°
7. Blanking panels: Single skin aluminium insulated blanking plate to rear of louvres with cutouts to suit M & E Services Consultant's requirements
8. Accessories/ Other requirements: Stainless steel bird mesh
9. Fixing: Glazed into curtain walling H11/110A

650B METAL LOUVRES

1. Roof top plant screening
2. Manufacturer: Lang+Fulton, Newbridge Industrial Estate, Edinburgh, EH28 8PJ
 - Product reference: Italia 80i inverted
3. Material: Aluminium
 - Finish as delivered: Polyester powder coated in colour to Architect's requirements from full RAL colour range
4. Fire resistance rating: Not applicable
5. Number of louvre banks: One
6. Fixing: Supporting frame fixed to structural steelwork to Structural Engineer's details

650C METAL LOUVRES

1. Security rated to enw substation
2. Manufacturer: Sunray Engineering Ltd, Kingsnorth Industrial Estate, Wotton Road, Ashford, Kent, TN23 6LL
 - Product reference: SR2 ExluLouvre
3. Material: Steel
 - Finish as delivered: Polyester powder coated in colour to Architect's requirements from full RAL colour range
4. Fire resistance rating: Not applicable
5. Number of louvre banks: One
6. Accessories/ Other requirements: Stainless steel vermin mesh, flanged frame
7. Fixing: Fixed to masonry in accordance with manufacturer's recommendations in order to achieve LPS1175 SR2 rating

EXECUTION

710 PROTECTION OF COMPONENTS

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

750 BUILDING IN

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

765 WINDOW INSTALLATION GENERALLY

1. Installation: Into prepared openings
2. Gap between frame edge and surrounding construction
 - Minimum: 5 mm
 - Maximum: 8 mm
3. Distortion: Install windows without twist or diagonal racking

770 DAMP-PROOF COURSES IN PREPARED OPENINGS

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

782 FIXING OF ALUMINIUM FRAMES

1. Standard: As section Z20
2. Fasteners: 25 x 3 x 150 mm galvanized carbon steel frame cramps
 - Spacing: When not predrilled or specified otherwise, position fasteners not more than 250 mm from ends of each jamb, adjacent to each hanging point of opening lights, and at maximum 600 mm centres

810 SEALANT JOINTS

1. Sealant
 - Manufacturer: Adsheed Ratcliffe & Co Ltd, Derby Road, Belper, Derby, DE5 1WJ
 - Product reference: Arbosil 1090 low modulus silicone sealant
 - Colour: To CA's requirements from manufacturer's full range
 - Application: As section Z22 to prepared joints. Finish triangular fillets to a flat or slightly convex profile

815 JOINTS AROUND WINDOWS

1. General: Seal using impregnated foam tape and insulate using gun applied foam
2. Manufacturer: Tremco Illbruck Ltd, 3A Walton Road, Pattinson North, Washington, Tyne & Wear, NE38 8QA
 - Product reference: illbruck i3 system comprising:
 - External weather seal tape: TP600 Compriband 600 impregnated foam tape
 - Thermal and sound insulating foam: FM230 Pro Foam Window one part, moisture curing polyurethane expanding foam
 - Internal airtight seal: ME500 Duo flexible window membrane
3. Application of external weather seal tape:
 - Ensure surfaces to which tape is to be applied are free from irregularities
 - Loose particles: Remove.- Oily surfaces: Clean
 - Locate tape in required position between flat, parallel surfaces and at least 2mm from any edge, applying tape to horizontal sections before vertical sides
4. Gap behind tape: Apply insulating foam to approximately 80% of joint depth to allow for post-application expansion
5. Application of internal airtight seal:
 - Bond to frame using acrylic self-adhesive strip and to the reveal using butyl strip

- Further seal all membrane lap joints and areas of potential water ingress or air leakage with Tremco SP525 low modulus sealant
6. External weather seal where indicated on drawings: ME501 Duo Window Membrane HD

820 IRONMONGERY

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

Ω End of Section

L20 DOORS/ SHUTTERS/ HATCHES

CLAUSES

2 TO BE READ WITH PRELIMINARIES/ GENERAL CONDITIONS.

GENERAL

110 EVIDENCE OF PERFORMANCE

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

112 TIMBER PROCUREMENT

1. 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).
2. 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.
3. Certification scheme: Forest Stewardship Council (FSC)
 - Other evidence: None

115 FIRE RESISTING AND SMOKE CONTROL PEDESTRIAN DOORS/ DOOR ASSEMBLIES/ DOORSETS

1. CE marked fire resisting and smoke control pedestrian doorsets: To BS EN 16034 and in conjunction with BS EN 13241 and BS EN 14351-1 (and eventually prEN 14351-2)
2. Door products: As defined in BS EN 12519
3. 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/ door assembly/ doorset supplied will comply with the specified requirements for fire resisting and/or smoke control if tested to BS 476-22, BS EN 1634-1, BS EN 1634-3 or is CE marked to BS EN 16034. Specified values should not be a combination of both standards. Such certification must cover door and frame materials, glass and glazing materials and their installation, essential and ancillary ironmongery, hinges and seals
4. Components, assemblies or sets will be marked to the relevant CE marking European product standard (hEN), national product standard and/ or third party certification rating.

120 NON FIRE RESISTING PEDESTRIAN DOORS/ DOOR ASSEMBLIES/ DOORSETS

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

170 CONTROL SAMPLES

1. 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.
2. Designated items: 1 no FD30S single swing doorset with vision panel, complete with architraves, as clause L20/ 410A

PRODUCTS

410A WOOD DOORSETS

1. Description: Internal
2. Manufacturer: Principal Doorsets Ltd, Riverside Road, Pottington Business Park, Barnstaple, Devon, EX31 1NB
 - Product reference: SPL solid frame doorsets as detail drawing(s) and complying, unless stated otherwise, with DoH Health Technical Memorandum 58: Internal Doorsets
3. Door leaf:
 - Core: As shown on doorset schedule(s)
 - Thickness:
 - Generally: 45 mm
 - FD60/ FD60S fire resisting doorsets: 54 mm
 - Leaves incorporating observation panels: 54 mm
 - Facings: 0.7 mm thick laminate in colour(s) selected by CA from the following ranges:
 - Egger (UK) Ltd Uni Colours range
 - Formica Collection Colours range
 - Polyrey Papago plain colour range
 - Lippings: 6 mm hardwood exposed lippings all round
 - Finish as delivered: Clear lacquer (25% gloss level) with Hygienilac antimicrobial additive to hardwood lippings and glazing beads
4. Frame and architraves:
 - Wood species:
 - Frames:
 - To doorsets incorporating Principal core leaves: Finger jointed softwood as BS1186:Part 1 Appendix B with a density of not less than 500 kg/ m³ generally but hardwood with a density of not less than 640 kg/ m³ to FD60/ FD60S doorsets
 - To doorsets incorporating Basic (Homogeneous Solid Sheet) core leaves: Softwood with a density of not less than 450 kg/ m³ generally but hardwood with a density of not less than 640 kg/ m³ to FD60/ FD60S doorsets
 - Architraves: mdf
 - Finish as delivered: Principal Doorsets Ltd Principal Prime primer ready for painting
5. Preservative treatment: Not required
6. Glazing/ Infill details: Vision panels, where specified, to comprise:
 - Vision panels to non-fire resisting leaves glazed with 6 mm clear toughened glass secured using hardwood quirk beads as section L40/ 516
 - Vision panels to FD30/ FD30S fire resisting leaves glazed with 7 mm AGC Glass UK Ltd PYROBELite clear laminated fire resisting glass secured using hardwood quirk beads as section L40/ 517

- Vision panels to FD60/ FD60S fire resisting leaves glazed with 15 mm Pilkington UK Ltd Pyrostop clear fire resisting glass secured using hardwood quirk beads as section L40/ 518
 - Manifestation: Not required
7. Ironmongery: As ironmongery schedule(s) with hinges factory fitted
 8. Perimeter seals: As noted on detail drawing(s) installed in door leaf lippings
 9. Other requirements:
 - Apertures for vision panels within laminate faced leaves to have radiused corners to accommodate 11 mm radiused corner quirk beads
 - Arrises to frames and architraves to be splayed to a 2 mm flat plane
 - Square edged meeting stiles to leaf and a half and double leaf doorsets
 - Fire identification discs to HTM 58/ HTM 05-02
 - 2 mm thick Acrovyn door frame/ planted stop, architrave, door leaf protection and kick plates where noted on doorset/ ironmongery schedule(s) let into frames/ planted stops, architraves and door leaves
 - Acrovyn door edge protection to leading edge of door leaves where noted on doorset schedule(s)
 10. Fixing: Plugged and screwed to masonry or screw fixed to sawn s/w packs within metal stud partition with fixings concealed with wood pellets

412 WOOD DOORSETS

1. Description: Internal, sound reducing
2. Manufacturer: Principal Doorsets Ltd, Riverside Road, Pottington Business Park, Barnstaple, Devon, EX31 1NB
 - Product reference: Audio Door 38
3. Sound reduction: 38dB Rw
4. Door leaf:
 - Core: 'Audiodor' comprising tri-laminated chipboard (1 x 10 mm and 2 x 11 mm thick), 45 mm hardwood stiles, 90 mm hardwood rails, 6 mm mdf sub-facings and hardwood lippings, all to achieve Severe Duty rating to DD171
 - Thickness: 45 mm
 - Facings: 0.7 mm thick laminate selected by CA from either of the following ranges; - Formica Plain Colours range. - Polyrey Papago plain colour range
 - Lippings: 6 mm hardwood exposed lippings to long edges
 - Finish as delivered: Clear lacquer with Hygienilac antimicrobial additive to hardwood lippings
5. Frame and architraves:
 - Wood species:
 - Frames:: Sapele
 - Architraves: mdf
 - Finish as delivered: Prepared and primed ready for painting
6. Preservative treatment: Not required
7. Ironmongery: As ironmongery schedule(s) with hinges factory fitted
8. Perimeter seals: As noted on detail drawing(s) installed in door leaf lippings
9. Other requirements:
 - Arrises to frames and architraves to be splayed to a 2 mm flat plane
 - Square edged meeting stiles with astragal incorporating acoustic seal to leaf and a half and double leaf doorsets

- Lorient Polyproducts Ltd ref RP82 extruded aluminium threshold plate plugged and screwed through sheet floor finish to screed/slab or, as appropriate, screw fixed to h/w packing piece inserted between soft floor finishes
 - 2 mm thick Acrovyn door frame/ planted stop, architrave, door leaf protection and kick plates where noted on doorset/ ironmongery schedule(s) let into frames/ planted stops, architraves and door leaves
 - Acrovyn door edge protection to leading edge of door leaves where noted on doorset schedule(s)
10. Fixing: Plugged and screwed to masonry or screw fixed to sawn s/w packs within metal stud partition with fixings concealed with h/w pellets supplied loose by doorset manufacturer

480C DOORSETS

1. Description: External, steel
2. Manufacturer: Bradbury Group Ltd, Dunlop Way, Queensway Industrial Estate, Scunthorpe, North Lincolnshire, DN16 3RN
 - Product reference: M2M2 range outward opening external galvanised mild steel security (LPS 1175 Issue 7 SR2 compliant) doorsets
3. Finish as delivered: Polyester powder coated in colour to Architect's requirements from manufacturer's full range, to gloss level of 30% and dry film thickness of 40-50 microns
4. Fire performance: As doorset schedule(s)
5. Leaf: 66mm thick with no face seams, comprising 1.5 mm Zintec steel
6. Frame: Single rebate, 1.5 mm zinc coated steel
7. Hinges: Ball bearing dogbolt security ss butt hinges
8. Glazing/ Infill details:
 - Louvres: High security louvres as doorset schedule
 - Vision panel type/ size: Not required
 - Glass type: Not applicable
 - Manifestation: Not applicable
 - Beading: Not applicable
9. Ironmongery: As ironmongery schedule(s), factory fitted
10. Perimeter seals: As clause L10/ 815
11. Thermal performance (U-value maximum): Manufacturer's standard
12. Other requirements: Aluminium low profile threshold incorporating compressible neoprene seal, bedded on silicone sealant and plugged and screwed to slab using 32 mm long 12 gauge csk woodscrews
13. Fixing: Fully in accordance with manufacturer's installation instructions in order to achieve LPS 1175 Issue 7 SR2 rating

481 DOORSETS

1. Description: External, aluminium
2. Manufacturer: Technal, Albert Drive, Silkwood Park, Wakefield, WF5 9TG
 - Product reference: Technal Soleal PY 55 weathersealed thermally broken single action hinged with anti-fingertrap door hinge stiles
3. Finish as delivered: Polyester powder coated as section Z31
 - Colour: To CA's requirements from manufacturer's full range
 - Film thickness: 40 microns
4. Glazing/ Infill details: Insulating glass units to BS EN 1279, hermetically sealed and Kitemark certified, as section L40, clause 650A

- Manifestation: 50 mm silk screened white dots to meet the requirements of Building Regulations Approved Document K
 - Beading: Internal
5. Ironmongery:
 - Multipoint locking
 - Concealed delayed action overhead door closers
 - Flush bolts to slave leaf
 - Drained low profile accessible threshold
 - Modric ref SS6751BB stainless steel pull handles, back to back fixing
 - Modric 775 mm long (c/l of handles) x 25 mm dia stainless steel pull handles (style as SS6751)
 6. Perimeter seals: Double weatherseals to all edges of door leaf
 7. Thermal performance (U-value maximum): 1.8 W/m²K
 8. Other requirements: Doors to be manufactured and certified to meet the requirements of BS 7950 and PAS24:2016 (to achieve RC3 when tested to BS EN 1627:2011)
 9. Fixing: Doorset(s) to be incorporated into H11/110 curtain walling or stainless steel screws and fixings

490C AUTOMATIC DOORS

1. Description: As indicated on Architect's 321 series drawings
2. Type: Sliding
3. Manufacturer: ASSA ABLOY Entrance Systems Limited, Unit 9 Windmill Business Village, Sunbury-on-Thames, Middlesex, TW16 7DY
 - Product reference: ASSA ABLOY SL500 S, Slim framed beam mounted sliding door system with side screens as drawing GCH-IBI-XX-XX-DR-A-321-0020. Complete with ASSA ABLOY SL500 150mm operator providing automated operation of the sliding door leaves.
4. Safety in use: BS7036-0:2014 and BS-EN 16005:2012
5. Materials/ finishes: ASSA ABLOY slim flush glazed frame profile system PPC in colour to Architect's requirements
6. Glazing/ Infill details: 12mm laminated
 - Manifestation: As drawing GCH-IBI-XX-XX-DR-A-321-0100
7. Activation and control system: ASSA ABLOY Combined uni-directional and threshold presence detection entry/exit activator with keyed 6 mode operation selector and morning entry switch
 - Safety devices: ASSA ABLOY Combined uni-directional and threshold presence detection entry/exit activator
 - Breakout facility: Not required
8. Locking mechanism: Mechanical hook lock keyed both sides
9. Barriers: Full height slim framed sliding glass pocket screens
10. Other requirements: Monitored battery back up system to automatically open doors in event of power failure or signal from interfaced fire alarm system

490D AUTOMATIC DOORS

1. Description: To entrance lobby
2. Type: Single leaf sliding
3. Manufacturer: Total Glass Ltd, Overbrook Lane, Knowsley Business Park, Knowsley, Merseyside, L34 9FB

- Product reference: Powerslide thermally broken PAS24 certified automatic sliding door system
- 4. Safety in use: To BS EN 16005 and NHS Estates Safety Notice NHSE SN(96)02
- 5. Materials/ finishes:
 - Doors and screens: Thermally broken aluminium sections polyester powder coated in colour to Architect's requirements from manufacturer's full colour range
- 6. Glazing/ Infill details: Insulating glass units to BS EN 1279, hermetically sealed and Kitemark certified, as section L40, clause 650A
 - Manifestation: As drawing GCH-IBI-XX-XX-DR-A-321-0100
- 7. Operating system: Electro-mechanical sliding door operator with microprocessor control and silent brushless D.C. motor
- 8. Activation and control system:
 - 5 position mode switch (off, automatic, partial opening, exit only and hold open)
 - 2 Hoton SSR-3 dual relay output pedestrian door activation and monitored safety sensor to BS EN 16005: 2012
 - Hard wired stainless steel wall switch actuation
 - Satin stainless steel slimline jamb switch
 - Night/bank facility for first and last entrance
 - Safety devices:
 - Self-regulating safety system monitoring all door movements including closing force
 - Door auto-reverse function upon contact with obstruction during closing cycle (infrared threshold safety sensor)
 - Emergency break glass
 - Hotron 3H-IR14 monitored side screen safety sensor
 - Breakout facility: Not required
- 9. Locking mechanism: Electro-mechanical concealed within operator, 2 direct pull mag locks and sentinel hook locks to door sash as tested to ensure PAS24 compliance
- 10. Signs: 150 x 150 mm "Automatic door" sign in compliance with recommendations given in NHS Estates Safety Notice NHSE SN(96)02 to each face of door leaf
- 11. Barriers: Full height frameless pocket screens constructed from 10 mm toughened safety glass and patch fittings as required in compliance with BS EN 16005: 2012
- 12. Thermal performance (U-value maximum): 1.8 W/m²K
- 13. Other requirements:
 - Monitored battery back up system to automatically open doors in event of power failure or signal from interfaced fire alarm system
 - Any additional items required to ensure full compliance with BS EN 16005: 2012

547 SLIDING STACKING PANEL PARTITIONS

1. Description:
2. Manufacturer: Hufcor UK Ltd, Unit 3, Hawthorne Road, Castle Donington, Derby, DE74 2NJ
 - Product reference: Type 100 moveable wall system
3. Performance: **D-0-016a/ D-0-006c/ D-1-093a** - Weighted sound reduction Rw 57dB (42dB DnT,w on-site performance) to BS EN ISO 140-3.
D-0-050C/ D/ E - Non acoustic.
4. Operation: Manual
5. Track system:
 - Head track: Type 40 aluminium single point suspension, single parking

- Finish: Satin anodised
 - Parking position: End stacked, centred on track
6. Panels:
 - Construction: Complete with concealed aluminium trims, magnetic strips to vertical joints and mechanical acoustic seals
 - Finish as delivered: Hardwood veneered to CA's requirements from manufacturer's full range and lipped all round with 2 mm colour matching pvc lippings
 - Vision panels: Not required
 7. Pass doors: Not required
 8. Ironmongery: Operating handle
 9. Junctions/ Corners: Not applicable
 10. Glass manifestation: Not required
 11. Other requirements: 60kg/ m³ Rockwool ref RW3 mineral fibre acoustic baffle, foil faced both sides, between top track and fixing point

631 WALL ACCESS PANELS

1. Description:
2. Manufacturer: Profab Access Ltd, Units 45-48 Fourways, Carlyon Road Industrial Estate, Atherstone, Warwickshire, CV9 1LG
 - Product reference: 4000 series access panel with beaded frame
3. Performance: CE marked fire resisting and/ or smoke control inspection hatches to BS EN 16034
4. Resistance to fire: EI1:60
5. Smoke control: Class Sa
6. Door leaves/ frame construction:
 - Door leaves: Flush faced 1.2 mm thick electro-galvanised mild steel incorporating 6 mm thick GRG board and infilled with mineral wool
 - Door frame: 1.5 mm thick electro-galvanised mild steel rigid box section
 - Finish as delivered: Polyester powder coated in colour to CA's requirements from manufacturer's full range
7. Ironmongery:
 - Continuous piano hinge
 - Security lock
8. Self-closing: Not required
9. Operation: Manual
10. Fixing: Plugged and screwed to masonry or screw fixed to sawn s/w packs within metal stud partition
11. Other requirements:
 - Intumescent seals
 - Dust gaskets

EXECUTION

710 PROTECTION OF COMPONENTS

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

730 PRIMING/ SEALING

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

750 FIXING DOORSETS

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

760 BUILDING IN

1. General: Not permitted unless indicated on drawings

780 DAMP PROOF COURSES IN PREPARED OPENINGS

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

790A FIXING OF WOOD FRAMES

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

800 FIXING OF LOOSE THRESHOLDS

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

811 FIRE RESISTING AND SMOKE CONTROL DOORSETS, INDUSTRIAL, COMMERCIAL AND GARAGE DOORS

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

820A SEALANT JOINTS

1. Description: Aluminium/ steel doorsets
2. Sealant:
 - Manufacturer: Adsheed Ratcliffe & Co Ltd, Derby Road, Belper, Derby, DE5 1WJ
 - Product reference: Arbosil 1090 low modulus silicone sealant
 - Colour: To CA's requirements from manufacturer's full range
 - Application: As section Z22 to prepared joints. Triangular fillets finished to a flat or slightly convex profile

831 FIXING IRONMONGERY GENERALLY

1. Fasteners: Supplied by ironmongery manufacturer
 - Finish/ Corrosion resistance: To match ironmongery
2. Holes for components: No larger than required for satisfactory fit/ operation. Pre-drill screw holes and drive screws taking care not to burr the slot in the screwhead or scratch the surface finish
3. Mortices: Cut neatly so that hinges, flush bolts, locks and the like finish flush and tight to the surrounding woodwork
4. Adjacent surfaces: Undamaged
5. Moving parts: Adjusted, lubricated and functioning correctly at completion

840 FIXING IRONMONGERY TO FIRE RESISTING DOOR ASSEMBLIES

1. General: All items fixed in accordance with door leaf manufacturer's recommendations ensuring that integrity of the assembly, as established by testing, is not compromised
2. Holes for through fixings and components: Accurately cut

- 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

Ω End of Section

L30 STAIRS/LADDERS/WALKWAYS/HANDRAILS/BALUSTRADES

CLAUSES

2 TO BE READ WITH PRELIMINARIES/ GENERAL CONDITIONS.

PRELIMINARY INFORMATION/ REQUIREMENTS

130 SITE DIMENSIONS

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

COMPONENTS - NOT USED

INSTALLATION

620 PRIMING/ SEALING/ PAINTING

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

630 CORROSION PROTECTION OF DISSIMILAR MATERIALS

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

640 INSTALLATION GENERALLY

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

COMPLETION

920 DOCUMENTATION

1. Contents
 - Copies of structural design calculations/ test reports.
 - General product information.
 - Installation information.
 - Inspection and maintenance reports.
2. Number of copies: Two
3. Submission: Two weeks prior to date when Contractor expects work to be practically complete

Ω End of Section

L35 FIXED UTILITARIAN ACCESS SYSTEMS

CLAUSES

2 TO BE READ WITH PRELIMINARIES/ GENERAL CONDITIONS.

GENERAL

150A STAIR SYSTEM

1. Description: External to plantroom
2. Method of provision: Fabricated off site and assembled on site
3. Dimensions and details: As drawing GCH-IBI-XX-XX-DR-A-230-0004
4. Basic component material: Galvanized carbon steel

SYSTEM PERFORMANCE

214A COMPLETION OF DESIGN

1. Description: External plantroom stair
2. Requirement: Complete the detailed design to satisfy specified performance criteria and coordinate with the detailed design of related and adjacent work
 - Standards: Straight stairs and winders: In accordance with BS 5395-1
3. Additional requirements: None

PRODUCTS

330 LADDERS

1. Standard: In accordance with BS 5395-3.
2. Manufacturer:
 - Product reference:

FABRICATION

510 FABRICATION GENERALLY

1. Shop drawings: Submit

EXECUTION

620 EXECUTION GENERALLY

1. Structural members: Do not subject to nondesign loading. Do not modify, cut, notch or make unspecified holes
2. Frameworks: Assemble and brace, including temporary members required for installation
 - Temporary support: Do not use access systems as temporary support or strutting for other work
3. External durability of fastenings: Corrosion resistant material or with a corrosion resistant finish
4. Bolted joints
 - Contact between dissimilar metals: Avoid
 - Bolts and washers: Select types, sizes and quantities of fasteners or packings and spacings to retain supported components without distortion or loss of support
5. Welded joints
 - Standards

- Aluminium alloys: TIG or MIG welding to BS EN 1011-4
 - Carbon steel: Metal arc welding to BS EN 1011-1 and -2
 - Stainless steel: TIG welding to BS EN 1011-3
 - Surfaces to be jointed: Clean
 - Tack welds: Use only for temporary attachment
 - Traces of flux residue, slag and weld spatter: Remove
 - Surface of welds: Grind smooth
 - Joints: Fully bonded with no holes or cracks
6. Finished components
- Free: From distortion, cracks, burrs and sharp arrises
 - Corner junctions of identical sections: Mitre
 - Handrails: Smooth and continuous, with no sharp edges

660 ANCHORING

1. Fixing positions: Coordinate location of holding down bolts and wall fixings with services fixing positions
2. Edge distance and spacing (minimum):
 - Unless otherwise specified, locate anchors to permit the development of their full shear and pull out capacities
 - Report any locations where the size or position of the member will prevent the correct positioning of anchorages

COMPLETION

910 CLEANING

1. General: Clean surfaces and wipe down finishes

920 INSPECTION

1. Notice for inspection (minimum): 5 days

930 DOCUMENTATION

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

Ω End of Section

L40 GENERAL GLAZING

CLAUSES

2 TO BE READ WITH PRELIMINARIES/ GENERAL CONDITIONS.

GENERAL REQUIREMENTS

111 PRE-GLAZING

1. Preglazing of components: Permitted
2. Prevention of displacement: Submit details of precautions to be taken to protect glazing and compound/ seals during delivery and installation
3. Defective/ displaced glazing/ compound/ seals: Reglaze components in situ

112 VISION PANELS TO INTERNAL TIMBER DOORSETS

1. Pre-glazed by doorset manufacturer.

150 WORKMANSHIP AND POSITIONING GENERALLY

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

151 PREPARATION

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

152 PREPARATION

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

155 GLASS GENERALLY

1. Standards: To BS 952 and relevant parts of:
 - BS EN 572 for basic soda lime silicate glass.
 - BS EN 1096 for coated glass.
 - BS EN 1748-1 for borosilicate glass.
 - BS EN 1748-2 for ceramic glass.
 - BS EN 1863 for heat strengthened soda lime silicate glass.
 - BS EN 12150 for thermally toughened soda lime silicate safety glass.
 - BS EN 12337 for chemically strengthened soda lime silicate glass.
 - BS EN 13024 for thermally toughened borosilicate safety glass.
 - BS EN ISO 12543 for laminated glass and laminated safety glass.
2. Panes/ sheets: Clean and free from obvious scratches, bubbles, cracks, rippling, dimples and other defects

- Edges: Generally undamaged. Shells and chips not more than 2 mm deep and extending not more than 5 mm across the surface are acceptable if ground out

162 TOUGHENED LAMINATED GLASS

1. Manufacturer: Saint Gobain Glass UK, Weeland Road, Eggborough, East Riding of Yorkshire, DN14 0FD
 - Product reference: Stadip Protect Securit laminated safety glass comprising two sheets of 6 mm thick toughened glass bonded together with 1.52 mm thick polyvinyl (PVB) film interlayer

162A LAMINATED GLASS

1. Manufacturer: Saint Gobain Glass UK, Weeland Road, Eggborough, East Riding of Yorkshire, DN14 0FD
 - Product reference: Stadip Protect laminated safety glass comprising sheets of glass bonded together with polyvinyl (PVB) film interlayer
 - Overall thickness: Glass thickness: PVB film thickness
 - 6.8 mm 2 x 3 mm 0.76 mm
 - 7.5 mm 2 x 3 mm 1.52 mm
 - 8.8 mm 2 x 4 mm 0.76 mm
 - 9.5mm 2 x 4 mm 1.52 mm .

164 OPAQUE GLASS

1. Manufacturer: Saint Gobain Glass UK, Weeland Road, Eggborough, East Riding of Yorkshire, DN14 0FD
 - Product reference: Emalit Planiclear toughened glass with look-a-like coloured enamel to surface 4 in colour(s) to Architect's requirements from manufacturer's full range

164B THERMALLY TOUGHENED GLASS

1. Manufacturer: Saint Gobain Glass UK, Weeland Road, Eggborough, East Riding of Yorkshire, DN14 0FD
 - Product reference: Securit Toughened Planiclear clear toughened safety glass in thickness to provide containment to BS6180

165 HEAT-SOAKING OF THERMALLY TOUGHENED GLASS

1. Standard: To BS EN 14179-1 and -2
 - Holding period (minimum): 2 hours
2. Certified evidence of treatment: Submit
3. Designated locations: All thermally toughened glass

166 THERMAL STRESS IN GLAZING

1. Glass panes/ units: Must have adequate resistance to thermal stress generated by orientation, shading, solar control, construction or where opaque/coloured interlayers or enamel coatings are used

180 BEAD-FIXING WITH PINS

1. Pin spacing: Regular at maximum 150 mm centres, and within 50 mm of each corner
2. Exposed pin heads: Punched just below wood surface

TYPES OF GLAZING

370A BEAD FIXED INSULATING GLASS UNITS

1. Description: To aluminium windows

2. IGU: As clause: 650A
 - Perimeter taping: Do not use.
3. Surround/ bead: Aluminium
 - Preparation: Priming/ sealing not required
 - Bead location: Inside
 - Bead fixing: Proprietary clip fixing
4. Glazing system: Preformed gasket sections supplied by window manufacturer
5. Thermal performance (U-value maximum): As glazing insert
6. Glazing installation:
 - Insulating unit: Located centrally in surround using setting and location blocks
 - Gaskets and beads: Installed as recommended by frame manufacturer
 - Gasket fit at corners: Tight, without gaps
 - Drainage and ventilation holes: Unobstructed
7. Other requirements: Fabricated by single source supplier using glass obtained from same manufacturer

516 BEAD FIXED GLAZING TO VISION PANELS TO NON FIRE RESISTING INTERNAL TIMBER DOORSETS

1. Pane material: 6 mm clear toughened glass or, where noted on doorset schedules, 6.4 mm clear laminated safety glass incorporating white translucent PVB film interlayer as clause 162D
2. Surround/ bead: Timber door leaf/ hardwood quirk beads as section L20/ 410
 - Bead fixing: Pinned with 50 mm steel pins at equal but maximum 150 mm centres, maximum 50 mm in from ends of beads with fixing holes filled with Konig UK 140 tinted soft wax filler
3. Glazing system: Pyroplex Ltd ref 30049 glazing seal (colour: black)
4. Bed beads dry to glazing seal and fix securely.
5. Other requirements: Quirk beads to laminate faced leaves to have 10 mm radiused corners

517 BEAD FIXED GLAZING TO VISION PANELS TO FD30/ FD30S FIRE RESISTING AND 30DB RW SOUND RESISTING INTERNAL TIMBER DOORSETS

1. Pane material: 7 mm AGC Glass UK Ltd PYROBELite clear laminated fire resisting glass
2. Surround/ bead: Timber door leaf/ hardwood quirk beads as section L20/ 410
 - Bead fixing: Pinned with 50 mm steel pins at equal but maximum 150 mm centres, maximum 50 mm in from ends of beads with fixing holes filled with Konig UK 140 tinted soft wax filler
3. Glazing system: Sealed Tight Solutions STS 105GT intumescent seals
4. Bed beads dry to glazing seal and fix securely.
5. Other requirements: Quirk beads to laminate faced leaves to have 10 mm radiused corners

518 BEAD FIXED GLAZING TO VISION PANELS TO FD60/ FD60S FIRE RESISTING AND 35DB RW SOUND RESISTING INTERNAL TIMBER DOORSETS

1. Pane material: 15 mm Pilkington UK Ltd Pyrostop clear fire resisting glass
2. Surround/ bead: Timber door leaf/ hardwood quirk beads as section L20/ 410
 - Bead fixing: Pinned with 50 mm steel pins at equal but maximum 150 mm centres, maximum 50 mm in from ends of beads with fixing holes filled with Konig UK 140 tinted soft wax filler
3. Glazing system: Lorient Polyproducts Ltd System-36/15 PLUS flexible 'U' shaped intumescent gasket

4. Bed beads dry to glazing seal and fix securely.
5. Other requirements:
 - Vision panel aperture lined with 2 mm Intumescent Seals Ltd Therm-A-Line intumescent liner
 - Quirk beads to laminate faced leaves to have 10 mm radiused corners

521 BEAD FIXED OBSERVATION PANELS TO NON FIRE RESISTING INTERNAL TIMBER DOORSETS

1. Pane material: Intastop Ltd, Holly House, Holly Street, Doncaster, DN12 3QZ; Intaglaze Plus observation panel to dimensions shown on detail drawing(s), comprising 6 mm clear toughened glass each side, with single side operator and recessed stainless steel cover plate with square corners located on hanging stile side of leaf
2. Surround/ bead: Timber door leaf/ hardwood quirk beads as section L20/ 410
 - Bead fixing: Pinned with 50 x 2 mm steel pins at equal but maximum 150 mm centres, maximum 50 mm in from ends of beads with fixing holes filled with Konig UK 140 tinted soft wax filler
3. Glazing system: Pyroplex Ltd ref 30049 glazing seal (colour: black)
4. Bed beads dry to glazing seal and fix securely.
5. Other requirements: Quirk beads to laminate faced leaves to have 10 mm radiused corners

630 MANIFESTATION

1. Description: To all glazing areas required to comply with Building Regulations Part K
2. Design: Geometric pattern to Architect's requirements
 - Art work: To be prepared by contractor and submitted for approval
 - Media: Scale drawings
3. Technique: Applied film

650A INSULATED GLASS UNITS (IGUS)

1. Description:
2. Type: Double pane and gas fill
3. Standard: To BS EN 1279
4. Alternative specifications as referenced on elevations:
 - G(L) 29 mm insulating glass unit (G-value 0.37) comprising:
 - Inner pane: 6.8 mm clear laminated safety glass as clause 162A
 - Cavity: 16 mm, 90% argon filled
 - Outer pane: 6 mm Saint-Gobain Glass Securit Cool-lite SKN176 II toughened safety glass heatsoak tested to BSEN14179
 - G(L)A 31.5 mm insulating glass unit (G-value 0.37), (P4A Security Rating) comprising:
 - Inner pane: 9.5 mm clear laminated safety glass as clause 162A
 - Cavity: 16 mm, 90% argon filled
 - Outer pane: 6 mm Saint-Gobain Glass Securit Cool-lite SKN176 II toughened safety glass heatsoak tested to BSEN14179
 - G(L)B 31.5 mm insulating glass unit (G-value 0.37), (P4A Security Rating) comprising:
 - Inner pane: 13.5 mm clear toughened heat soak tested laminated glass as clause 162 to provide containment in accordance with BS6180
 - Cavity: 12 mm, 90% argon filled
 - Outer pane: 6 mm Saint-Gobain Glass Securit Cool-lite SKN176 II toughened safety glass heatsoak tested to BSEN14179

- G(L)C 31.5 mm insulating glass unit (G-value 0.37), (P4A Security Rating) comprising:
 - Inner pane: 9.5 mm clear laminated safety glass as clause 162A
 - Cavity: 16 mm, 90% argon filled
 - Outer pane: 6 mm Saint-Gobain Glass Securit Cool-lite SKN176 II toughened safety glass heatsoak tested to BSEN14179
 - G(L)D 32 mm insulating glass unit (G-value 0.37) comprising:
 - Inner pane: 10 mm clear toughened heat soak tested as clause 164B to provide containment in accordance with BS6180
 - Cavity: 16 mm, 90% argon filled
 - Outer pane: 6 mm Saint-Gobain Glass Securit Cool-lite SKN176 II toughened safety glass heatsoak tested to BSEN14179
 - G(S) 28 mm insulating spandrel panel unit (G-value 0.30) comprising:
 - Inner pane: 6 mm opaque toughened coloured enamelled glass as clause 164 with 75 mm mineral wool insulation to rear face and aluminium channel bonded to glass perimeter
 - Cavity: 16 mm, 90% argon filled.
 - Outer pane: 6 mm Saint-Gobain Glass Securit Cool-lite SKN176 II toughened safety glass heatsoak tested to BSEN14179
5. Spacer: Black continuous stainless steel black warm edge to EN1279 Part 3, maximum 0.065 PSI
6. Perimeter taping: Do not use
7. Perimeter seals:
- Resistant to UV light degradation on exposed edges
 - Compatible with structural, assembly and weather sealants
 - Ensure primary seal provides a minimum of 2 mm (+ or - 0.5mm) cover to perimeter spacer and is applied as a continuous bead in full contact with both panes of glass and perimeter spacer and such that there are no voids between primary and secondary seals. Ensure secondary seal provides a minimum of 3 mm (+ or - 0.5 mm) cover to perimeter spacer
8. Other requirements:
- Where inner and outer panes are toughened/ laminated, roller waves to be in same orientation
 - Fabricated by single source supplier using glass obtained from same manufacturer

Ω End of Section

M10 CEMENT BASED LEVELLING/WEARING SCREEDS

CLAUSES

2 TO BE READ WITH PRELIMINARIES/GENERAL CONDITIONS.

TYPES OF SCREED

111 BONDED CEMENT:SAND LEVELLING SCREEDS

1. Description: To dish shower areas
2. Substrate: In situ concrete slab
3. Screed construction: Fully bonded as clause 263 and laid to fall as clause 350 at maximum slope of 1:20
4. Thickness:
 - Minimum: 15 mm
 - Maximum: 50mm
5. Mix:
 - Cement:
 - Manufacturer: Ardex UK Ltd, Homefield Road, Haverhill, Suffolk, CB9 8QP
 - Product reference: Ardurapid 35 rapid setting and drying cement
 - Aggregates: Standards as clause 305
 - Proportions (cement:sand): 1:5
 - Admixture:
 - Manufacturer: Ardex UK Ltd, Homefield Road, Haverhill, Suffolk, CB9 8QP
 - Product reference: Ardion 100 incorporated into mix at a rate of 2.5 kg per 25 kg of Ardurapid 35
6. In situ crushing resistance (ISCR) category: A (3 mm maximum indentation)
7. Flatness/ Surface regularity class: 3 mm under a 1 m straightedge
8. Finish: Trowelled, as clause 540
 - To receive: 2.0 mm thick extra slip resistant vinyl sheet
9. Other requirements: None

134 PROPRIETARY QUICK DRYING LEVELLING SCREEDS

1. Description: Floating, on insulation
2. Substrate: In situ concrete floor slab
3. Screed manufacturer: Flowcrete UK Ltd, Flowcrete Business Park, Booth Lane, Moston, Sandbach, Cheshire, CW11 3QF
 - Product reference: Isocrete 'K' screed
4. Screed construction: Floating, as clause 291
 - Reinforcement for crack control: Proprietary polypropylene fibres as clause 398
5. Thickness:
 - Nominal: T.B.C
 - Minimum: T.B.C
6. Mix:
 - Cement: As clause 302
 - Aggregates: Standards as clause 305.

- Proportions: To manufacturer's recommendations: with proprietary additive as clause 332
- 7. In situ crushing resistance (ISCR) category: A (3 mm maximum indentation)
 - Mass of test weight: 4 kg
- 8. Flatness/ Surface regularity class: SR1
- 9. Finish: Trowelled, as clause 540
 - To receive: Floor finishes specified in section M50
- 10. Other requirements: Heated screed, as clause 428

GENERALLY/ PREPARATION

210 SUITABILITY OF SUBSTRATES

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

211 WORKING CONDITIONS

1. Before starting work ensure that:
 - Working areas are suitable for finishing work.
 - Windows and other openings are closed.
 - The internal temperature exceeds 10 deg C.
 - The mix temperature does not exceed 25 deg C.
 - The relative humidity of the concrete floor does not exceed 95%.

225 APPROVED FIRMS

1. Levelling screed type: M10/ 134 to be laid in accordance with the manufacturer's instructions by a firm licensed by Flowcrete UK Ltd

251 CONDUITS CAST INTO OR UNDER SCREEDS

1. 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.
2. Placing reinforcement: Mid depth between top of conduit and the screed surface
 - Width of reinforcement (minimum): 300 mm
3. Screed cover over conduit (minimum): 25 mm

255 PIPE DUCTS/ TRUNKING

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

263 FULLY BONDED CONSTRUCTION FOR SCREED TYPE M10/ 111

1. Removing mortar matrix: Shortly before laying screed, expose coarse aggregate over entire area of hardened base
2. Bonding Agent:

- Manufacturer: Flowcrete UK Ltd, Flowcrete Business Park, Booth Lane, Moston, Sandbach, Cheshire, CW11 3QF
 - Product reference: Isocrete M-Bond Extra solvent free epoxy resin dpm/ bonding agent
 - Application: Brush applied
3. Laying: Lay screed while bonding agent is still tacky to ensure a good bond

291 FLOATING CONSTRUCTION FOR SCREED TYPE M10/ 134

1. Insulation:
 - Type: CFC/ HCFC-free rigid urethane insulation core with composite foil facings both sides
 - Manufacturer: Kingspan Insulation Ltd, Pembridge, Leominster, Herefordshire HR6 9LA
 - Product reference: Kingspan Thermafloor TF70 floor insulation board
 - Thickness: T.B.C
 - Installation: Lay in a staggered pattern with tight butt joints and in accordance with any recommendations of the underfloor heating system manufacturer
2. Separation joints: Form against walls and columns using strips of polystyrene, except where thin vinyl skirtings are used, when a trowel cut joint is to be formed
3. Slurry:
 - Type: Neat cement
 - Apply on to insulation and lay screed whilst slurry is still wet.
4. Reinforcement at day joints: As clause 393
5. Laying screed: Lay screed in two layers with bottom layer slightly wetter than usual to ensure full compaction around underfloor heating cables/ pipes

BATCHING/ MIXING

302 CEMENTS

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

305 AGGREGATES

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

312 BATCHING OF LEVELLING SCREED TYPE M10/ 134

1. Mix proportions: Specified by volume
2. Batch by volume: On the basis of previously established weight:volume relationships of the particular materials. Use accurate gauge boxes. Allow for bulking of damp sand

313 BATCHING OF LEVELLING SCREED TYPE M10/ 111

1. Batch by weight.

331 MIXING

1. Admixtures: Do not use except where specified
2. Water content: Minimum necessary to achieve full compaction, low enough to prevent excessive water being brought to surface during compaction

3. Mixing: Mix materials thoroughly to uniform consistency in a suitable forced action mechanical mixer. Mixes other than no-fines must be mixed in a suitable forced action mechanical mixer. Do not use a free fall drum type mixer
4. Consistency: Use while sufficiently plastic for full compaction

332 PROPRIETARY ADDITIVE TO SCREED TYPE M10/ 134

1. Manufacturer: Flowcrete UK Ltd, Flowcrete Business Park, Booth Lane, Moston, Sandbach, Cheshire, CW11 3QF
 - Product reference: Isocrete K-additive, coloured black to aid identification and factory blended and batched into individual sachets of accurate weight to suit the size of the screed batch

335 IN SITU CRUSHING RESISTANCE (ISCR)

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

341 ADVERSE WEATHER

1. Frost damage: Take adequate precautions to prevent. Do not use frozen materials or lay mixes on frozen or frost covered surfaces
2. Sand heaps: Cover to keep out frost and, in severe freezing conditions, provide heated enclosure to prevent sand pockets forming
3. Storage of materials: Store cement and proprietary additives above freezing point
4. Screeds surface temperature: Maintain above 5°C for a minimum of four days after laying
5. Hot weather: Prevent premature setting or drying out

LAYING

345 LEVEL OF SCREED SURFACES

1. Permissible deviation: (allowing for thickness of coverings) ± 7 mm from datum.

350 SCREEDING TO FALLS

1. Minimum screed cover: Maintain at the lowest point
2. Falls: Gradual and consistent
 - Gradient (minimum): As detail drawing

355 FLATNESS/ SURFACE REGULARITY OF FLOOR SCREEDS

1. Standard: In accordance with BS 8204-1, Table 5
2. Test: In accordance with BS 8204-1, Annex C
3. Sudden irregularities: Not permitted

375 COMPACTION OF SCREEDS

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

376 COMPACTION OF PROPRIETARY SCREEDS

1. Compact thoroughly over entire area using methods recommended by manufacturer.

393 GENERAL REINFORCEMENT

1. Steel fabric: To BS 4483
 - Type: D49

2. Installation:

- In accordance with BS 8204-1.
- Place at approximately mid-depth within screed and lap edges minimum 100 mm. Tie securely with steel wire. Continue through daywork joints.
- Corners: Avoid a four layer build up

398 PROPRIETARY SCREED REINFORCEMENT

1. Manufacturer: Flowcrete UK Ltd, Flowcrete Business Park, Booth Lane, Moston, Sandbach, Cheshire, CW11 3QF
 - Product reference: Isocrete PP polypropylene fibres

399 PROPRIETARY SCREED MESH REINFORCEMENT

1. Manufacturer: Flowcrete UK Ltd, Flowcrete Business Park, Booth Lane, Moston, Sandbach, Cheshire, CW11 3QF
 - Product reference: Isocrete Glass Fibre mesh

428 HEATED SCREEDS

1. Substrate slab: Irregularities not permitted
2. Screed bays, movement joints and other joints: Coordinate with heating circuits
3. Heating elements: Secure properly. Prevent displacement
4. Screed laying: Compact thoroughly around heating elements. Do not damage them

440 CRACK INDUCING GROOVES IN LEVELLING SCREEDS

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

FINISHING/CURING

510 FINISHING GENERALLY

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

540 TROWELLED FINISH TO LEVELLING SCREEDS

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

650 CURING

1. General: Prevent premature drying. Immediately after laying, protect surface from wind, draughts and strong sunlight. As soon as screed has set sufficiently, closely cover with polyethylene sheeting
2. Curing period (minimum): Keep polyethylene sheeting in position for: 7 days.
3. Drying after curing: Allow screeds to dry gradually. Do not subject screeds to artificial drying conditions that will cause cracking or other shrinkage related problems

Ω End of Section

M40 STONE/ CONCRETE/ QUARRY/ CERAMIC TILING/ MOSAIC

CLAUSES

2 TO BE READ WITH PRELIMINARIES/ GENERAL CONDITIONS.

TYPES OF TILING/ MOSAIC

114 TILING TO

1. Description: Ground floor main entrance
2. Tiles: Porcelain stoneware
 - Manufacturer/ Supplier: Domus Tiles Ltd, 3 Molesey Business Centre, Central Avenue, West Molesey, Surrey, KT8 2QZ
 - Product reference: Flow 2.0 porcelain floor tiles
 - Colour: DRFW 08
 - Finish: Natural
 - Size: 592 x 592 mm
 - Thickness: 8.5mm
 - Slip potential:
 - Slip resistance value (SRV) (minimum)/ Pendulum test value (PTV) (minimum) to BS EN 13036-4 or BS EN 14231 (natural stone only): Manufacturer's standard
 - Surface roughness (Rz) (minimum) to BS 1134: Manufacturer's standard
 - SlipSTD class: Not Applicable
 - Recycled content: Not applicable
3. Background/ Base: Cement:sand rendering M10/134
 - Preparation: Manufacturers recommended bonding agent
4. Intermediate substrate: Not required
5. Bedding: Thick bed/ solid bed as clause 715
 - Reinforcement: Not applicable
 - Adhesive to BS EN 12004: Norcros Adhesives Ltd, BAL PTB Flexible (grey) polymer modified, rapid-setting, water and frost-resistant floor tile adhesive
6. Joint width: 3 mm
7. Grout: Norcros Adhesives Ltd, BAL Supercolour Wide Joint Grout with BAL Admix GT1 polymer admixture
 - Type/ classification: CG2(F)
8. Movement joints: As clause 815 at perimeters including abutments with skirtings, around columns and other structural features and where specifically shown on layout drawing(s)
9. Accessories: None

GENERAL

210 SUITABILITY OF BACKGROUNDS/ BASES

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

- Gypsum plaster: 4 weeks
3. New base drying times (minimum)
 - Concrete slabs: 6 weeks
 - Cement:sand screeds: 3 weeks

260A CONTROL SAMPLES

1. General: Complete sample areas, being part of finished work, in approved locations
 - Approval of appearance: Obtain before proceeding
2. Floor covering slip resistance testing: As clause 910

PREPARATION

370 NEW IN SITU CONCRETE

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

390 PLASTERBOARD BACKGROUNDS

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

FIXING

510 FIXING GENERALLY

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

530B SETTING OUT

1. 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
2. Cut tiles: Minimize number, maximize size and locate unobtrusively
3. Joints in adjoining floors and walls: Align
4. Joints in adjoining floors and skirtings: Align
5. Movement joints: Where locations are not indicated, submit proposals
6. Setting out of M40/114 : Drawing references: T.B.C : Drawing references:

550 FLATNESS/ REGULARITY OF TILING/ MOSAICS

1. Sudden irregularities: Not permitted
2. Deviation of surface: Measure from underside of a 2 m straightedge with 3 mm thick feet placed anywhere on surface. The straightedge should not be obstructed by the tiles and no gap should be greater than 6 mm, i.e. a tolerance of: ± 3 mm

560 LEVEL OF TILING ACROSS JOINTS

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

590 COVED TILE SKIRTINGS

1. Sequence: Bed solid to wall before laying floor tiles
2. Bedding: 1:4 cement:sand mortar

715 ADHESIVE BEDDING - THICK BED/ SOLID-BED FLOORS

1. Application: Apply adhesive to dry base in areas up to 1m² using a BAL large format trowel. For porous bases, apply a skim coat of adhesive first and comb remaining adhesive while skim coat is still wet
2. Tiling: Fill any depressions (ribbed, keyed profiles, etc) to backs of tiles with adhesive. Press tiles firmly into position with a twisting/ sliding action ensuring that as far as possible no voids are left beneath the tiles

MOVEMENT JOINTS/ GROUTING/ COMPLETION

815A SEALANT MOVEMENT JOINTS

1. Joints: Extend through tiles and bedding to base/ background. Centre over joints in base/ background
 - Width: 6 mm
2. Sealant: BAL Microseal silicone sealant
 - Colour: To match colour of grout
 - Preparation and application: As section Z22

816 SUITABILITY OF MOVEMENT JOINTS

1. General: Before commencing application of sealant, check that:
 - Joint dimensions are within limits specified for the sealant.
 - Surfaces are smooth and undamaged.
2. Preparatory work which must be done before assembly of the joints has been carried out.

817 PREPARING MOVEMENT JOINTS

1. Surfaces to which sealant must adhere: Clean using methods and materials recommended by sealant manufacturer
2. Temporary coatings, tapes, loosely adhering material, dust, oil, grease and other contaminants which may affect bond: Remove
3. Joints: Keep clean and protect from damage until sealant is applied
4. Backing strip, bond breaker, primer: Types recommended for the purpose by sealant manufacturer
5. Application of backing strips and/ or bond breaker tape: Insert into clean joints leaving no gaps. If the adhesive used to fix the tiles is BAL Flex or BAL Fastflex, ensure that backing strip and/ or tape prevent contact between silicone sealants and adhesive
6. Protection: Cover adjacent surfaces with masking tape to prevent staining and protect surfaces which would be difficult to clean if smeared with primer or sealant

818 APPLYING SEALANTS

1. General: Use equipment and methods recommended by sealant manufacturer and apply within recommended application life of primer and sealant, and within recommended air and substrate temperature ranges

2. Adverse conditions: Do not apply to damp surfaces (unless recommended otherwise), to surfaces affected by ice or snow or during inclement weather. Do not heat joints to dry or raise temperature
3. Application: Fill joints completely, leaving no gaps, excluding all air and ensuring firm adhesion of sealant to required joint surfaces. Tool sealant to a neat, slightly concave profile
4. Protect until cured.

880 GROUTING

1. Sequence: Grout when bed/ adhesive has set sufficient to prevent disturbance of tiles
2. Joints: 6 mm deep (or depth of tile if less). Free from dust and debris
3. Grouting: Fill joints completely, tool to approved profile, clean off surface. Leave free from blemishes
4. Polishing:
 - When BAL Grout has been used polish wall tiling with a dry cloth when grout is hard.
 - When BAL SupergROUT has been used polish wall tiling with a damp cloth or sponge before the grout has set

885 COLOURED GROUT

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

PERFORMANCE

910 PENDULUM FLOOR COVERING SLIP RESISTANCE TESTING

1. Natural stone floor covering(s) to be tested: M40/ 114.
2. Testing authority: An approved laboratory
3. Test: To BS EN 14231
 - Floor covering condition: Dry and wet
 - Witnessing/ Certification: Arrange for tests to be witnessed/ certified by: Project Manager.
 - Report: Submit in addition to the requirements of the standard include:
 - Location of the site and a drawing showing the positions of the tests.
 - Description of the surface tested and its condition.
 - Slider material used.
 - PTV at each position tested.
 - Temperature of the test surface.

Ω End of Section

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

CLAUSES

2 TO BE READ WITH PRELIMINARIES/ GENERAL CONDITIONS.

TYPES OF COVERING

151G SHEETING IN SPECIAL WET AREAS

1. Description: Vinyl
2. Location: Where shown on layout drawing(s)
3. Base: New power floated concrete slab as section E05/ 315, power ground as section E41/ 415
 - Preparation: Apply F Ball & Co Ltd Stopgap P131 general purpose neoprene primer and min 3 mm thick Stopgap 300 smoothing underlayment to power floated concrete slab prior to application of adhesive
4. Fabricated underlay: Not applicable
5. Flooring roll: Homogeneous PVC to BS EN 649
 - Manufacturer: Forbo Flooring UK Ltd, PO Box 1, Kirkcaldy, Fife, KY1 2SB
 - Product reference: Surestep vinyl sheet flooring
 - BS EN ISO 10874 class: 34/ 43
 - Slip potential:
 - Slip resistance value (SRV) (minimum)/ Pendulum test value (PTV) (minimum) to BS 7976-1, -2 and -3: 36 wet
 - Surface roughness (Rz) (minimum) to BS 1134: 20 micrometres
 - Recycled content: Contractor's choice
 - Width: 2000 mm
 - Thickness: 2.0 mm
 - Colour/ pattern: To CA's requirements from manufacturer's full range
6. Adhesive (and primer if recommended by manufacturer): As clause 735
7. Seam welding: Hot welding with complementary coloured rod
8. Accessories:
 - Form 100 mm high self-coved skirtings with 100 mm toe by carrying a separate piece of sheeting as clause 151G over cove former and vertically up face of wall. Fix skirting with Styccobond F60 adhesive and hot weld joints, all as clause 773B
 - Form 120 mm wide shower threshold around perimeter of dished shower floor by carrying a separate piece of sheeting as clause 151G over shower threshold as clause 745A
9. Finishing: As clause 820B
10. Other requirements: None

151H SHEETING IN SPECIAL WET AREAS

1. Description: Vinyl
2. Location: Where shown on layout drawing(s)
3. Base: New power floated concrete slab as section E05/ 315, power ground as section E41/ 415
 - Preparation: Apply F Ball & Co Ltd Stopgap P131 general purpose neoprene primer and min 3 mm thick Stopgap 300 smoothing underlayment to power floated concrete slab prior to application of adhesive

4. Fabricated underlay: Not applicable
5. Flooring roll: Homogeneous PVC to BS EN 649
 - Manufacturer: Forbo Flooring UK Ltd, PO Box 1, Kirkcaldy, Fife, KY1 2SB
 - Product reference: Safestep vinyl sheet flooring
 - BS EN ISO 10874 class: 34/ 43
 - Slip potential:
 - Slip resistance value (SRV) (minimum)/ Pendulum test value (PTV) (minimum) to BS 7976-1, -2 and -3: 36 wet
 - Surface roughness (Rz) (minimum) to BS 1134: 20 micrometres
 - Recycled content: Contractor's choice
 - Width: 2000 mm
 - Thickness: 2.0 mm
 - Colour/ pattern: To CA's requirements from manufacturer's full range
6. Adhesive (and primer if recommended by manufacturer): As clause 735
7. Seam welding: Hot welding with complementary coloured rod
8. Accessories:
 - Form 100 mm high self-coved skirtings with 100 mm toe by carrying a separate piece of sheeting as clause 151H over cove former and vertically up face of wall. Fix skirting with Styccobond F60 adhesive and hot weld joints, all as clause 773B
 - Form 120 mm wide shower threshold around perimeter of dished shower floor by carrying a separate piece of sheeting as clause 151H over shower threshold as clause 745A
9. Finishing: As clause 820B
10. Other requirements: None

152 SHEETING

1. Description: Linoleum
2. Location: Where shown on layout drawing(s)
3. Base: New power floated concrete slab as section E05/ 315, power ground as section E41/ 415
 - Preparation: Apply F Ball & Co Ltd Stopgap P131 general purpose neoprene primer and min 3 mm thick Stopgap 300 smoothing underlayment to power floated concrete slab prior to application of adhesive
4. Fabricated underlay: Not applicable
5. Flooring roll: Linoleum to BS EN ISO 24011
 - Manufacturer: Forbo Flooring UK Ltd, PO Box 1, Kirkcaldy, Fife, KY1 2SB
 - Product reference: Marmoleum Real, Dual, Fresco and Striato linoleum sheet flooring
 - BS EN ISO 10874 class: 23/ 34/ 42
 - Slip potential:
 - Slip resistance value (SRV) (minimum)/ Pendulum test value (PTV) (minimum) to BS 7976-1, -2 and -3: 50-60 dry, typical
 - Surface roughness (Rz) (minimum) to BS 1134: 13-18 micrometres, typical
 - Recycled content: 43%
 - Width: 2000 mm
 - Thickness: 2.5 mm
 - Colour/ pattern: To CA's requirements from manufacturer's full range

6. Adhesive (and primer if recommended by manufacturer): F Ball & Co Ltd, Styccobond F54 adhesive
7. Seam welding: Seam welding using complementary Forbo Flooring UK Ltd, Marmoweld MC welding rod
8. Accessories: Form 100 mm high self coved skirtings with 100 mm toe by carrying a separate piece of sheeting over cove former and vertically up face of wall to skirting capping. Fix skirting with Styccobond F60 adhesive and hot weld joints, all as clause 772A
9. Finishing: As clause 820A
10. Other requirements: None

152A SHEETING

1. Description: Linoleum antistatic
2. Location: Where shown on layout drawing(s)
3. Base: New power floated concrete slab as section E05/ 315, power ground as section E41/ 415
 - Preparation: Apply F Ball & Co Ltd Stopgap P131 general purpose neoprene primer and min 3 mm thick Stopgap 300 smoothing underlayment to power floated concrete slab prior to application of adhesive
4. Fabricated underlay: Not applicable
5. Flooring roll: Linoleum to BS EN 100 015
 - Manufacturer: Forbo Flooring UK Ltd, PO Box 1, Kirkcaldy, Fife, KY1 2SB
 - Product reference: Marmoleum Ohmex linoleum sheet flooring
 - BS EN ISO 10874 class: 23/ 34/ 42
 - Slip potential:
 - Slip resistance value (SRV) (minimum)/ Pendulum test value (PTV) (minimum) to BS 7976-1, -2 and -3: 50-60 dry, typical
 - Surface roughness (Rz) (minimum) to BS 1134: 13-18 micrometres, typical
 - Recycled content: 43%
 - Width: 2000 mm
 - Thickness: 2.5 mm
 - Colour/ pattern: To CA's requirements from manufacturer's full range
6. Adhesive (and primer if recommended by manufacturer): Eurocol 041SC static conductive primer, roller applied to base (including top surface of copper strips) at rate of 7m²/litre. Allow to dry completely. Adhesive: Eurocol 615 Eurostar Lino EL solvent free very low Emission Conductive Adhesive, V-notched trowel applied
7. Seam welding: Seam welding using complementary Forbo Flooring UK Ltd, Marmoweld MC welding rod
8. Accessories: Form 100 mm high self coved skirtings with 100 mm toe by carrying a separate piece of sheeting over cove former and vertically up face of wall to skirting capping. Fix skirting with Styccobond F60 adhesive and hot weld joints, all as clause 772A Electrical grounding: Copper strip(s), 10mm wide fixed to base using Eurocol 512SC static conductive adhesive, not less than on strip for each 36m² of floor area. Link to ground connection(s) supplied by others. Contact Forbo Flooring for further details
9. Finishing: As clause 820A
10. Other requirements: None

160D VINYL/ ACRYLIC SHEET WALLCOVERING

1. Location: Where shown on layout drawing(s)
2. Base: New plasterboard
 - Preparation: None

3. Wallcovering:
 - Manufacturer: Construction Specialties (UK) Ltd, 1010 Westcott Venture Park, Westcott, Aylesbury, Bucks, HP18 0XB
 - Product reference: Acrovyn high impact vinyl/ acrylic sheeting
 - Recycled content: None permitted
 - Sheet size: 2440 x 1220 mm
 - Thickness: 2.0 mm
 - Colour/ pattern: To CA's requirements from manufacturer's full range
4. Adhesive (and primer if recommended by manufacturer): Construction Specialties (UK) Ltd, Acrovyn acrylic adhesive. Prime porous surfaces with Construction Specialties (UK) Ltd Acrovyn acrylic adhesive primer
5. Accessories: None
6. Other requirements: None

161A PVC SHEET WALLCOVERING

1. Location: Where shown on layout drawing(s)
2. Base: New plasterboard
 - Preparation: Ensure substrate is within manufacturer's recommended tolerance of +/- 3 mm under a 2 m straightedge
3. Sheeting:
 - Manufacturer: Altro Ltd, 48 Pinbush Road, South Lowestoft Industrial Estate, Lowestoft, Suffolk, NR33 7NL
 - Product reference: Whiterock Satins (W136/ 1037) extruded EU grade pvc sheet
 - Recycled content: None permitted
 - Sheet size:
 - W103: 2500 x 1220 mm
 - W104: 3000 x 1220 mm
 - Thickness: 2.5 mm
 - Colour/ pattern: To CA's requirements from manufacturer's full range
4. Adhesive (and primer if recommended by manufacturer): Altro Ltd, Altrofix W139 (ref A814) 2 part polyurethane adhesive (ref 915). Prime/ seal porous surfaces with diluted PVA (1:10) or Altro Primer Seal (ref AGCPNF/ 01)
5. Seam welding: Hot welding with complementary coloured rod
6. Accessories:
 - Horizontal junction with skirtings: Align face of skirting with pvc sheet wallcovering using pvc infill section (ref WSBU 200) extending from top of skirting cove former to 25 mm above junction and hot weld joint
 - Vertical abutments with architraves, window frames etc: Sealed with white silicone sealant (ref A802)
 - Internal and external corners: Thermo-formed to a pencil round on site
7. Finishing: Apply Whiterock anti-static solution (ref A809) to all surfaces at completion of installation
8. Other requirements: Finished coverings: Accurately fitted, tightly jointed, securely bonded, smooth and free from rippling, scratches, adhesive marks and stains

170B CARPETING

1. Location: Where shown on layout drawing(s)
2. Base: New power floated concrete slab

- Preparation: Apply F Ball & Co Ltd Stopgap P131 general purpose neoprene primer and min 3 mm thick Stopgap 300 smoothing underlayment to power floated concrete slab prior to application of adhesive
- 3. Fabricated underlay: Not applicable
- 4. Carpet:
 - Manufacturer: Forbo Flooring UK Ltd, PO Box 1, Kirkcaldy, Fife, KY1 2SB
 - Product reference: Tessera Layout, entrance flooring
 - Type: Tufted
 - BS EN 1307 classification:
 - Levels of use class: 33
 - Luxury rating class: LC3
 - Additional performance properties to BS EN 1307: Commercial Heavy
 - Recycled content: None permitted
 - Width: 2000 mm
 - Colour/ pattern: To CA's requirements from manufacturer's full range
- 5. Carpet adhesive (and primer if recommended by manufacturer): F Ball & Co Ltd, Styccobond F3 adhesive
- 6. Accessories: None
- 7. Other requirements: None

175C CLEAN OFF ZONE CARPETING

1. Location: Where shown on layout drawing(s)
2. Base: New power floated concrete slab
 - Preparation: Apply F Ball & Co Ltd Stopgap P131 general purpose neoprene primer and min 3 mm thick Stopgap 300 smoothing underlayment to power floated concrete slab prior to application of adhesive
3. Fabricated underlay: Not applicable
4. Carpet:
 - Manufacturer: Forbo Flooring UK Ltd, PO Box 1, Kirkcaldy, Fife, KY1 2SB
 - Product reference: Coral Brush, entrance flooring
 - Type: Tufted
 - BS EN 1307 classification:
 - Levels of use class: 33
 - Luxury rating class: LC3
 - Additional performance properties to BS EN 1307: Commercial Heavy
 - Recycled content: None permitted
 - Width: 2000 mm
 - Colour/ pattern: To CA's requirements from manufacturer's full range
5. Carpet adhesive (and primer if recommended by manufacturer): F Ball & Co Ltd, Styccobond F74 adhesive
6. Accessories: None
7. Other requirements: None

GENERAL REQUIREMENTS

206 APPROVED FIRMS

1. The installation of pvc sheet wallcovering type M50/ 161A is to be carried out by system manufacturer's trained installer selected from the following:
 - Richardson Cladding Limited, 4 Lodge Lane, Wainstalls, Halifax, Yorkshire, HX2 2TU
 - MGD Specialist Interior Finishes, Suite 167, 792 Wilmslow Road, Didsbury, Manchester, M20 6UG
 - Commercial Coverings, Potter Street, Willington Quay, Wallsend, Tyne and Wear, NE28 6TZ

210 WORKMANSHIP GENERALLY

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

220 SAMPLES

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

230 CONTROL SAMPLES

1. General: Complete areas of finished work in approved locations as follows, and obtain approval of appearance before proceeding: Sheeting in special wet areas M50/151G; Sheeting in special wet areas M50/151H; Linoleum sheeting M50/152; Linoleum antistatic sheeting M50/ 152A; Vinyl acrylic sheet wall covering M50/160D; PVC sheet wall covering M50/161A; Carpeting M50/ 170B; Clean off zone carpeting M50/ 170B .

253 LAYOUT

1. Set out sheet coverings with joints parallel to room axes and so that seams and cross seams are kept to a minimum. Notwithstanding the foregoing:
 - Set out sheet coverings so that wherever possible, the widths of cut pieces exceed half roll width.
 - Lay sheet coverings across corridors wherever corridor width exceeds roll width.

310 MARKING

1. Ensure that materials are delivered to site in original packing, clearly marked with batch number.

320 STORAGE

1. Store materials in a clean, warm, dry, well ventilated place. Keep in original packing until conditioning commences.

330 COMMENCEMENT

1. 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.
2. Notification: Submit not less than 48 hours before commencing laying

340 CONDITIONING

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

350 ENVIRONMENT

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

360 FLOORS WITH UNDERFLOOR HEATING

1. Commencement of laying: Not before a period of 48 hours after heating has been turned off
2. 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

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

430A NEW WET LAID BASES

1. Base drying aids: Not used for at least four days prior to moisture content testing
2. Base moisture content test: Carry out in accordance with BS 5325, Annex A or BS 8203, Annex A
 - Locations for readings: In all corners, along edges, and at various points over area being tested
3. Commencement of laying coverings: Not until all readings show 75% relative humidity or less or alternatively, following application of a moisture suppressant as section J30/ 135

440A SUBSTRATES TO RECEIVE THIN COVERINGS

1. Trowelled finishes: Uniform, smooth surface free from trowel marks and other blemishes as clause E41/ 415. Abrade suitably to receive specified covering material

442 STATIC JOINTS OR CRACKS IN BASES

1. Rake or scrape out all cracks and vacuum to remove all loose dirt and debris.
2. Dampen the affected areas with water and Infill with epoxy filler. Allow to dry for minimum 24 hours.
 - Manufacturer: F Ball & Co Ltd, Churnetside Business Park, Station Road, Cheddleton, Leek, Staffordshire, ST13 7RS
 - Product reference: Stopgap 460 Exterior Repair Mortar

461 SMOOTHING/ SELF-LEVELLING UNDERLAYMENT COMPOUND

1. Manufacturer: F Ball & Co Ltd, Churnetside Business Park, Station Road, Cheddleton, Leek, Staffordshire, ST13 7RS
 - Product reference: Stopgap 1200 Pro smoothing underlayment
2. Apply to base in accordance with manufacturer's recommendations, incorporating 3 mm single sized chippings for applications more than 10 mm thick, and allow to dry before laying floor coverings.

LAYING COVERINGS

620 COLOUR CONSISTENCY

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

640A ADHESIVE FIXING GENERALLY

1. Adhesive type: As specified, as recommended by covering/ underlay manufacturer or as approved
2. Primer: Type and usage as recommended by adhesive manufacturer
3. Application:
 - Roll with a 50 kg roller to ensure full contact and a good bond overall.
 - As necessary to achieve good bond.
4. Finished surface: Free from trowel ridges, high spots caused by particles on the substrate, and other irregularities

650 SEAMS

1. Patterns: Matched
2. Joints: Tight without gaps

670 BORDERS AND FEATURE STRIPS IN SHEET MATERIAL

1. Curl: Not acceptable
2. Corners: Mitre joints

680 SEAM WELDING COVERINGS

1. Commencement: At least 24 hours after laying, or after adhesive has set
2. Joints: Neat, smooth, strongly bonded, flush with finished surface

681 SEAM WELDING PVC SHEET FLOORING IN SPECIAL WET AREAS

1. Commencement: At least 24 hours after laying, or after adhesive has set
2. Grooves: 3 mm wide by 2/3 depth of material formed evenly along each joint using either:
 - Hand Grooving Tool.
 - Automatic grooving machine fitted with diamond blade.
3. Welding:
 - Hot weld using hot air welding gun fitted with high speed welding nozzle and welding rod in colour to blend with floorcovering.
 - Cut off surplus weld rod with spatula.
 - Do not chemically weld.
4. Joints: Neat, smooth, strongly bonded, flush with finished surface

690 SEAM BONDING CARPET

1. Carpet types: M50/: 170B
2. Seaming adhesive application: Continuous bead to edges
3. Joints: Securely bonded, free of air bubbles

720 DOORWAYS

1. Joint location: On centre line of door leaf

730 FITTED FURNITURE PLINTHS

1. Dress skirtings up plinths to fitted furniture.

735 SEALANT TO M50/ 151G AND 151H PVC SHEET FLOORING IN WET AREAS

1. Manufacturer: Altro Ltd, Works Road, Letchworth, Hertfordshire, SG6 1NW
 - Product reference: Altroseal sealant
2. Location: Along top of self-coved skirtings at junction with walls

745A SHOWER THRESHOLD

1. Manufacturer: Quantum Profile Systems, Salmon Fields, Royton, Oldham, OL2 6JG
 - Product reference: Shower threshold ref QTR10
2. Material/ finish: PVC
3. Fixing: Securely bond to base.
 - Adhesive: Altro Ltd, Altrofix A19 adhesive

751 STAIR NOSINGS AND TRIMS

1. Manufacturer: Gradus Ltd, Park Green, Macclesfield, Cheshire, SK11 7LZ
 - Product reference: Ref DDA1 stair nosing with Interior slip resistant insert
2. Material/ finish: PVC-u channel with slip resistant PVC insert in colours to CA's requirements from manufacturer's full ranges
3. Fixing: Secure, level and with mitred joints. Adjusted to suit thickness of covering with continuous packing strips of hardboard or plywood. Nosings and packing strips bedded in gap-filling adhesive recommended by nosing manufacturer
 - Screw fixing with matching plugs: Required
 - Adhesive: F Ball & Co Ltd, Styccobond F32 adhesive

752 STAIR TRIMS

1. Manufacturer: Gradus Ltd, Park Green, Macclesfield, Cheshire, SK11 7LZ
 - Product reference: Ref HT38 stair edge trims supplied as pre-welded corners to treads/ risers
2. Material/ finish: PVC-u in colour to CA's requirements from manufacturer's full range
3. Fixing: Secure with mitred joints to strings and landings.
 - Adhesive: F Ball & Co Ltd, Styccobond F32 adhesive

772A SELF COVED SKIRTINGS TO LINOLEUM SHEETING

1. Height: 100 mm
2. Cove former:
 - Manufacturer: Gradus Ltd, Park Green, Macclesfield, Cheshire, SK11 7LZ
 - Product reference: Cove former ref CF38
 - Securely bond to base and background. Accurately mitre at corners.
3. Turn flooring material up wall, securely bond to cove former and background using adhesive specified for fixing to base, and ease top of material into edge trim. Accurately mitre at corners.
4. Adhesive: F Ball & Co Ltd, Styccobond F60 adhesive
5. Hot weld joints and mitred corners with complementary: Forbo Flooring UK Ltd Marmoweld MC welding rod

773B SELF COVED SKIRTINGS TO M50/ 151G & 151H TO PVC SHEET FLOORING IN SPECIAL WET AREAS

1. Height: 100 mm
2. Cove former:
 - Manufacturer: Gradus Ltd, Park Green, Macclesfield, Cheshire, SK11 7LZ

- Product reference: Cove former ref CF38
 - Securely bond to base and background. Accurately mitre at corners.
3. Top edge: Sealed at top against wall using sealant as clause 735
 4. Turn flooring material up wall and securely bond to cove former and background, with top edge straight and parallel with floor. Accurately mitre at corners.
 5. Adhesive: F Ball & Co Ltd, Styccobond F74 adhesive
 6. Hot weld joints and mitred corners with complementary welding rod.

775 JUNCTIONS BETWEEN SELF-COVED SKIRTINGS FORMED FROM SHEET MATERIALS AND ARCHITRAVES

1. Trim back of cove formers 150mm from door openings, and terminate self-coved skirtings against side of architraves.

780 TRAFFICKING AFTER LAYING

1. Covering types: As recommended by adhesive manufacturer(s)
2. Traffic free period: Until adhesive is set

COMPLETION

820A FINISHING

1. Description: Linoleum sheeting
2. Cleaning operations:
 - Wash floor with water containing neutral (pH 6-9) detergent. If necessary, lightly scrub heavily soiled areas.
 - Rinse with clean water, removing surplus to prevent damage to adhesive. Allow to dry.
3. Emulsion polish: Not required

820B FINISHING

1. Description: Slip resistant vinyl sheeting and PVC sheet flooring in wet areas
2. Cleaning operations:
 - Wash floor with water containing Altro Floors Ltd, AltroClean 44 alkaline cleaner. If necessary, use deck scrubber on small or lightly soiled areas and machine with synthetic pads on large or heavily soiled areas (nylon brushes in the case of M50/ 151G & 151H sheeting).
 - Rinse with clean water, removing surplus to prevent damage to adhesive. Allow to dry.
3. Emulsion polish: Not required

825 FINISHING NON-TEXTILE ANTISTATIC FLOORING

1. Cleaning operations
 - Wash floor with water containing neutral (pH 6-9) detergent. If necessary, lightly scrub heavily soiled areas.
 - Rinse with clean water, removing surplus to prevent damage to adhesive. Allow to dry for not less than 24 hours before testing.

870 PROTECTION

1. Cover flooring with clean dust sheets, or other non-staining suitable material to prevent damage from dirt and traffic prior to Practical Completion. Ensure any material with printed information on one face is laid with printed face uppermost.

880 WASTE

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

Ω End of Section

M60 PAINTING/CLEAR FINISHING

CLAUSES

2 TO BE READ WITH PRELIMINARIES/GENERAL CONDITIONS.

COATING SYSTEMS

111 VINYL EMULSION PAINT

1. Description: Internal on new plasterboard
2. Manufacturer: As clause 210A
3. Surfaces: New plasterboard finished with drywall primer
 - Preparation: As clauses 400 and 591
4. Initial coats: Thinned coat of emulsion paint
5. - Number of coats: One
6. Finishing coats: Matt vinyl emulsion paint
 - Number of coats: Two

115A TRADE MATT EMULSION PAINT

1. Description: Internal on new plasterboard
2. Manufacturer: Dulux Trade, ICI Paints, Wexham Road, Slough, SL2 5DS
 - Product reference: Dulux Trade Diamond Matt emulsion paint
3. Surfaces: New plasterboard finished with drywall primer
 - Preparation: As clauses 400 and 591
4. Initial coats: Thinned coat of emulsion paint
 - Number of coats: One
5. Finishing coats: Trade matt emulsion paint
 - Number of coats: Two

151A TRADE ACRYLIC EGGSHELL PAINT

1. Description: Internal on new plasterboard
2. Manufacturer: Dulux Trade, ICI Paints, Wexham Road, Slough, SL2 5DS
 - Product reference: Dulux Trade Diamond Quick Drying Eggshell
3. Surfaces: New plasterboard finished with drywall primer
 - Preparation: As clauses 400 and 591
4. Initial coats: Johnstone's Trade Joncryl Acrylic Primer Undercoat
 - Number of coats: One
5. Finishing coats: Acrylic eggshell paint
 - Number of coats: Two

155A SATIN PAINT

1. Description: Internal on pre-primed wood
2. Manufacturer: Dulux Trade, ICI Paints, Wexham Road, Slough, SL2 5DS
 - Product reference: Dulux Trade Diamond Satinwood
3. Surfaces: Factory primed wood
 - Preparation: As clauses 400 and 472
4. Finishing coats: Satin paint

- Number of coats: Two

180 FLOOR COATING

1. Description: To plantroom floor
2. Manufacturer: Conren Ltd, Unit 1, The Bridge Business Centre, Ash Road South, Wrexham Industrial Estate, Wrexham, LL13 9UG
 - Product reference: Aquasol two pack, water based epoxy resin protective coating
3. Surfaces: New in situ concrete floor slab/ screed and concrete blockwork bund
 - Preparation:
 - In accordance with manufacturer's recommendations
 - Form cove at junction between floor and bund using Conren Ltd Patchfast heavy duty, fast setting, epoxy resin mortar
4. Initial coats: Aquasol
 - Number of coats: One
5. Finishing coats: Aquasol
 - Number of coats: Two
 - Slip resistance value - water wet (minimum): PTV to BS 7976 of 49

182 EPOXY RESIN COATING

1. Description: To lift pit and basement plantroom floor
2. Manufacturer: Conren Ltd, Unit 1, The Bridge Business Centre, Ash Road South, Wrexham Industrial Estate, Wrexham, LL13 9UG
 - Product reference: Aquasol water based epoxy resin coating
3. Surfaces: New in situ concrete
 - Preparation: In accordance with manufacturer's recommendations
4. Initial coats:
 - Type: Clear Aquasol
 - Number of coats: One
5. Finishing coats:
 - Type: Coloured Aquasol
 - Number of coats: Two

195A SPECIAL COATING

1. Description: Airtight coating to interior blockwork
2. Manufacturer: Pristine Coatings, Phoenix Workshops, Mochdre, Colwyn Bay, LL28 5EF
 - Product reference: Elite Airtight coating
3. Surfaces: Paint grade fairfaced blockwork
 - Preparation:
 - Brush down surface to remove dust.
 - Remove all traces of efflorescence
 - Fill large holes and voids with universal filler
4. Finishing coats:
 - First airless spray coat (spray tip size 21 thou/ fan size 300 mm), overlapping each pass 50% to ensure uniformity, followed by back rolling with medium pile masonry roller or squeegee to fill perforations

- Allow first coat to dry apply then apply mist coat to entire surface, overlapping each pass by 50% to ensure uniformity
- Spot roll or fill any remaining perforations

196 WATERBORNE LACQUER

1. Description: To hardwood handrails
2. Manufacturer: Bona Ltd, 6 Thornton Chase, Linford Wood, Milton Keynes, MK14 6FD
 - Product reference: Bona Traffic HD (extra matt) waterborne polyurethane topcoat
3. Surfaces: New hardwood handrails
 - Preparation: As clause 400. Sand surfaces with light sanding grit P150 and remove all sanding dust prior to application of primer
4. Initial coats: Bona Prime Classic waterborne primer
 - Number of coats: One applied using a Bona Roller. Lightly abrade using light sanding grit P150 (or finer) before applying final coats
5. Finishing coats: Bona Traffic HD (extra matt) waterborne polyurethane topcoat
 - Number of coats: Four applied at a rate of 8-10m² per litre per coat using a Bona Roller. Lightly abrade between coats using light sanding grit P150 (or finer)

GENERALLY

210A COATING MATERIALS

1. Manufacturers: : Obtain materials from any one of the following:
 - Dulux Trade, ICI Paints, Wexham Road, Slough, SL2 5DS
 - PPG Architectural Coatings, Huddersfield Road, Birstall, Batley, West Yorkshire, WF17 9XA
2. Selected manufacturers: Submit names before commencement of coating work

215 HANDLING AND STORAGE

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

220 COMPATIBILITY

1. Coating materials selected by contractor
 - 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

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

300A CONTROL SAMPLES

1. Sample areas of finished work: Carry out, including preparation, as follows:
2. Types of coating Nature of sample
3. M60/ 115 . Two adjacent walls .
4. M60/ 151 . Two adjacent walls .

5. M60/ 155 . One door frame/ architraves .
6. Approval of appearance: Obtain before commencement of general coating work

320 INSPECTION BY COATING MANUFACTURERS

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

PREPARATION

400 PREPARATION GENERALLY

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

425 IRONMONGERY

1. Removal: Remove ironmongery from surfaces to be coated
2. Hinges: Do not remove
3. Replacement: Refurbishment as necessary; refit when coating is dry

472 PREPRIMED WOOD

1. Defective primer: Remove dirt, grease and other contaminants from satisfactorily pre-primed surfaces and sand lightly. Abrade chalking, powdery and other defective areas back to bare wood, remove all dust and reprime
2. Stopping and filling: Countersink heads of fasteners sufficiently to hold stoppers/ fillers and fill nail and screw holes with stopper/ filler worked well in and finished off flush with surface. Sand smooth and remove dust
3. Instructions: Obtain instructions before proceeding where previously applied primer is inadequate or incompatible with the specified undercoat, or where pre-primed wood has been exposed for a prolonged period prior to redecoration

561 UNCOATED CONCRETE

1. Release agents: Remove by washing with a weak detergent solution and rinse off with clean water
2. Blow holes and other surface defects: Fill and rub down flush with surface

571 UNCOATED MASONRY/ RENDERING

1. Loose and flaking material: Remove dirt, surface deposits, loose and flaking material using a stiff brush
2. Holes and cracks: Fill flush with surface

591 UNCOATED PLASTERBOARD

1. Depressions around fixings and imperfections and/ or minor damage: Fill with stoppers/ fillers to leave a smooth, blemish-free surface

625 EFFLORESCENCE

1. Surface salts and other loose material: Remove using a stiff brush or coarse, dry cloth. Do not wash off. Repeat at intervals until efflorescence does not recur within 48 hours
2. Glossy surfaces: Sand to provide key for finish
3. General: Ensure affected surfaces are fully dry in depth, then coat with alkali-resisting primer, used neat or thinned with white spirit up to 10% by volume

629 FILLING AFTER PRIMING

1. Heads of fasteners: Countersink sufficiently to hold stoppers/ fillers. Fill nail and screw holes, joints, cracks, holes, depressions and open or coarse grained wood with stopper/ filler worked well in and finished off flush with surface. Do not use fine surface filling. Sand smooth and remove dust
2. Use only tinted stoppers with stains and varnishes.

APPLICATION

711 COATING GENERALLY

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

800 GLAZING

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

820 COMPLETION

1. Ensure opening lights and other moving parts move freely. Remove all masking tape and temporary coverings.

Ω End of Section

M61

INTUMESCENT COATINGS FOR FIRE PROTECTION OF STEELWORK

CLAUSES

2 TO BE READ WITH PRELIMINARIES/GENERAL CONDITIONS

PROTECTIVE COATING SYSTEMS

160A OFF SITE COATING TO PRIMED STEEL

1. Description: To steel beams, columns and bracing etc within external wall construction
2. Use/ Location: Internal Category C1 or C2 environment
3. Fire performance: To BS 476, as clause 203
4. Preparation and priming: Zinc phosphate primer, by steelwork contractor, as section G10
5. Intumescent coating system:
 - Intumescent coat:
 - Manufacturer: Sherwin-Williams Protective & Marine Coatings, Tower Works, Kestor Street, Bolton, BL2 2AL
 - Product reference: FIRETEX FX2003 shop applied solvent based intumescent coating
 - Finish: Non-visible areas: Basic
 - Top sealer coat:
 - Manufacturer: Sherwin-Williams Protective & Marine Coatings, Tower Works, Kestor Street, Bolton, BL2 2AL
 - Product reference: FIRETEX M71V2 sheen finish sealer coat to steelwork where visible within rooms below ceiling level
 - Colour: To CA's requirements from manufacturer's full range
6. Bolt head/ Nut protection: Prepare and prime in accordance with current issue of coating manufacturer's Technical Advisory Document TAD0016 "On-Site Treatment of Boltheads and Nuts" prior to application of intumescent coating (and sealer coat where visible within rooms below ceiling level)

PERFORMANCE AND GENERAL REQUIREMENTS

203 FIRE PERFORMANCE TO BS 476

1. Fire resistance to BS 476-21: 60 minutes generally and 120 minutes where shown as being required on the following fire plan drawings:
 - GCH-IBI-XX-00-DR-A-572-0001
 - GCH-IBI-XX-01-DR-A-572-0001
 - GCH-IBI-XX-02-DR-A-572-0001
 - GCH-IBI-XX-03-DR-A-572-0001

205 VALIDATION OF MATERIALS

1. Project-specific evaluation of intumescent coating materials
 - Standard: In accordance with BS EN 16623, clause 4
 - Test results: Submit on request

210 WORKING PROCEDURES

1. Standard: In accordance with BS EN 16623
2. Give notice: Before commencing surface preparation and coating application

3. Quality control: Record project specific procedures for surface preparation and coating application

215 WORKING CONDITIONS

1. General: Maintain manufacturer's recommended temperature, humidity and air quality conditions during application and drying
2. Surface condition: Clean and dry at time of application

220 APPLICATOR'S PERSONNEL

1. Operatives: Trained/ experienced in anticorrosive and intumescent coatings
2. Evidence of training/ experience: Submit on request

255 SPRAYED COATING APPLICATION OFF SITE

1. Standard: In accordance with BS EN 16623
2. Uncoated areas of steel: None

270 INSPECTION

1. Permit intumescent manufacturer to
 - Inspect work in progress.
 - Inspect quality control records.
 - Take dry film thickness and other measurements.
 - Take samples of products.
2. Intumescent manufacturer's inspection reports: Submit without delay

280 OFF-SITE-COATED STEEL

1. Handling and erection: Use methods and devices designed to minimise damage to intumescent coatings
2. Damaged areas of coating: Reinstate in accordance with coating manufacturer's recommendations

290 ON SITE ATTACHMENTS

1. Coat attachments to coated steelwork with intumescent coating matching thickness applied to steelwork to which they are attached, all in accordance with coating manufacturer's Technical Advisory Document TAD0026 "Attachments to Firetex coated steelwork".

PREPARATION OF SURFACES - NOT USED

APPLICATION OF CASTINGS - NOT USED

APPLICATION OF COATINGS

410 INTUMESCENT COATING DRY FILM THICKNESS (DFT)

1. Applicable coatings: Intumescent and top sealer coat
2. Required dft: Determine for every steel member to give specified period of fire resistance. Use intumescent coating manufacturer's current published loading tables
 - Special sections and partial fire exposure conditions: Obtain required dft in writing from manufacturer
3. Schedule and drawings: Submit at least two weeks before starting work
 - Schedule content: Member sizes, weights/ thicknesses, loading conditions, etc. showing, for each variant, the exposed perimeter/ sectional area (Hp/A) ratio and required dft
 - Drawing content: Steelwork drawings marked in colour to show required dft for each member

420 MEASUREMENT OF INTUMESCENT DFT

1. Primer dft: Determine average dft (for deduction from total dft after application of intumescent)
2. Intumescent dft: Determine at:
 - 500 mm centres along each coated plane of universal sections (8 planes), and rectangular hollow sections (4 planes).
 - 125 mm centres along coated circular hollow sections, spread evenly around circumference.
3. Acceptance standard
 - Average intumescent dft: Not less than required dft (exclusive of primer and top sealer)
 - Local intumescent dft: Not less than 80% of required dft. Areas greater than 100 mm equivalent diameter with a dft of less than 80% of required dft must be brought up to thickness

440 BASIC FINISH

1. Definition: Reasonably smooth and even. Orange peel, other texture, minor runs and similar minor defects are acceptable

490 TOP SEALER COAT

1. Application: To achieve dft recommended by manufacturer and to give an even, solid, opaque appearance, free from runs, sags and other visual defects

520 COMPLETION OF OFF-SITE-COATED STEEL

1. Uncovered areas, including fixings: Following erection of steelwork, apply intumescent coating locally
2. Unscheduled additional connections to erected steelwork: Remove and reinstate intumescent coating locally

COMPLETION

530 RECORDS OF INTUMESCENT APPLICATION

1. On completion of intumescent work, submit
 - Accurate surface preparation, coating and intumescent application records.
 - Fire resistance certificates.
 - Intumescent manufacturer's recommendations for maintenance and overcoating.

Ω End of Section

N10 GENERAL FIXTURES/FURNISHINGS/EQUIPMENT

CLAUSES

2 TO BE READ WITH PRELIMINARIES/ GENERAL CONDITIONS.

PRODUCTS

120 EQUIPMENT CLIP

1. Type and size: 32 mm dia open Terry type equipment clip
2. Finish: bzp finish

139 SHARPS BOX HOLDER

1. Manufacturer: Hospital Metalcraft Ltd, Blandford Heights, Blandford Forum, Dorset, DT11 7TG
 - Product reference: Type SS/ 60/ WF sharps box holder

151 WALL MOUNTED TELEVISION BRACKET

1. Manufacturer: Pivotelli (UK) Ltd, Dobles Lane Business Park, Holsworthy, Devon, EX22 6HL
 - Product reference: Double Pivotelli television bracket with 4 way platform mount
2. Colour: Matt black

153 CEILING MOUNTED TELEVISION BRACKET

1. Manufacturer: Pivotelli (UK) Ltd, Dobles Lane Business Park, Holsworthy, Devon, EX22 6HL
 - Product reference: Triple telescopic Pivotelli television bracket with ref TX extension arm and ref TTS triple end frame bracket
2. Colour: Matt black

161 MEDICINE TROLLEY SECURING DEVICE

1. Manufacturer: Hospital Metalcraft Ltd, Blandford Heights, Blandford Forum, Dorset, DT11 7TE
 - Product reference: Type MT/ 1/ 6F medicine trolley securing device

173 NAPPY CHANGING STATION

1. Manufacturer: Bobrick Washroom Equipment Inc, Gor-Ray House, The Business Centre, 758 Great Cambridge Road, Enfield, Middlesex, EN1 3PN
 - Product reference: Surface mounted nappy changing station ref KB-100-00

OR

KB-101-00

186 DISPLAYBOARD RAIL

1. Manufacturer: Nobo Visual Aids Ltd, Alder Close, Eastbourne, Sussex, BN23 6QB
 - Product reference: Noborail II System wall rail(s) complete with connector plates and plate stops, and all other necessary fittings and fixings and with projection screens, marker boards and flip charts as shown on Furniture/ Fittings layout drawing(s)

193A WHITEBOARDS

1. Description:
2. Type: Wall mounted

3. Manufacturer: Teacherboards Ltd, Airedale Business Centre, Skipton, North Yorkshire, BD23 2TZ
 - Product reference: Aluminium framed non-magnetic drywipe board
4. Dimensions: As shown on Furniture/ Fittings layout drawing(s)
5. Frame:
 - Material: Aluminium
 - Finish/ Colour: Satin silver anodised
6. Surface: Manufacturer's standard
 - Markings: Not required
 - Colour: White
7. Accessories: 300 mm long aluminium clip on pen shelf

193C MAGNETIC WHITEBOARDS

1. Description:
2. Type: Wall mounted
3. Manufacturer: Teacherboards Ltd, Airedale Business Centre, Skipton, North Yorkshire, BD23 2TZ
 - Product reference: Aluminium framed vitreous enamelled steel drywipe board
4. Dimensions: As shown on Furniture/ Fittings layout drawing(s)
5. Frame:
 - Material: Aluminium
 - Finish/ Colour: Satin silver anodised
6. Surface: Vitreous enamelled steel
 - Markings: Not required
 - Colour: White
7. Accessories: 300 mm long aluminium clip on pen shelf

195A DISPLAY PANELS

1. Description:
2. Type: Wall mounted
3. Manufacturer: Teacherboards Ltd, Airedale Business Centre, Skipton, North Yorkshire, BD23 2TZ
 - Product reference: Aluminium framed bulletin pinboard
4. Size: As shown on Furniture/ Fittings layout drawing(s)
5. Board surface:
 - Material: Linoleum
 - Colour: To CA's requirements from manufacturer's full range
6. Frame:
 - Material: Aluminium
 - Finish/ Colour: Satin silver anodised
7. Accessories/ Other requirements: None

232 CURTAIN TRACK

1. Manufacturer: Silent Gliss Ltd, Star Lane, Margate, Kent, CT9 4EF
 - Product reference: Ref 1080 curtain track complete with face fix brackets ref 3630 or top fix brackets ref 3603, endcovers/ stops ref 3667 and 16 no gliders ref 3533/ hooks ref 3582 per m run

2. Finish/ colour: All visible aluminium items to have white (RAL 9010) polyester powder coated finish

234 CUBICLE CURTAIN TRACK, SUSPENDED

1. Manufacturer: Silent Gliss Ltd, Star Lane, Margate, Kent, CT9 4EF
 - Product reference: Ref 6101 extruded aluminium cubicle curtain track complete with pvc dust cover (ref 6110), 10 no gliders and captive hooks (ref 6147) per m run, wall brackets (ref 6609)/ parallel wall brackets (ref 6503), spring stops (ref 6086) and hanger rods/ sleeves/ ceiling studs/ dummy ceiling support sleeves/ track inserts (ref 6187/ 6191/ 6192/ 6193/ 6194)
2. Finish/ colour: All visible aluminium items to have white (RAL 9010) polyester powder coated finish

237 SHOWER CURTAIN TRACK

1. Manufacturer: Silent Gliss Ltd, Star Lane, Margate, Kent, CT9 4EF
 - Product reference: Ref 6101 extruded aluminium cubicle curtain track complete with pvc dust cover (ref 6110), 10 no gliders and captive hooks (ref 6147) per m run, wall brackets (ref 6609), spring stops (ref 6086) and hanger rods/ sleeves/ ceiling studs/ dummy ceiling support sleeves/ track inserts (ref 6187/ 6191/ 6192/ 6193/ 6194)
2. Finish/ colour: All visible aluminium items to have white (RAL 9010) polyester powder coated finish

240A BLINDS

1. Description: Vertical louvre
2. Standard: To BS EN 13120
3. Manufacturer: Pentel Contracts Ltd, Dyer Street, off Ordsall Lane, Salford, M5 4TH
 - Product reference: Pentel Astralux 1000 vertical blind with white polyester powder coated headrail and 90 mm wide louvres
4. Type: Vertical louvre
5. Material: Obscura wipeable pvc fabric
 - Finish/ Colour: To CA's requirements
6. Operation: Opening and closing wand
7. Operating effort: Class 1
8. Testing: Not required
9. Mechanism endurance: Class 1
10. Accessories/ Other requirements: Safety cord retainer minimum 1500mm above floor level

240C BLINDS

1. Description: Blackout
2. Standard: To BS EN 13120.
3. Manufacturer: Levlux A. T. Ltd, 24 Eastville Close, Eastern Avenue, Gloucester, GL4 3SJ
 - Product reference: Levlux 790 Slimgroove Type 110 blackout blind with gearbox and folding handle operation
4. Type: Vertical roller
5. Material: Flame retardant from Levlux 'Dark Knight' range
 - Finish/ Colour: To CA's requirements
6. Operation: Side mounted cord and pulley
7. Operating effort: Class 1
8. Testing: Not required

9. Mechanism endurance: Class 1
10. Accessories/ Other requirements: Bevelled headbox, two part 60 mm side guides and travelling hem bar to be polyester powder coated in colour to CA's requirements from manufacturer's full range

302 ENTRANCE MATWELL

1. Manufacturer: 3M United Kingdom plc, 3M Centre, Cain Road, Bracknell, RG12 8HT
 - Product reference: Nomad Optima+ Open 17 recessed entrance matting system with Nomad Aqua series 85 textile infills, all set within 17/ 23 mm 3M aluminium matwell frame to dimensions shown on Fabric/ Finishes layout drawing(s)
2. Colour of matting infills: To CA's requirements from manufacturer's full range

460 GROUP 2 EQUIPMENT

1. Receive, unload, take in and store all Group 2 equipment supplied by Client.
2. Assemble and fix in strict accordance with manufacturer's recommendations in locations shown on Furniture/ Fittings layout drawing(s) at heights provided by CA.

EXECUTION

710 MOISTURE CONTENT OF WOOD AND WOOD-BASED BOARDS

1. Standard: To BS EN 942
2. Moisture content on delivery: 6-10%
3. Temperature and humidity: During delivery, storage, fixing and to handover maintain conditions to suit specified moisture contents of timber components

720 INSTALLATION GENERALLY

1. General: As Preliminaries section A33
2. Fixing and fasteners: As section Z20.
3. Services: As M & E Services Consultant's specification

770 TRIMS

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

COMPLETION

910 GENERAL

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

Ω End of Section

N11 FITTED FURNITURE

CLAUSES

10 TO BE READ WITH PRELIMINARIES/ GENERAL CONDITIONS

GENERAL

110 PURPOSE AND USE

1. Manufacture and install: Storage units, worktops, workstations, Staff Bases and Reception Desks as follows;
 - Wall mounted cupboards with hinged or sliding doors and shelves, installed either as single units or jointed side by side to form ranges of units fixed to partitioning.
 - Floor mounted base cupboards/ drawer units installed singly or side by side to form ranges of units supported upon plinths and fixed to partitioning.
 - Mobile underbench cupboards/ drawer units.
 - Worktops mounted against partitioning/ in the angle between adjacent partitions/ between partitions or in a peninsula or island arrangement supported by floor mounted base storage units and/ or leg frames. Where specified, worktops to be supplied complete with inset sink bowls thermally bonded to their underside or with cut-outs to accept inset sinks/drainers.
 - Workstations mounted against partitioning/in the angle between adjacent partitions/ between partitions supported by floor mounted base storage units and/or leg frames.
 - Freestanding Staff Bases and Reception Desks comprising worktops, base storage units, end gables and consoles incorporating pigeonhole units and panels for service terminals and incorporating concealed lighting and space for the concealed distribution of associated services.

120 CONSTRUCTION AND APPEARANCE

1. Construct: Storage units, worktops, workstations, Staff Bases and Reception Desks in accordance with details and co-ordinating dimensions shown on detail drawings using the materials specified
2. Where not stated otherwise on drawings or elsewhere in this specification, fitted furniture is to comply, as a minimum, with the relevant performance requirements (but not dimensional standards) laid down in NHS Estates Health Technical Memorandum no 63: Fitted Storage Units/Health Technical Memorandum no 71: Materials Management Modular Storage.
3. New Item: Details of any proposed alternatives to specified design requirements, materials or performance requirements must be submitted in writing for approval by the CA before submission of tenders. Such approval shall not necessarily be given.

130 LOCK SUITING

1. General: Modular system cylinder cores to be keyed alike in accordance with lock suiting schedule
2. Suiting: Suite all cylinder cores under one Master key

WORKMANSHIP

210 APPROVED FIRMS

1. Storage units, worktops, workstations, Staff Bases and Reception Desks to be manufactured and installed by one of the following;
 - Custom Design & Develop Ltd, Yardley Road, Kirby Industrial Estate, Liverpool, L33 7SS
 - Deanestor Healthcare, Warren Way, Crown Farm Business Park, Mansfield, NG19 0FL
 - JTS Joinery, 2 Preston Road, Grimsargh, Preston, PR2 5SD

- Work Space Design, 1 Bertha Park View, Perth, PH1 3JE

220 MANUFACTURE AND ASSEMBLY

1. Manufacture and assemble fitted furniture as specified and to BS 1186 Part 2. Manufacture and assembly is to take place off site.
2. Form sections out of the solid when not specified otherwise. Carefully machine materials to accurate lengths and profiles, free from twist and bowing.
3. After machining, surfaces to be smooth and free from tearing, woolliness, chip bruising and other machining defects and suitable to receive specified finishes.
4. Assemble with tight, close fitting joints to produce rigid components free from distortion and within permitted dimensional tolerances.
5. All screws to have clearance holes. Screws 3 mm or more and all screws into mdf, chipboard and hardwood to have pilot holes.

230 SHAPE, DIMENSIONS, STRENGTH OF FITTED FURNITURE

1. Shape: All carcasses and frames are to be constructed square and rigid. Tolerances for deviations in overall shape shall not exceed the following:
 - cup and bow: short edge 1.5 mm
 - long edge 3.0 mm
 - diagonal 4.0 mm
 - twist: at any corner 3.0 mm
 - squareness: in 500 mm 0.75 mm
2. Dimensions: Storage units shall be manufactured to their co-ordinating dimensions to a tolerance of +0 -2 mm
3. Evenness and appearance: The maximum acceptable surface deviations from a true plane are as follows:
 - when measured over 50 mm; 0.1 mm
 - when measured over 200 mm; 0.15 mm
4. Like components fabricated from like materials must be indistinguishable one from the other in colour, grain and texture on all visible surfaces, regardless of whether the component is pre-finished or has a site applied finish by others. Any mismatching will be rejected.

MATERIALS

310 GENERALLY

1. To BS 476 Part 4 and achieving a Class 1 surface spread of flame rating when tested to BS 476 Part 7.

320 LAMINATE SHEET GENERALLY

1. To BS EN 438.
2. Colour(s): To CA's requirements from the following ranges: Egger (UK) Ltd:
 - "Uni Colours" range
 - "Woodgrains" range

Formica Group:

- "Collection Colours" range
- "Collection Woods" range

Polyrey UK:

- "Papago Color" range
 - "Origine" range
3. Laminate grade: VGS/ HGP

330 LAMINATE SHEET TO CONSOLE TOPS/ WORKTOPS

1. To BS EN 438.
2. Colour(s): To CA's requirements from the following ranges:
 - Egger (UK) Ltd, "Fantasy" range
 - Formica Group, "Collection Patterns" range
 - Polyrey UK, "Patterns" range
3. Laminate grade: HGP

340 LINOLEUM SHEET TO CONSOLE TOPS/ WORKTOPS

1. Colour(s): : To CA's requirements from the following ranges:
 - Forbo Nairn Ltd "Marmoleum Real"
 - Forbo Nairn Ltd "Marmoleum Dual"
 - Forbo Nairn Ltd "Marmoleum Fresco"
 - Forbo Nairn Ltd "Marmoleum Piano"
 - Forbo Nairn Ltd "Artoleum"
 - Forbo Nairn Ltd "Desk Top"

350 SOLID SURFACING TO CONSOLE TOPS

1. Colour(s): To CA's requirements from the following ranges:
 - DuPont "Corian"
 - LG Hausys "Hi-Macs"

EXECUTION

410 GENERALLY

1. Prevent distortion of components during storage, transit and handling.
2. Keep components clean and dry before fixing. Prevent damage to components and marking of surfaces which will be visible in completed work.

420 CONDITIONS

1. Do not fix fitted furniture until rooms are weathertight and the work of wet trades is finished and dried out.

430 MOISTURE CONTENT OF WOOD AND WOOD BASED BOARDS

1. Control and monitoring:
 - Method statement: Submit

440 INSTALLATION GENERALLY

1. Joinery workmanship: As section Z10
2. Metal workmanship: As section Z11
3. Fixings and adhesives: As section Z20
4. General: Well fitting, stable and secure
5. Accuracy: Plumb, level and aligned as necessary
6. Fix securely to prevent pulling away, deflection, distortion or other movement during use and to ensure compliance with design and performance requirements.
7. Do not distort components when tightening fixings or packings.

8. Carry out installation with minimum of cutting, bending or shaping of component parts to fit one to the other. Cut and fit accurately and neatly around pipework etc. Where items are shown as a tight fit between walls (ie worktops), do not manufacture until all dimensions have been verified and allow for on-site adjustments.
9. Ensure adequate clearances for moving parts. If necessary, adjust packings and fixings to eliminate binding.
10. Do not cut, plane or sand completed components to remedy defects or distortion.

450 WORKTOPS

1. Worktops to be in unjointed lengths except where lengths in excess of 3.0 m are required.
2. Minimum length of any make up piece: 1.5 m
3. Strap joints on the underside of worktops and locate over underbench units or leg frames ensuring butt joints are watertight.
4. Stepped joints: Not permitted

460 TRIMS

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

470 IRONMONGERY AND FITTINGS

1. Assemble and fix carefully and accurately using fixings to manufacturer's recommendations.
2. Prevent damage to ironmongery and adjacent surfaces.

COMPLETION

510 GENERAL

1. Doors and drawers: Accurately aligned, not binding. Adjusted to ensure smooth operation
2. Shelves: Fitted to tolerances allowing easy adjustment in location whilst maintaining adequate support
3. Ironmongery: Checked, adjusted and lubricated to ensure correct functioning

Ω End of Section

N13 SANITARY APPLIANCES/ FITTINGS

CLAUSES

2 TO BE READ WITH PRELIMINARIES/ GENERAL CONDITIONS.

PRODUCTS

200 SANITARY APPLIANCES/ FITTINGS

1. Sanitary appliances and associated fittings: As described in Sanitary Schedule

430 SMALL HOOKS

1. Description:
2. Manufacturer: Allgood plc, 76 King Street, Manchester, M2 4NH
 - Product reference: Allgood ref 6555 coat hook
3. Material: Stainless steel

431 COAT HOOKS

1. Description:
2. Manufacturer: Allgood plc, 76 King Street, Manchester, M2 4NH
 - Product reference: Allgood ref 6550 coat hook
3. Material: Stainless steel

436 HANDRAILS AND GRAB BARS

1. Description:
2. Manufacturer: NYMAS, Royce House, Royce Avenue, Billingham, TS23 4BX
 - Product reference: NymaCARE non-corrosive grade 304 stainless steel grab rails generally with concealed screw flanges but roseless type to sanitary back panels where noted in Sanitary Schedule, all to dimensions scheduled on drawing(s)
3. Diameter: 32 mm
4. Material: Stainless steel
5. Finish/ colour: Satin finish

437F FLOOR MOUNTED HINGED HANDRAIL

1. Description: 650 mm long
2. Manufacturer: NYMAS, Royce House, Royce Avenue, Billingham, TS23 4BX
 - Product reference: 211865/SS hinged grab rail mounted on 750 mm high post
3. Diameter: 32 mm
4. Material: Stainless steel
5. Finish/ Colour: Satin finish

437H WALL MOUNTED HINGED HANDRAIL

1. Description: 800 mm long
2. Manufacturer: NYMAS, Royce House, Royce Avenue, Billingham, TS23 4BX
 - Product reference: 211880/SS hinged grab rail
3. Diameter: 32 mm
4. Material: Stainless steel
5. Finish/ Colour: Satin finish

448C FOLDING SEAT AND BACKREST

1. Description:
2. Manufacturer: Pressalit Ltd, Riverside Business Park, Dansk Way, Leeds Road, Ilkley, West Yorkshire, LS29 8JZ
 - Product reference: Folding seat with support leg ref R1602 and backrest ref R1651

522 PREPLUMBED SANITARY ASSEMBLIES

1. Generally: Deliver as factory assembled, fully tested sanitary assemblies comprising sub-frame, laminate faced back panels, sanitary appliance sealed to back panel, supply pipework, waste, trap, tap(s) and cistern as described in Sanitary Schedule together with all fittings necessary for fitting assembly into prepared opening in partition and with back panel pre-drilled for waste pipework
2. Pre-plumbed solid grade laminate sanitary back panels: As section K32/ 160C

580 SEALANT FOR POINTING

1. Standard: To BS EN ISO 11600
 - Class: F20 HM
2. Type: High modulus acetoxysilicone sealant
 - Manufacturer: Dow Corning Ltd, Meridien Business Park, Copse Drive, Allesley, Coventry, CV5 9RG
 - Product reference: 785 Silicone Sanitary Sealant
3. Colour: White

EXECUTION

610 INSTALLATION GENERALLY

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

620 NOGGINGS AND BEARERS

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

640 OPENINGS FOR PREPLUMBED SANITARY ASSEMBLIES

1. Timing: Accurately form openings in plasterboard/ metal stud partitions as shown on detail drawing before commencing installation of pre-plumbed sanitary assemblies

650 INSTALLING WC PANS

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

670 INSTALLING CISTERNS

1. Cistern operating components: Obtain from cistern manufacturer

2. Inlet and flushing valves: Match to pressure of water supply
3. Internal overflows: Into pan, to give visible warning of discharge
4. External overflows: Fix pipes to falls and locate to give visible warning of discharge. Agree location where not shown on drawings

710 INSTALLING TAPS

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

720 INSTALLING WASTES AND OVERFLOWS

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

Ω End of Section

N14 GENERAL INTERNAL SIGNAGE SYSTEMS

CLAUSES

2 TO BE READ WITH PRELIMINARIES/ GENERAL CONDITIONS.

GENERAL

105 GENERAL REQUIREMENTS

1. Detailed requirements and locations of signs: See Signposting Schedule

SYSTEM PERFORMANCE

290 SIGNAGE SAMPLES

1. Sign type: One of each type scheduled in Signposting schedule
 - Action: Submit labelled samples
 - Conformity: Retain samples on site for the duration of the contract or until instructed to remove
 - Delivered product: To conform with labelled samples

PRODUCTS - NOT USED

EXECUTION

610A FIXING SIGNS GENERALLY

1. Installation: To BS 559
 - Secure, plumb and level.
2. Strength of fasteners: Sufficient to support all live and dead loads
3. Fasteners and or adhesives: As section Z20
4. Fixings showing on surface of sign: Not permitted

COMPLETION - NOT USED

Ω End of Section

N15 INTERNAL FIRE AND SAFETY SIGNAGE SYSTEMS

CLAUSES

2 TO BE READ WITH PRELIMINARIES/ GENERAL CONDITIONS.

GENERAL

105 GENERAL REQUIREMENTS

1. Detailed requirements and locations of signs: See Signposting Schedule

SYSTEM PERFORMANCE

205 DESIGN OF INTERNAL SIGNAGE SYSTEMS

1. Description:
2. Design: Complete detailed design and submit before commencing work
3. Content: Signs including facing information, components, inserts, accessories and fixings necessary to complete the system
4. Proposals: Submit drawings, schedules, technical information, calculations and manufacturer's literature before commencing work

260 PHOTOLUMINESCENT PROPERTIES

1. Description: For escape route signage
2. Luminance decay classification to BS ISO 17398: C

PRODUCTS - NOT USED

EXECUTION

610 FIXING SIGNS GENERALLY

1. Installation: Secure, plumb and level
2. Fasteners and adhesives: As section Z20
3. Strength of fasteners: Sufficient to support live and dead loads
4. Fixings showing on surface of sign: Must not detract from the message being displayed

COMPLETION

910 DOCUMENTATION

1. Submit
 - Manufacturer's maintenance instructions.
 - Guarantees, warranties, test certificates, record schedules and logbooks.

Ω End of Section

N25 PERMANENT ACCESS AND SAFETY EQUIPMENT

CLAUSES

2 TO BE READ WITH PRELIMINARIES/ GENERAL CONDITIONS.

TYPES OF SYSTEM/ EQUIPMENT

141 FOLDING LADDER SYSTEM

1. Description: To atrium roof & stair core 3 roof
2. Manufacturer: Safety At Height Limited, Unit 1 Pennine View, Marple, Stockport, Cheshire SK6 7JW
 - Reference: SOLL PivotLoc ladder
3. Position and dimensions: As drawing GCH-IBI-XX-XX-DR-A-240-0010_Roof Plan
4. Height, excluding any extension units: To atrium roof approx. 1700mm. To stair core 3 roof approx. 4400mm. Site measure to confirm
5. Carrying capacity (persons): One
6. Material: Aluminium
 - Finish: Anodised
7. Connection to building superstructure: Anchored to masonry in accordance with manufacturer's guidance.

210A PERSONAL FALL PROTECTION EQUIPMENT

1. Description: To atrium roof & stair core 3 roof
2. Type: Guided type fall restraint
3. Manufacturer: Latchways plc, Hopton Park, Devizes, Wiltshire, SN10 2JP
 - System reference: Latchways ManSafe guided type fall restraint system for single ply membrane roofing
4. Anchorage device: ManSafe horizontal 7x7 316S stainless steel cable, conforming to BS MA 29
5. Anchorage points: 'Constant Force' posts (end, intermediate, corner and variable posts as required) for single ply roofing
 - Finish: Polyester powder coated
 - Colour: Grey
 - Attachment: Mechanically attach through insulation to crowns of metal roof deck using Latchways toggle bolts
6. Overall system length: As shown on roof layout(s)
7. Intermediate support spacing: 6-10 m and as designed by contractor approved by the system manufacturer to meet requirements of manufacturer's design software
8. Accessories/ Other requirements: Complete set of Personal Protective Equipment (PPE) in suitable PPE holdall, comprising:
 - 1 no removable transfastener – part number 85085-00
 - 1 no personal rescue device
 - 1 no energy absorbing lanyard of appropriate length
9. Installation: In accordance with BS 7883 by the system manufacturer or a contractor approved by the system manufacturer
10. Structural anchors: Type recommended by the system manufacturer to suit the structure/ fabric into which they will be fixed

DESIGN/ PERFORMANCE REQUIREMENTS

425 INFORMATION TO BE PROVIDED BEFORE COMMENCEMENT OF MANUFACTURE OF SYSTEM

1. Submit the following system particulars;
 - Detailed drawings fully describing fabrication and installation.
 - Proposed fixing anchor details relevant to structural design and construction of building.

430 SAFETY

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

440 DESIGN LIFE/ MAINTENANCE PROGRAMME

1. Design life of access/ safety system: Not less than: 30 years
2. Schedule for maintenance and for replacement of components: Submit

460 ASSESSMENT/ TESTING OF ANCHOR DEVICES

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

FABRICATION, ASSEMBLY AND INSTALLATION

510 FABRICATION AND ASSEMBLY GENERALLY

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

520 PROTECTION

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

530 SUITABILITY OF STRUCTURE/ FABRIC

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

535 EXECUTION GENERALLY

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

540 MECHANICAL FIXINGS

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

550A FASTENERS, INSERTS AND BOLTS

1. Supplier: N25/ 210A fall restraint system equipment manufacturer

560 FIXINGS FOR SECURING EQUIPMENT

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

612 IDENTIFICATION AND REGISTRATION LABELS FOR N25/ 210A GUIDED FALL RESTRAINT SYSTEM

1. Provision: Provide and fix to each piece of equipment a permanent label giving:
 - Manufacturer's name, address and telephone number
 - Name and/ or reference code of site and system
 - Serial number and year of manufacture
 - Maximum number of users to be attached at any time
 - Date of installation/ last inspection
 - PPE requirements
 - Whether system is an arrest or restraint system
2. Location: In positions such that labels can be easily read

640 MARKING OF ANCHOR DEVICES

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

820 OPERATING INSTRUCTIONS

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

830 OPERATING AND MAINTENANCE MANUAL

1. General: Provide, for inclusion in the Building Manual, printed instructions and recommended procedures to be established by the Employer for operating and routinely maintaining the equipment. Provide diagrams where appropriate
2. Content
 - Instructions for assembling/ erecting equipment for use.
 - Comprehensive operating instructions, including safety and emergency procedures, for all motions including upward, downward and lateral travel, and slew.

- Servicing and planned maintenance procedures, including assembly instructions where maintenance necessitates dismantling of machinery parts.
- List of replacement parts, with references.
- Recommended procedures for testing equipment.

840 AS INSTALLED DRAWINGS

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

Ω End of Section

P10 SUNDRY INSULATION/PROOFING WORK/FIRE STOPS

CLAUSES

1 SUNDRY INSULATION/ PROOFING WORK

2 TO BE READ WITH PRELIMINARIES/ GENERAL CONDITIONS.

TYPES OF INSULATION

190A INSULATION FITTED BETWEEN STUDS

1. Manufacturer: Rockwool Ltd, Pencoed, Bridgend, CF35 6NY
 - Product reference: Rockwool Flexi slabs
2. Material: Mineral wool to BS EN 13162
 - Facing: Not required
3. Recycled content: Not applicable
4. Thickness: 140 mm
5. Installation requirements
 - Joints: Butted, no gaps
 - Fasteners: Use where necessary to retain insulation and/ or prevent slumping

310B VAPOUR CONTROL LAYER

1. Description: To g10/ 150 cold rolled steel framing system
2. Manufacturer: Icopal Ltd, Barton Dock Road, Stretford, Manchester, M32 0YL
 - Product reference: Reflex 275 aluminium foil faced polyester reinforced polyethylene vapour barrier
3. Material: Aluminium foil faced polyester reinforced polyethylene
4. Minimum vapour resistance: 43,000 MN s/g
5. Installation requirements:
 - Setting out: Joints minimised
 - Method of fixing: Double sided sealant tape to metal framing
 - Joints: At supports only, lapped 150 mm minimum
 - Openings: Membrane fixed to reveals
 - Joints and edges: Sealed with double sided tape with vapour resistivity not less than the vapour control layer
6. Penetrations: Sealed
7. Other requirements: Prime substrates as necessary

320A BREATHER MEMBRANE

1. Manufacturer: DuPont (UK) Ltd, Bristol and Bath Science Park, Dirac Crescent, Emersons Green, Bristol, BS16 7FR
 - Product reference: Tyvek StructureGuard high density polyethylene breather membrane
2. Installation requirements:
 - Setting out: Joints minimized. Membrane to form a continuous barrier to prevent water, snow and wind blown dust reaching the substrate
 - Method of fixing: Galvanized, sherardized or stainless steel large head nails or stainless steel staples
 - Joints: Lapped 100 mm minimum horizontally and 150 mm minimum vertically

- Openings: Membrane fixed to reveals
 - Bottom edges: Membrane lapped over flashings, sills, etc. to allow free drainage to the exterior
3. Penetrations: Sealed

420 SLEEVED MINERAL WOOL SMALL CAVITY BARRIERS

432 CAVITY BARRIERS

1. Manufacturer: PFC Corofil Fire Stop Products, Units 3 & 4, King George's Trading Estate, Davis Road, Chessington, Surrey KT9 1TU
 - Product reference: C450 Cavity Firestop
2. Fire resistance rating: Up to 120 mins
3. Thickness: 100 mm
 - Installation requirements: Continuous, with minimum joints
 - Fasteners: Multi purpose brackets in accordance with manufacturer's installation instructions
4. Other requirements:

433 FIRE RESISTING PROFILE FILLERS TO METAL ROOF DECK DIRECTLY ABOVE FIRE RESISTING AND/ OR ACOUSTICALLY IMPROVED PARTITIONS

1. Manufacturer: PFC Corofil Fire Stop Products, Units 3 & 4, King George's Trading Estate, Davis Road, Chessington, Surrey KT9 1TU
 - Product reference: Corofil C144 high density compressible mineral fibre fire stop blocks
2. Fire resistance rating: To BS 476-20, 60/60 integrity/ insulation
3. Profile/ length:
 - Profile: Precisely matching profile of roof decking
 - Length: Minimum 75 mm but in length(s) to span full width of partition or, where partition incorporates defection head, head plate
4. Installation:
 - Insert blocks into profiles ensuring minimum 5 mm compression ensuring that faces align with edges or outer boards or, where partition incorporates defection head, head plate.
 - Apply Fastight coating to nominal 1.0 mm thickness over exposed faces of blocks.
 - Point in any minor gaps (2-3 mm wide) using Corofil Acoustic Intumescent Sealant.

433A FIRE RESISTING PROFILE FILLERS TO METAL ROOF DECK DIRECTLY ABOVE EXTERNAL FABRIC

1. Manufacturer: PFC Corofil Fire Stop Products, Units 3 & 4, King George's Trading Estate, Davis Road, Chessington, Surrey KT9 1TU
 - Product reference: Corofil C144 high density compressible mineral fibre fire stop blocks
2. Fire resistance rating: To BS 476-20, 60/60 integrity/ insulation
3. Profile/ length:
 - Profile: Precisely matching profile of roof decking
 - Length: Minimum 75 mm but in length(s) to span full width of wall or, where partition incorporates defection head, head plate
4. Installation:
 - Insert blocks into profiles ensuring minimum 5 mm compression ensuring that faces align with edges or outer boards or, where partition incorporates defection head, head plate.
 - Apply Fastight coating to nominal 1.0 mm thickness over exposed faces of blocks.
 - Point in any minor gaps (2-3 mm wide) using Corofil Acoustic Intumescent Sealant.

434 FIRE RESISTING PROFILE FILLERS TO COMPOSITE FLOOR SLAB DIRECTLY ABOVE FIRE RESISTING AND/ OR ACOUSTICALLY IMPROVED PARTITIONS

1. Manufacturer: PFC Corofil Fire Stop Products, Units 3 & 4, King George's Trading Estate, Davis Road, Chessington, Surrey KT9 1TU
 - Product reference: Corofil C144 high density compressible mineral fibre fire stop blocks
2. Fire resistance rating: To BS 476-20, 60/60 integrity/ insulation
3. Profile/ length:
 - Profile: Precisely matching profile of composite floor decking
 - Length: Minimum 75 mm but in length(s) to span full width of partition or, where partition incorporates defection head, head plate
4. Installation:
 - Insert blocks into profiles ensuring minimum 5 mm compression ensuring that faces align with edges or outer boards or, where partition incorporates defection head, head plate.
 - Apply Fastight coating to nominal 1.0 mm thickness over exposed faces of blocks.
 - Point in any minor gaps (2-3 mm wide) using Corofil Acoustic Intumescent Sealant.

435 FIRE RESISTING LINEAR GAP SEALS

1. Manufacturer: PFC Corofil Fire Stop Products, Units 3 & 4, King George's Trading Estate, Davis Road, Chessington, Surrey KT9 1TU
 - Product reference: Linear Gap Seal Strips CLGS
2. Fire resistance rating: To BS 476-20, 120/120 integrity/ insulation
3. Profile/ length:
 - Profile: Rectangular strip
 - Length: To suit location, see detailed drawings
4. Installation:
 - Insert blocks into gap ensuring minimum 5 mm compression ensuring that faces align with edges of walls/ slabs
 - Fastight coating to nominal 1.0 mm thickness over exposed faces
 - Point in any minor gaps (2-3 mm wide) using Corofil Acoustic Intumescent Sealant.

Ω End of Section

P12 FIRE STOPPING SYSTEMS

CLAUSES

2 TO BE READ WITH PRELIMINARIES/ GENERAL CONDITIONS.

GENERAL

131 FIRESTOPPING SYSTEM TO INDIVIDUAL SERVICES PENETRATIONS

1. Description: Upvc and other combustible pipework
2. Fire resistance: To match fire resisting walls/ partitions/ floors
3. Penetration seal: Firestop collar as clause 380
 - Pipework outside diameter: Min 50 mm/ max 160 mm
4. Installation: As clause 731

132 FIRE STOPPING SYSTEM TO INDIVIDUAL SERVICES PENETRATIONS

1. Description: Sheathed cables
2. Fire resistance: To match fire resisting walls/ partitions/ floors
3. Penetration seal: Firestop cable collar as clause 381
 - Cable outside diameter: Single max 50 mm/ bunched max 100 mm with max single cable 21 mm
4. Installation: As clause 732

133 FIRE STOPPING SYSTEM TO INDIVIDUAL SERVICES PENETRATIONS

1. Description: Insulated metal pipework
2. Fire resistance: To match fire resisting walls/ partitions/ floors
3. Penetration seal: Firestop bandage as clause 375
 - Pipework outside diameter: Max 90 mm
 - Insulation thickness: Max 40 mm
4. Installation: As clause 733

134 FIRE STOPPING SYSTEM TO INDIVIDUAL SERVICES PENETRATIONS

1. Description: Upvc and other combustible pipework
2. Fire resistance: To match fire resisting walls/ partitions/ floors
3. Penetration seal: Firestop wrap strip as clause 375
 - Pipework outside diameter: Min 50 mm/ max 160 mm
4. Installation: As clause 734

135 FIRESTOPPING/ ACOUSTIC REINSTATEMENT TO SERVICES BACK BOXES

1. Description: To fire resisting and/ or acoustically enhanced plasterboard/ metal stud partitions
2. Joint filler: Intumescent acoustic putty pad as clause 351
 - Size or thickness:
 - Single back box: 170 x 170 mm
 - Double back box: 170 x 230 mm

136 FIRE STOPPING SYSTEM TO INDIVIDUAL SERVICES PENETRATIONS

1. Description: Cables, except unsheathed
2. Fire resistance: To match fire resisting walls/ partitions

3. Joint filler: Self-adhesive firestop cable disc as clause 352

- Cable/ conduit outside diameter:
 - Cable (except unsheathed): Single/ bunched max 21 mm
 - Conduit/ tube: Copper/ upvc max 16 mm

137 FIRE STOPPING SYSTEM TO INDIVIDUAL SERVICES PENETRATIONS

1. Description: Sheathed cables/ conduit and single/ bunched cables
2. Fire resistance: To match fire resisting walls/ partitions
3. Joint filler: Firestop intumescent sealant as clause 338A
 - Cable/ conduit outside diameter:
 - Cable: Single max 80 mm/ bunched max 100 mm with max single cable 21 mm
 - Conduit: Steel max 16 mm/ upvc max 32 mm
4. Application: As clause 736

138 REINSTATABLE FIRESTOPPING SYSTEM TO INDIVIDUAL SERVICES PENETRATIONS

1. Description: Sheathed cables
2. Fire resistance: To match fire resisting walls/ partitions
3. Penetration seal: Firestop sleeve as clause 382
 - Cable outside diameter: Single max 80 mm/ bunched max 86 mm with max single cable 21 mm
4. Installation: As clause 735

141 FIRE STOPPING SYSTEM TO MULTIPLE SERVICES PENETRATIONS

1. Description: Non-combustible metallic conduit/ pipework, upvc and other combustible pipework, single/ bunched cable penetrations, cable trays
2. Fire resistance: To match fire resisting walls/ partitions
3. Board barrier:
 - Material: Mineral wool intumescent coated rigid batts as clause 360
 - Thickness: 50 mm
 - Number of layers:
 - To concrete/ masonry/ and plasterboard/ metal stud partitions with weighted sound reduction index of Rw42dB or less: Type A (one layer)
 - To concrete/ masonry/ and plasterboard/ metal stud partitions with weighted sound reduction index of Rw43dB or more: Type B (two layers)
 - Pipe outside diameter:
 - Steel pipes: Max 250 mm
 - Copper pipes: Max 88.9 mm
 - upvc and other combustible pipework: Max 40 mm internal diameter without intumescent pipe collars/ wraps/ sleeves/ max 160 mm external diameter with intumescent pipe collars/ wraps/ sleeves
 - Cable outside diameter: Max 75 mm
 - Steel trunking: Max 250 x 250 mm
 - Framing: Form apertures in plasterboard/ metal stud partitioning using metal studs/ channels lined with plasterboard
 - Finish: Not applicable

SYSTEM PERFORMANCE

241 FIRE PERFORMANCE

1. Description: Of firestopping systems
2. Resistance to fire: To BS 476-20 and -22, matching integrity and insulation performance of penetrated substrate
3. Reaction to fire: In accordance with Building Regulations, Class 0
4. Smoke resistance:
 - Air leakage rate (maximum): 10 m³/m²·hr

PRODUCTS

305 PRODUCT CERTIFICATION

1. Certification: For products specified generically, submit evidence of compliance with the specification
2. Acceptable evidence:
 - LPCB /FM approvals
 - Test reports and/or assessments by NAMAS approved laboratories. Tests to be representative of end use application
 - Test reports/ assessments by approved laboratories from EU member states. Tests to be representative of end use application
 - Engineering judgements by manufacturer to be under the terms of the Passive Fire Protection Federation 'Guide to Undertaking assessments in lieu of Fire Tests'

335A INTUMESCENT FOAM

1. Manufacturer: Hilti (Gt Britain) Ltd, 1 Trafford Wharf Road, Trafford Park, Manchester, M17 1BY
 - Product reference: CFS-F FX firestop foam
2. Application: As clause 661

338A INTUMESCENT SEALANT

1. Manufacturer: Hilti (Gt Britain) Ltd, 1 Trafford Wharf Road, Trafford Park, Manchester, M17 1BY
 - Product reference: CFS-IS firestop intumescent sealant

339 FIRESTOP FILLER MASTIC

1. Manufacturer: Hilti (Gt Britain) Ltd, 1 Trafford Wharf Road, Trafford Park, Manchester, M17 1BY
 - Product reference: CFS-FIL firestop filler mastic

351 FIRESTOP PUTTY PAD

1. Manufacturer: Hilti (Gt Britain) Ltd, 1 Trafford Wharf Road, Trafford Park, Manchester, M17 1BY
 - Product reference: CFS-P PA firestop putty pad

352 SELF-ADHESIVE FIRESTOP CABLE DISC

1. Manufacturer: Hilti (Gt Britain) Ltd, 1 Trafford Wharf Road, Trafford Park, Manchester, M17 1BY
 - Product reference: CFS-D 25 self-adhesive firestop cable disc

360 MINERAL WOOL RIGID BATTS

1. Standard: To BS EN 13162.
2. Surface treatment: Ablative coating
3. Manufacturer: Hilti (Gt Britain) Ltd, 1 Trafford Wharf Road, Trafford Park, Manchester, M17 1BY
 - Product reference: CP 670 firestop acoustic board, Type A (one layer) and Type B (two layers)
4. Recycled content: None permitted

367 FIRESTOP BLOCKS

1. Manufacturer: Hilti (Gt Britain) Ltd, 1 Trafford Wharf Road, Trafford Park, Manchester, M17 1BY
 - Product reference: CFS-BL firestop block

375 PIPE COLLAR

1. Type: Insulated wrap pipe collar
2. Manufacturer: Hilti (Gt Britain) Ltd, 1 Trafford Wharf Road, Trafford Park, Manchester, M17 1BY
 - Product reference: CFS-B firestop bandage

376 PIPE COLLAR

1. Type: Concealed intumescent pipe collar
2. Manufacturer: Hilti (Gt Britain) Ltd, 1 Trafford Wharf Road, Trafford Park, Manchester, M17 1BY
 - Product reference: CFS-W firestop wrap strip

380 PIPE COLLAR

1. Type: Surface mounted intumescent pipe collar
2. Manufacturer: Hilti (Gt Britain) Ltd, 1 Trafford Wharf Road, Trafford Park, Manchester, M17 1BY
 - Product reference: CFS-C P firestop collar

381 CABLE COLLAR

1. Type: Surface mounted intumescent cable collar
2. Manufacturer: Hilti (Gt Britain) Ltd, 1 Trafford Wharf Road, Trafford Park, Manchester, M17 1BY
 - Product reference: CFS-CC firestop cable collar

382 FIRESTOP SLEEVE

1. Type: Surface mounted intumescent sleeve
2. Manufacturer: Hilti (Gt Britain) Ltd, 1 Trafford Wharf Road, Trafford Park, Manchester, M17 1BY
 - Product reference: CFS-SL firestop sleeve

385 SEALANT BACKING MATERIAL

1. Manufacturer: Hilti (Gt Britain) Ltd, 1 Trafford Wharf Road, Trafford Park, Manchester, M17 1BY
 - Product reference: CF 125-50 fire rated backing foam

390B SEALANT

1. Type: Fire resisting acrylic
2. Manufacturer: Hilti (Gt Britain) Ltd, 1 Trafford Wharf Road, Trafford Park, Manchester, M17 1BY
 - Product reference: CFS-S ACR firestop acrylic sealant

EXECUTION

610 THIRD-PARTY-CERTIFIED INSTALLER

1. Certification: For the technical competency of the installer of the evidence of compliance with a third party installation certification scheme
2. Acceptable evidence: FIRAS or LPCB Installer Certification

621 WORKMANSHIP GENERALLY

1. Installation standard: By third party certified installer as clause 610
2. Evidence of accreditation and installation training from product and system manufacturer: Submit before work commences
3. Gaps: Seal between building elements and services, to provide effective resistance to fire and the passage of smoke. Allow for capping sealants where required. Finish flush with surrounds
4. Traceability: Mark all firestopped service penetrations with permanent label showing unique reference number, date of installation, date inspected and name of installer
5. Recording of penetration seals: Provide records of locations of all firestop seals and necessary data for incorporation into Health & Safety File
6. Adjacent surfaces: Prevent overrun of filler, sealant or mortar on to finished surfaces

661 APPLYING P12/ 335A FIRESTOP FOAM

1. New joints: Remove builder's debris, mortar droppings, grease, and other contaminants
2. Old joints: Clean and remove existing sealant from each joint
3. Services: Clean cables, trays and pipes of dust and grease
4. Priming: Not required
5. Openings in walls up to 145 mm thick: Frame opening with strips of plasterboard to provide minimum depth of 145 mm
6. Application: Fill joint to approximately half depth, allowing foam to expand to face of joint/ opening to give 145 mm depth
7. Trimming: Trim excess foam to give a neat, flush appearance

712 INSTALLING FIRESTOP COATED BOARDS

1. Installing firestop coated boards: Fit tight into void between the penetrating services and the surrounding construction to form a solid barrier
2. Pre-coating: Precoat penetrating services to full depth of seal using intumescent acoustic fire mastic as clause 390B
3. Face of board: Flush with one face of wall, floor or soffit
4. Joints between batts: Close butt joints, seal with firestop acrylic sealant as clause 390B
5. Sealant: Coat cut edges, surface of opening and joints between boards and seal gaps around penetrating services with firestop acrylic sealant as clause 390B
6. Penetrating services: Coat with CFS-CT firestop coating, dry film thickness 1 mm, 300 mm each side of opening
7. Finish: Overcoat with CFS-CT firestop coating to a dry film thickness of 0.7 mm

731 FIXING PIPE COLLARS

1. Collar fixing: Fix to face of plasterboard/ metal stud partitioning using min 8 mm fire rated metal anchors/ plug and screw to face of masonry wall
2. Gap around collar: Close annular space around both sides min 25 mm deep using fire resisting acrylic sealant as clause 390B

732 FIXING FIRESTOP CABLE COLLARS

1. Collar fixing: Fix to face of plasterboard/ metal stud partitioning using min 8 mm fire rated metal anchors/ plug and screw to face of masonry wall
2. Gap between collar and cable(s): Fill gaps between cable(s) and cable collar min 20 mm deep using firestop filler mastic as clause 339

733 FIXING FIRESTOP BANDAGES

1. Bandage fixing: Wrap insulated pipework in two layers and an overlap of firestop bandage secured with steel bands or wire > 0.7 mm
2. Bandage positioning: Projecting 62.5 mm on each side of opening
3. Gap around firestop bandage: Close any remaining annular space between firestop bandage and opening using fire resisting acrylic sealant as clause 390B

734 FIXING FIRESTOP WRAP

1. Wrap fixing: Wrap around pipework both sides of wall/ partition and secure with adhesive strip
2. Wrap positioning: Push wraps into annular gap flush with face of wall each side
3. Gap around wrap: Close annular space each side min 15 mm deep in masonry walls/ 25 mm deep in plasterboard/ metal stud partitions using fire resisting acrylic sealant as clause 390B

735 FIXING FIRESTOP SLEEVE

1. Installation: Seal to face of wall/ partition using firestop acrylic sealant as clause 390B

736 APPLYING FIRESTOP INTUMESCENT SEALANT

1. Backfill: Tightly packed mineral wool, min 50 mm deep
2. Application of sealant: Apply firestop intumescent sealant as clause 338A to min 25 mm depth ensuring sealant is in contact with all surfaces

740 INSERTING SEALANT BACKING MATERIAL

1. Preparation: Removed debris from service penetration
2. Installation: Insert joint filler to full depth of joint leaving sufficient depth to apply sealant

745 APPLYING SEALANTS GENERALLY

1. Application: As section Z22

COMPLETION

910 CLEANING

1. Masking tapes: Remove
2. Cleaning: Clean off splashes and droppings. Wipe down finishes

920A INSPECTION

1. Notice for inspection (minimum): 5 working days
2. Inspection body: Arrange for inspection by accreditation body (FIRAS or LPCB) during and upon completion of firestopping works

Ω End of Section

P20 UNFRAMED ISOLATED TRIMS/SKIRTINGS/SUNDRY ITEMS

TO BE READ WITH PRELIMINARIES/ GENERAL CONDITIONS

110 SOFTWOOD

1. Description: Backrails to coat hooks and equipment clips
2. Quality of wood and fixing: To BS 1186-3
 - Species: Contractor's choice
 - Class: 2
3. Moisture content at time of fixing: 9-13%
4. Preservative treatment: Not required
5. Fire rating: Not applicable
6. Profile: Rectangular with exposed arrises splayed to a 2 mm flat plane
 - Finished size: 19 x 94 mm
7. Finish as delivered: Prepared and primed, as section M60
8. Fixing: Screw fixed at centres shown on detail drawing and pelleted where fixings otherwise visible

115 SOFTWOOD

1. Description: Backrails to equipment pegs
2. Quality of wood and fixing: To BS 1186-3
 - Species: Contractor's choice
 - Class: 2
3. Moisture content at time of fixing: 9-13%
4. Preservative treatment: Not required
5. Fire rating: Not applicable
6. Profile: Rectangular with exposed arrises splayed to a 2 mm flat plane
 - Finished size: 32 x 94 mm
7. Finish as delivered: Prepared and primed, as section M60
8. Fixing: Screw fixed at centres shown on detail drawing and pelleted where fixings otherwise visible

130 HARDWOOD

1. Description: Skirtings
2. Quality of wood and fixing: To BS 1186-3
 - Species: Ash
 - Class: 1
3. Moisture content at time of fixing: 9 -13%
4. Preservative treatment: Not required
5. Fire rating: Not applicable
6. Profile: Rectangular with exposed arrises splayed to a 2 mm flat plane
 - Finished size: 14 x 94 mm
7. Finish as delivered: Satin clear lacquered
8. Fixing: Plugged and screwed to masonry or screw fixed to metal stud partitions with fixings concealed with hardwood pellets

176 PROPRIETARY WALL PROTECTION RAIL

1. Manufacturer: Construction Specialties (UK) Ltd, 1010 Westcott Venture Park, Westcott, Aylesbury, Bucks, HP18 0XB
 - Product reference: Acrovyn ref BCR50 wall protection rail
2. Size: 127 mm
 - Projection from wall: 38 mm
3. Components:
 - Black vinyl mounting cushions at maximum 600 mm centres
 - Continuous aluminium vinyl retainer with buffer cushion
 - Acrovyn vinyl/acrylic profile cover snap fixed to aluminium retainer
 - End caps
 - Reveal trims between end caps and cover to wall protection rail
4. Finish/Colour: Pebblette finish in colour(s) to CA's requirements from manufacturer's full colour range
5. Fixing: Aluminium retainer fixed through mounting cushions and plasterboard to s/w bearers within metal stud partition or, as appropriate, plugged and screwed to masonry background

185 PROPRIETARY CORNER PROTECTOR

1. Manufacturer: Construction Specialties (UK) Ltd, 1010 Westcott Venture Park, Westcott, Aylesbury, Bucks, HP18 0XB
 - Product reference: Acrovyn ref SSM20 surface mounted corner protectors
2. Size: 51 x 51 mm
 - Corner radius: 6.5 mm
3. Components:
 - Profiled aluminium retainer
 - Acrovyn vinyl/acrylic profile cover snap fixed to aluminium retainer
 - End caps
4. Finish/Colour: Pebblette finish in colour(s) to CA's requirements from manufacturer's full colour range
5. Fixing: Aluminium retainer fixed to wall using two rows of nylon tappits (supplied by corner protector manufacturer) at 400 mm centres

186 PROPRIETARY CORNER PROTECTOR

1. Manufacturer: Construction Specialties (UK) Ltd, 1010 Westcott Venture Park, Westcott, Aylesbury, Bucks, HP18 0XB
 - Product reference: Acrovyn ref SM20 surface mounted corner protectors
2. Size: 76 x 76 mm
 - Corner radius: 6.5 mm
3. Components:
 - Profiled aluminium retainer
 - Acrovyn vinyl/acrylic profile cover snap fixed to aluminium retainer
 - End caps
4. Finish/Colour: Pebblette finish in colour(s) to CA's requirements from manufacturer's full colour range
5. Fixing: Aluminium retainer fixed to wall using two rows of nylon tappits (supplied by corner protector manufacturer) at 400 mm centres

187 PROPRIETARY 135° CORNER PROTECTOR

1. Manufacturer: Construction Specialties (UK) Ltd, 1010 Westcott Venture Park, Westcott, Aylesbury, Bucks, HP18 0XB
 - Product reference: Acrovyn ref SM20/ 135 surface mounted corner protectors
2. Size: 76 x 76 mm
3. Components:
 - Profiled aluminium retainer
 - Acrovyn vinyl/acrylic profile cover snap fixed to aluminium retainer
 - End caps
4. Finish/Colour: Pebblette finish in colour(s) to CA's requirements from manufacturer's full colour range
5. Fixing: Aluminium retainer fixed to wall using two rows of nylon tappits (supplied by corner protector manufacturer) at 400 mm centres

271 PLASTICS VENEERED BOARD

1. Description: Cillboards
2. Standard: To BS 4965
 - Core: 18 mm ply (bonding quality Class 2 to BS EN 314:Part 2) core built up at front edge to give 36 x 18 mm post-formed downstand
 - Durability class: D2
 - Laminate grade: HG
 - Fire rating: Not applicable
3. Thickness: 1.0 mm
4. Colour/Finish: To CA's requirements from the following ranges:
 - Egger (UK) Ltd, "Fantasy" range
 - Formica Group, "Collection Patterns" range
 - Polyrey UK, "Patterns" range
5. Balancing veneer: Non-decorative
6. Finished thickness: 20 mm
7. Edges: Fully bonded and trimmed, to all edges
8. Support/ Fixing: With panel adhesive to preservative treated battens plugged and screwed to blockwork inner leaf

274 PLASTICS VENEERED BOARD

1. Description: Shelves
2. Standard: To BS 4965
 - Core: 18 mm 650-720 kg/m³ density particleboard core
 - Durability class: D2
 - Laminate grade: HG
 - Fire rating: Not applicable
3. Thickness: 1.0 mm
4. Colour/Finish: To CA's requirements from the following ranges:
 - Egger (UK) Ltd, "Uni Colours" range
 - Formica Group, "Collection Colours" range
 - Polyrey UK, "Papago Color" range
5. Balancing veneer: To match face

6. Finished thickness: 20 mm
7. Edges:
 - Type: 2 mm colour matching pvc lippings with radiused leading edges
 - Samples:

Before placing orders, submit sample of each colour
8. Support/ Fixing:
 - Screw fixed from beneath to fixed shelf brackets
 - Screw fixed from beneath through plastic nurgles clipped into adjustable shelf brackets

422 BRACKET SUPPORTS

1. Description: Shelves to mirror/shelf assemblies
2. Material: Mild Steel
 - Finish: Polyester powder coating
 - Colour: White (RAL 9010)
3. Size: As shown on detail drawing
4. Fixing: Screw fixed through plasterboard to s/w bearers within metal stud partition/plugged and screwed to masonry

425 BRACKET SUPPORTS

1. Description: Adjustable shelving
2. Manufacturer: Click System Components Ltd, Hillside House, Stratford Road, Mickleton, Gloucestershire, GL55 6SR
 - Product reference: Click ref WU aluminium wall uprights and ref SB brackets
3. Type/ Size: Wall uprights in lengths shown on Furniture/Fittings layout drawing(s) with brackets sized to suit shelf depths
4. Finish/ Colour: 5 micron coated satin silver anodised
5. Fixing: Uprights screw fixed through plasterboard to s/w bearers within metal stud partition/plugged and screwed to masonry using roundhead wood screws

430 BRACKET SUPPORTS

1. Description: Fixed shelves
2. Manufacturer: Spur Shelving, Spur House, Otterspool Way, Watford, Herts, WD2 8HT
 - Product reference: Strongbeam reinforced shelf brackets sized to suit shelf depths
3. Type/ Size: As shown on detail drawing
4. Finish/ Colour: White polyester powder coated
5. Fixing: Screw fixed through plasterboard to s/w bearers within metal stud partition/plugged and screwed to masonry

EXECUTION

510A INSTALLATION GENERALLY

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

P21 DOOR/ WINDOW IRONMONGERY

CLAUSES

2 TO BE READ WITH PRELIMINARIES/ GENERAL CONDITIONS.

PRE-TENDER - NOT USED

GENERAL

110 GENERAL REQUIREMENTS

1. Detailed requirements and locations of ironmongery are shown on Ironmongery Schedule(s).
2. Fixing: As sections L10 and L20
3. Submittals:
 - Copies of all relevant BS and BS EN test reports
 - Supplier's Declarations of Conformity relating to CE Marking for hinges, locks, closing devices and panic/emergency exit hardware, where intended for use on fire-resisting and/or route of escape doors, and as currently listed and published by the Guild of Architectural Ironmongers.
 - Evidence of supplier's ISO 9001, Quality Management Certification
 - Copies of all UL listing and Certifire certificates

121A IRONMONGERY FROM SINGLE PROPRIETARY RANGE

1. Manufacturer: Allgood plc, 76 King Street, Manchester, M2 4NH
 - Product reference: Modric range
2. Principal material/ finish: Grade 1.4401 (316) stainless steel
3. Hinges: By specified doorset manufacturer
4. Items unavailable within selected range: Submit proposals for use of alternatives from manufacturer's complementary ranges
5. Warranty: Obtain from the ironmongery manufacturer, on behalf of the client, a 10 year single source warranty covering the repair or replacement, free of charge, of any items which are or become defective due to faulty materials or workmanship, subject only to the implementation of a future regular maintenance regime in accordance with the manufacturer's O & M manual

150A IRONMONGERY FOR DOORSETS

1. Provide ironmongery required for each doorset in two separate packs (projecting and non-projecting ironmongery) clearly labelled to identify the doorset to which it belongs. Deliver the packs of non-projecting items to the doorset manufacturer for factory fitting and deliver the other packs to site.

170A IRONMONGERY FOR FIRE DOORS

1. Relevant products: Ironmongery fixed to, or morticed into, the component parts of a fire resisting door assembly
2. Compliance: Ironmongery included in successful tests to BS 476-22 or BS EN 1634-1 on door assemblies similar to those proposed
 - Certification: Submit evidence of successful testing by UKAS accredited laboratory
3. Melting point of components (except decorative, non-functional parts): 800°C minimum

DOOR HANGING DEVICES - NOT USED

WINDOW HANGING DEVICES - NOT USED

DOOR OPERATING DEVICES

412A PERFORMANCE SPECIFICATION FOR OVERHEAD DOOR CLOSERS

1. Description:
2. Manufacturer: As clause P21/ 121A
3. Standard: To BS EN 1154
 - Door closing devices to fire/ smoke control doors: CE marked
4. Minimum classification grades
 - Category of use: 4
 - Durability: 8
 - Door closer power size: EN 2-6
 - Suitability for use on fire/ smoke doors: 1
 - Safety: 1
 - Corrosion resistance: 4
5. Type: Face fixed except where stated otherwise in Ironmongery Schedule(s)
6. Other functions: Back check, latch action and speed control
7. Casing finish: To match finish of specified ironmongery range
8. Operational adjustment
 - Variable power: Matched to the sizes and weights of doors
 - Latched doors: Override latches and/ or door seals when fitted
 - Unlatched doors: Hold shut under normal working conditions
 - Closing against smoke seals of fire doors: Positive. No gaps

453A PERFORMANCE SPECIFICATION FOR SINGLE ACTION FLOOR SPRINGS

1. Description:
2. Manufacturer: As clause P21/ 121A
3. Standard: To BS EN 1154
 - Door closing devices to fire/ smoke control doors: CE marked
4. Minimum classification grades:
 - Category of use: 4
 - Durability: 8
 - Door closer power size: 3-6
 - Suitability for use on fire/ smoke doors: 1
 - Safety: 1.
 - Corrosion resistance: 4
5. Other functions: Single action adjustable power, adjustable closing speed, fixed backcheck from 70°
6. Material/ finish: Stainless steel cover plate
7. Operational adjustment:
 - Variable power: Matched to size, weight and location of doors
 - Latched doors: Override latches and/ or door seals when fitted
 - Unlatched doors: Hold shut under normal working conditions

454A PERFORMANCE SPECIFICATION FOR DOUBLE ACTION FLOOR SPRINGS

1. Description:
2. Manufacturer: As clause P21/ 121A
3. Standard: To BS EN 1154
 - Door closing devices to fire/ smoke control doors: CE marked
4. Minimum classification grades:
 - Category of use: 3
 - Durability: 8
 - Door closer power size: 3-5
 - Suitability for use on fire/ smoke doors: 1
 - Safety: 1
 - Corrosion resistance: 4
5. Other functions: Double action adjustable power, adjustable closing speed, fixed backcheck from 70°
6. Material/ finish: Stainless steel cover plate
7. Operational adjustment:
 - Variable power: Matched to size, weight and location of doors
 - Latched doors: Override latches and/ or door seals when fitted
 - Unlatched doors: Hold shut under normal working conditions

473A PERFORMANCE SPECIFICATION FOR ELECTROMAGNETIC HOLD OPEN OVERHEAD DOOR CLOSERS (24 V)

1. Description:
2. Manufacturer: As clause P21/ 121A
3. Standard: To BS EN 1155
 - Electromagnetic devices to fire/ smoke control doors: CE marked
4. Type: Electro-hydraulic hold open overhead door closer
5. Minimum classification grades:
 - Category of use: 3
 - Durability: 8
 - Hold open power size: 1-6
 - Suitability for use on fire/ smoke doors: 1
 - Safety: 1
 - Corrosion resistance: 4
6. Material/ finish: To match finish of specified ironmongery range
7. Means of release: Alarm system and/ or failure of power supply
8. Test switch: Located in a convenient position adjacent to door
9. Operational adjustment of integral closer:
 - Variable power: Matched to size, weight and location of doors
 - Latched doors: Override latches and/ or door seals when fitted
 - Unlatched doors: Hold shut under normal working conditions

474A PERFORMANCE SPECIFICATION FOR ELECTROMAGNETIC SWING-FREE OVERHEAD DOOR CLOSERS (24 V)

1. Description:

2. Manufacturer: As clause P21/ 121A
3. Standard: To BS EN 1155
 - Electromagnetic devices to fire/ smoke control doors: CE marked
4. Type: Electro-hydraulic swing free overhead door closer
5. Minimum classification grades:
 - Category of use: 3
 - Durability: 8
 - Hold open power size: 3-6
 - Suitability for use on fire/ smoke doors: 1
 - Safety: 1
 - Corrosion resistance: 4
6. Material/ finish: To match finish of specified ironmongery range
7. Means of release: Alarm system and/ or failure of power supply
8. Test switch: Located in a convenient position adjacent to door
9. Operational adjustment of integral closer:
 - Variable power: Matched to size, weight and location of doors
 - Latched doors: Override latches and/ or door seals when fitted
 - Unlatched doors: Hold shut under normal working conditions

DOOR SECURING DEVICES

525A PERFORMANCE SPECIFICATION FOR DOOR LOCKS AND LATCHES

1. Description:
2. Manufacturer: As clause P21/ 121A
3. Standard: To BS EN 12209
4. Minimum classification grades:
 - Category of use: 3
 - Durability: X
 - Door mass and closing force: 8
 - Suitability for use on fire/ smoke doors: 1
 - Safety: 0.
 - Corrosion resistance and temperature: G
 - Security and drill resistance: 2
 - Field of door application: B
 - Type of key operation and locking: A
 - Type of spindle operation: 3
 - Key identification requirement: 0
5. Backset: As shown on Ironmongery Schedule(s)
6. Material/ finish: Stainless steel faceplate
7. Keying: As clause 588
8. Other requirements:
 - Heavily sprung for unsprung lever furniture
 - Radius forend and square strike plate

588 LOCK SUITING

1. Suiting: Suite cylinders under new Grand Master suite
 - Provide, as appropriate, 3 no keys to each Grand Master, Master and Sub-master suite. In addition, provide 3 no keys to each cylinder.

WINDOW SECURING DEVICES - NOT USED

DOOR FURNITURE

622A PERFORMANCE SPECIFICATION FOR LEVER HANDLE SETS

1. Description:
2. Manufacturer: As clause P21/ 121A
3. Standard: To BS EN 1906
4. Minimum classification grades
 - Category of use: Grade 4
 - Durability: Grade 7
 - Door mass: No classification
 - Fire resistance: Grade 1
 - Safety: Grade 1
 - Corrosion resistance: Grade 4
 - Security: Grade 0
 - Type of operation: Type U
5. Style: As shown on Ironmongery Schedule(s)
6. Size: As shown on Ironmongery Schedule(s)
7. Material/ finish: As shown on Ironmongery Schedule(s)
8. Mounting: Quadaxial dry bearing system attaching lever to rose and incorporating captive bolt back to back screw thread fixings between roses
9. Additional requirements:
 - Solid bar handles
 - Max 4 mm thick unsprung roses

651A PERFORMANCE SPECIFICATION FOR PULL HANDLES

1. Description:
2. Manufacturer: As clause P21/ 121A
3. Standard: To BS 8424
4. Minimum classification grades:
 - Category of use: Grade 4
 - Durability: 2
 - Door mass: No classification
 - Suitability for use on fire/ smoke doors: Grade 1
 - Safety: 1
 - Corrosion resistance: Grade 4
5. Shape: As shown on Ironmongery Schedule(s)
6. Diameter: As shown on Ironmongery Schedule(s)
7. Distance between centres: As shown on Ironmongery Schedule(s)
8. Material/ finish: As shown on Ironmongery Schedule(s)
9. Mounting: As shown on Ironmongery Schedule(s)

10. Additional requirements:

- Solid bar handles
- Passivated steel bolt fixings with pan head design to suit flush installation and anti-clockwise serrations to underside to prevent slackening

WINDOW FURNITURE - NOT USED

Ω End of Section

P31 HOLES/CHASES/COVERS/SUPPORTS FOR SERVICES

CLAUSES

2 TO BE READ WITH PRELIMINARIES/GENERAL CONDITIONS.

PRODUCTS

315 FLAT ROOF PENETRATION UPSTAND

1. Manufacturer: Roof-Pro Ltd, PO Box 505, Kempston, Bedfordshire, MK42 7LQ
 - Product reference: Roof-Nek II insulated spun aluminium penetration upstand
2. Service: Pipe(s)/ cable(s) of up to 50 mm diameter as shown on M & E Services Consultant's drawing(s)
3. Installation:
 - Secure flange of penetration upstand to roof slab/ metal profiled sheet decking, dress roofing membrane around upstand, seal at top and secure with jubilee clip.
 - Remove detachable clip-on lid to feed pipe(s)/ cable(s) through upstand.
 - Modify cradle pipe/ cable ports to accept pipe(s)/ cable(s) of 21-50 mm diameter.
 - Replace lid.
4. Space between service and upstand: Seal at roof level with: Mineral wool compressed to completely fill space

317A FLAT ROOF PENETRATION BOX

1. Manufacturer: Nicholson Roof Products, Unit 13 Wireless Station Park, Chestnut Lane, Bassingbourn, SG8 5JH
 - Product reference: Roofbox M Bespoke
2. Service: Duct(s)/ Pipe(s)/ cable(s)/ cable tray(s) as shown on M & E Services Consultant's drawing(s)
3. Installation:
 - Secure frame to site formed concrete upstand kerbs in accordance with manufacturer's recommendations following weathering by roofing contractor.

EXECUTION

610 COORDINATION

1. Locations and dimensions of holes and chases for services: Submit details: of builderswork.

620 HOLES, RECESSES AND CHASES IN IN SITU CONCRETE

1. Cast in: Holes larger than 10 mm diameter, recesses and chases
2. 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, RECESSES AND CHASES IN PRECAST CONCRETE

1. Cutting and drilling: Not permitted except as indicated on drawings

640 HOLES IN STRUCTURAL STEELWORK

1. Cutting and drilling: Not permitted except as indicated on drawings

650A HOLES, RECESSES AND CHASES IN MASONRY

1. Locations: To maintain integrity of strength, stability and sound resistance of construction

2. Sizes: Minimum needed to accommodate services
 - Holes (maximum): 300 x 300 mm
3. Walls of hollow or cellular blocks: Do not chase
4. 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
5. Chases and recesses: Do not set back to back. Offset by a clear distance at least equal to the wall thickness
6. Cutting: Do not cut until mortar is fully set. Cut carefully and neatly. Avoid spalling, cracking and other damage to surrounding structure

660 PREFORMED HOLES IN MASONRY

1. Width of holes without bridging over (maximum): 225 mm
 - Holes requiring bridging: Submit proposals

690 INSTALLING PIPE SLEEVES

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

Ω End of Section

R10 RAINWATER DRAINAGE SYSTEMS

CLAUSES

2 TO BE READ WITH PRELIMINARIES/ GENERAL CONDITIONS.

GENERAL

110 GRAVITY RAINWATER DRAINAGE SYSTEM

1. Rainwater outlets: Proprietary
2. Gutters: Aluminium
3. Pipework: Aluminium
4. Below ground drainage: As section R12
5. Disposal: To surface water drainage
6. Controls: Not applicable
7. Accessories: None

SYSTEM PERFORMANCE

210 DESIGN

1. Design: Complete the design of the rainwater drainage system
2. Standard
 - To BS EN 12056-3, clauses 3–7, Annex A and National Annexes.
 - To BS EN 12056-5, clauses 3, 4, 6 and 11.
3. Proposals: Submit drawings, technical information, calculations and manufacturers' literature

221 COLLECTION AND DISTRIBUTION OF RAINWATER

1. General: Complete, and without leakage or noise nuisance

230 DESIGN PARAMETERS - GENERAL

1. Roof and gutter construction and finish: Polyester powder coated to BS EN 12206-1:2004
2. Design rate of rainfall: As BS EN 12056-3, National Annex NB.2
 - Category: 1
3. Design life of building: 50 years
4. Available capacity of existing below ground drainage (maximum): TBC

251 CO-ORDINATION OF RAINWATER PIPEWORK WITH FOUL AND WASTE VENTILATION PIPEWORK WITHIN SUSPENDED CEILING VOIDS

1. Levels: Rainwater pipework generally to have priority for higher zoning where clashes would otherwise occur

PRODUCTS

311C ALUMINIUM GUTTERS

1. Standard: To: BS 8530
2. Manufacturer: Alumasc Exterior Building Products Ltd, White House Works, Bold Road, Sutton St Helens, Merseyside WA9 4JG
 - Product reference: GX Joggle gutter system
3. Profile: GX Joggle
4. Type/ Thickness: Aluminium sheet to BSEN515:1993

5. Nominal size: 204 x 152 mm
6. Finish: Polyester powder coated to BS EN 12206-1:2004
7. Colour: To CA's requirements from manufacturer's full range
8. Jointing: Welded Integral internal union clip, sealed with Dow corning 791 silicone sealant allowing for a 3-4 mm thermal movement expansion gap at every gutter joint. Holes are slotted and fixed with M6 nut bolt and washer
9. Brackets: Aluminium brackets coated as gutters at maximum 900 mm centres and at each fitting
 - Fixings: Top strap fixed at max. 600mm centres and at each fitting. Brackets fixed to the wall using number 12 x 38mm Round head twin thread screws and washers bright zinc plated
10. Accessories: Angle assemblies, running outlet assemblies and stop ends as required

365A PROPRIETARY RAINWATER OUTLETS - TO INVERTED ROOF

1. Manufacturer: Alumasc Water Management Solutions, Station Road, Burton Latimer, Kettering, NN15 5JP
 - Product reference: Harmer AV Aluminium Vertical Spigot Outlet
 - Product code: AV600
2. Roof construction: Inverted as clause J31/ 130
3. Type of grate: Domical grating
4. Size: 150 mm
5. Accessories:
 - Grate extension piece
 - Stainless steel gravel guard

365B PROPRIETARY RAINWATER OUTLETS - TO SINGLE PLY ROOF

1. Manufacturer: Alumasc Water Management Solutions, Station Road, Burton Latimer, Kettering, NN15 5JP
 - Product reference: Harmer Insulated Vertical Spigot Outlet with Sika-Trocal S PVC Membrane
 - Product code: 1001
2. Roof construction: Single ply as clause J42/ 110A
3. Type of grate: Domical grating
4. Size: 100 mm
5. Accessories:
 - Extension piece with pre-attached Sika-Trocal S connecting membrane
 - Harmer metal support plate for fixing to profiled metal deck

365C PROPRIETARY RAINWATER OUTLETS - TO SINGLE PLY FEATURE CANOPY ROOF

1. Manufacturer: Alumasc Water Management Solutions, Station Road, Burton Latimer, Kettering, NN15 5JP
 - Product reference: Harmer 90° Spigot Outlet
 - Product code: 390
2. Roof construction: Single ply as clause J42/110A
3. Type of grate: Domical grating
4. Size: 75 mm
5. Accessories: None

365D PROPRIETARY PARAPET OUTLETS - TO INVERTED ROOF

1. Manufacturer: Alumasc Water Management Solutions, Station Road, Burton Latimer, Kettering, NN15 5JP
 - Product reference: Wade Parapet Outlet
 - Product code: WF042
2. Roof construction: Inverted as clause J42/ 130
3. Type of grate: Stainless Steel 'L'
4. Size: 2" BSP
5. Accessories: As clause 365F

365E PROPRIETARY PARAPET OVERFLOW OUTLETS - TO SINGLE PLY ROOF

1. Manufacturer: Alumasc Water Management Solutions, Station Road, Burton Latimer, Kettering, NN15 5JP
 - Product reference: Wade Horizontal Overflow Outlet
 - Product code: N215
2. Roof construction: Single ply as clause J42/ 110A
3. Type of grate: Flat nickel bronze with clamping collar
4. Size: 2" BSP
5. Accessories: As clause 365F

365F ACCESSORIES FOR PROPRIETARY PARAPET OUTLETS

1. Manufacturer: Alumasc Water Management Solutions, Station Road, Burton Latimer, Kettering, NN15 5JP
 - Product reference: Wade Downspout Nozzle in cast gunmetal
 - Product code: WJ202
2. Size: 2" BSP
3. Accessories: Wade ref U27 2" BSP diameter ABS plastic spigot connector

370B ALUMINIUM PIPEWORK

1. Standard: To BS 8530
2. Manufacturer: Alumasc Exterior Building Products Ltd, White House Works, Bold Road, Sutton, St Helens, Merseyside, WA9 4JG
 - Product reference: Flushjoint downpipe system
3. Type: Extruded
4. Section: Square
5. Nominal size: 100 x 100 mm
6. Finish: Polyester powder coated to BS EN 12206-1:2004
7. Colour: To CA's requirements from manufacturer's full range
8. Brackets: Aluminium pipe clips coated as pipes at maximum 2.0 m centres
 - Fixings: Plugged and screw to wall with number 12 x 50mm round head twin thread screws and washers bright zinc plated to BS 1706:1960 Class
9. Accessories: Bends, branches, access pipes, two part offsets, shoes, rainwater heads as required
10. Other requirements: Seal internal spigot joints with Dow Corning 792 silicone sealant allowing for 3-4 mm vertical thermal movement

427 PVC-U PIPEWORK - ACOUSTIC, SEALED

1. Locations: Internal rainwater pipework

2. Standard:
 - To BS EN 1329-1 or BS 4514, Kitemark certified.
 - Noise reducing characteristics tested to EN 14366/ DIN 4109.
3. Manufacturer: Polypipe Building Services, New Hythe Business Park, College Road, Aylesford, Kent, ME20 7PJ
 - Product reference: Terrain dB12 system
4. Recycled content: None permitted
5. Nominal size: 110 mm generally but as shown on drawings
6. Colour: Blue, RAL 5015
7. Fixing: Fix pipework using:
 - Ref AS3403043/ AS3403053/ AS3403114/ AS3423168 acoustic bracket M10
 - Ref AS398003 flange for wall fixing
 - Ref AS408001 M10 threaded rod, 1 m long
8. Fixing centres:
9. Pipework diameter Distance between Distance between
10. guide brackets fixed points
11. 40 mm 0.8 m 3.0 m
12. 50 mm 0.8 m 3.0 m
13. 110 mm 1.1 m 3.0 m
14. 160 mm 2.0 m 3.0 m .
15. Accessories:
 - Ref AS650901/ AS650907/ AS650911 rodding access with cap to each stack positioned with lower edge of access opening 460 mm above adjacent floor level.
 - Firestopping to pipework passing through fire resisting construction as clause P12/ 131

CUSTOM MADE PRODUCTS - NOT USED

EXECUTION

600 PREPARATION

1. Work to be completed before commencing work specified in this section
 - Below ground drainage. Alternatively, make temporary arrangements for dispersal of rainwater without damage or disfigurement of the building fabric and surroundings.
 - Painting of surfaces which will be concealed or inaccessible.

605 INSTALLATION GENERALLY

1. Electrolytic corrosion: Avoid contact between dissimilar metals where corrosion may occur
2. Plastics and galvanized steel pipes: Do not bend
3. Allowance for thermal and building movement: Provide and maintain clearance as fixing and jointing proceeds
4. Protection
 - Fit purpose made temporary caps to prevent ingress of debris.
 - Fit access covers, cleaning eyes and blanking plates as the work proceeds.

605A INSTALLATION GENERALLY

1. Electrolytic corrosion: Avoid contact between dissimilar metals where corrosion may occur
2. Plastics and galvanized steel pipes: Do not bend

3. Allowance for thermal and building movement: Provide and maintain clearance as fixing and jointing proceeds
4. Protection
 - Fit purpose made temporary caps to prevent ingress of debris.
 - Fit access covers, cleaning eyes and blanking plates as the work proceeds.
5. Install pipework/gutters to ensure the complete discharge of rainwater from the building without leaking.
6. Obtain all components for each type of pipework/guttering from the same manufacturer unless specified otherwise.
7. Provide access fittings and rodding eyes as necessary in convenient locations to permit adequate cleaning and testing of pipework..
8. Where not specified otherwise use plated, sherardized, galvanized or nonferrous fastenings, suitable for the purpose and background, and compatible with the material being fixed.

610A FIXING AND JOINTING GUTTERS

1. Joints: Watertight
2. Brackets: Securely fixed
 - Fixings: Screwed into softwood fascia board
 - Additional brackets:
3. Spread jointing compound evenly over jointing face of socket.
4. For gutters with bolted joints, tighten joints in the gutter sole before any other bolts. Fit suitable washers, and spacers to prevent overtightening, unless specified otherwise.
5. Tighten fixing to squeeze out some compound.
6. Remove surplus, squeezed out compound and neatly clean off.
7. Ensure that roofing underlay is dressed into gutter.
 - Additional brackets: Where necessary to maintain support and stability, provide at joints in gutters and near angles and outlets
8. Roofing underlay: Dressed into gutter

615 SETTING OUT EAVES GUTTERS - TO FALLS

1. Setting out: To true line and even gradient to prevent ponding or backfall. Position high points of gutters as close as practical to the roof and low points not more than 50 mm below the roof
2. Outlets: Align with connections to below ground drainage

630 INSTALLING RAINWATER OUTLETS

1. Fixing: Secure. Fix before connecting pipework
 - Method: In accordance with manufacturer's recommendations
2. Junctions between outlets and pipework: Accommodate movement in structure and pipework

635 FIXING PIPEWORK

1. Pipework: Fix securely, plumb and/ or true to line
2. Branches and low gradient sections: Fix with uniform and adequate falls to drain efficiently
3. Externally socketed pipes and fittings: Fix with sockets facing upstream
4. Additional supports: Provide as necessary to support junctions and changes in direction
5. Vertical pipes
 - Provide a loadbearing support at least at every storey level.
 - Tighten fixings as work proceeds so that every storey is self supporting.
 - Wedge joints in unsealed metal pipes to prevent rattling.

6. Wall and floor penetrations: Isolate pipework from structure
 - Pipe sleeves: As section P31
 - Masking plates: Fix at penetrations if visible in the finished work
7. Expansion joint pipe sockets: Fix rigidly to buildings. Elsewhere, provide brackets and fixings that allow pipes to slide

650 JOINTING PIPEWORK AND GUTTERS

1. General: Joint with materials and fittings that will make effective and durable connections
2. Jointing differing pipework and gutter systems: Use adaptors intended for the purpose
3. Cut ends of pipes and gutters: Clean and square. Remove burrs and swarf. Chamfer pipe ends before inserting into ring seal sockets
4. Jointing or mating surfaces: Clean and, where necessary, lubricate immediately before assembly
5. Junctions: Form with fittings intended for the purpose
6. Jointing material: Strike off flush. Do not allow it to project into bore of pipes and fittings
7. Surplus flux, solvent jointing materials and cement: Remove

675 CUTTING COATED PIPEWORK AND GUTTERS

1. Cutting: Recoat bare metal

685 IDENTIFICATION OF INTERNAL RAINWATER PIPEWORK

1. Standard: In accordance with Water Regulations Advisory Scheme (WRAS) Information and guidance note 9-02-05 and BS 8515

690 ELECTRICAL CONTINUITY - PIPEWORK

1. Joints in metal pipes with flexible couplings: Clips (or suitable standard pipe couplings) supplied for earth bonding by pipework manufacturer to ensure electrical continuity

700 ACCESS FOR TESTING AND MAINTENANCE

1. General: Install pipework and gutters with adequate clearance to permit testing, cleaning and maintenance, including painting where necessary
2. Access fittings and rodding eyes: Position so that they are not obstructed

COMPLETION

900 TESTING GENERALLY

1. Dates for testing: Give notice
 - Period of notice (minimum): 5 days
2. Preparation
 - Pipework: Complete, securely fixed, free from defects, obstruction and debris before testing
3. Testing
 - Supply clean water, assistance and apparatus.
 - Do not use smoke to trace leaks.
4. Records: Submit a record of tests

905 INTERNAL PIPEWORK TEST - ENGLAND, WALES, IRELAND AND NORTHERN IRELAND

1. Preparation: Temporarily seal open ends of pipework with plugs
2. Test apparatus: Connect a 'U' tube water gauge and air pump to pipework via a plug
3. Testing: Pump air into pipework until gauge registers 38 mm

4. Required performance

- Allow a period for temperature stabilization, after which the pressure of 38 mm is to be maintained without loss for at least 3 minutes.

910 GUTTER TEST

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

915 MAINTENANCE INSTRUCTIONS

1. General: At completion, submit printed instructions recommending procedures for maintenance of the rainwater installation, including full details of recommended inspection, cleaning and repair procedures

920 IMMEDIATELY BEFORE HANDOVER

1. Construction rubbish, debris, swarf, temporary caps and fine dust which may enter the rainwater system: Remove. Do not sweep or flush into the rainwater system
2. Access covers, rodding eyes, outlet gratings and the like: Secure complete with fixings

Ω End of Section

Z10 PURPOSE MADE JOINERY

TO BE READ WITH PRELIMINARIES/ GENERAL CONDITIONS.

110 FABRICATION

1. Standard: To BS 1186-2
2. Sections: Accurate in profile and length, and free from twist and bowing. Formed out of solid unless shown otherwise
 - Machined surfaces: Smooth and free from tearing, wooliness, chip bruising and other machining defects
3. Joints: Tight and close fitting
4. Assembled components: Rigid. Free from distortion
5. Screws: Provide pilot holes
 - 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
6. Adhesives: Compatible with wood preservatives applied and end uses of timber

120 CROSS SECTION DIMENSIONS OF TIMBER

1. General: Dimensions on drawings are finished sizes
2. Maximum permitted deviations from finished sizes
 - 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

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

140 MOISTURE CONTENT

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

210A LAMINATED PLASTICS VENEERED BOARDS/ PANELS

1. Fabrication: To British Laminated Plastics Fabricators Association Ltd (BLF) fabricating standards
2. Decorative laminate: To CA's requirements from the following ranges:
 - Egger (UK) Ltd:
 - "Uni Decors" range
 - "Woodgrains" range
 - "Fantasy" range
 - Formica Group:

- "Collection Colours" range
- "Collection Woods" range
- "Collection Patterns" range
- Polyrey UK:
 - "Papago Color" range
 - "Origine" range
 - "Patterns" range
- 3. Balancing veneer: From decorative laminate manufacturer and of similar composition. Applied to reverse side of core
- 4. Finished components: Free from defects, including bow, twist, scratches, chipping, cracks, pimpling, indentations, glue marks, staining and variations in colour and pattern
- 5. Joints visible in completed work: Tight butted, true and flush

220 WOOD VENEERED BOARDS/ PANELS

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

250 FINISHING

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

Ω End of Section

Z11 PURPOSE MADE METALWORK

TO BE READ WITH PRELIMINARIES/ GENERAL CONDITIONS.

310 MATERIALS GENERALLY

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

320 STEEL LONG AND FLAT PRODUCTS

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

330 STEEL PLATE, SHEET AND STRIP

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

340 HOT ROLLED STEEL PLATE, SHEET AND STRIP

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

350 COLD ROLLED STEEL PLATE, SHEET AND STRIP

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

360 COATED STEEL FLAT PRODUCTS

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

370 STEEL STRUCTURAL HOLLOW SECTIONS (SHS)

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

380 OTHER STEEL SECTIONS

1. Equal flange tees: To BS EN 10055

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

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

410 ALUMINIUM ALLOY PRODUCTS

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

420 COPPER ALLOY PRODUCTS

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

FABRICATION

515 FABRICATION GENERALLY

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

520 COLD FORMED WORK

1. Profiles: Accurate, with straight arrises

525 ADHESIVE BONDING

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

527 WELDING

1. Description:
2. Welding procedures
 - Method and standard:
 - Steel: Metal arc welding to BS EN 1011-1 and -2
 - Stainless steel: TIG welding to BS EN 1011-3
 - Welding Procedure Specification (WPS): Not required
3. Preparation
 - Joint preparation: Clean thoroughly
 - Surfaces of materials that will be self-finished and visible in the completed work: Protect from weld splatter
4. Jointing
 - Joints: Fully bond parent and filler metal throughout with no inclusions, holes, porosity or cracks
 - Dissimilar metals: Welding not permitted
 - Strength requirements: Welds to achieve design loads
 - Heat straightening: Not permitted
 - Complex assemblies: Agree priority for welding members to minimise distortion caused by subsequent welds
 - Tack welds: Use only for temporary attachment
 - Jigs: Provide to support and restrain members during welding
 - Filler plates: Not permitted
 - Lap joints: Minimum 5 x metal thickness or 25 mm, which ever is greater
 - Weld terminations: Clean and sound

530 STAINLESS STEEL FABRICATION

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

555 BRAZING

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

FINISHING

710 FINISHING WELDED AND BRAZED JOINTS VISIBLE IN COMPLETE WORK

1. Standard: To BS EN ISO 8501-3
 - Preparation grade: P2
2. Butt joints: Smooth, and flush with adjacent surfaces
3. Fillet joints: Neat
4. Grinding: Grind smooth where indicated on drawings

745 PREPARATION FOR APPLICATION OF COATINGS

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

750 LIQUID ORGANIC COATING FOR ALUMINIUM ALLOY COMPONENTS

1. Standard: To BS 4842

760 ZINC AND CADMIUM PLATING OF IRON AND STEEL SURFACES

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

770 CHROMIUM PLATING

1. Standard: To BS EN ISO 1456

780 GALVANIZING

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

790 VITREOUS ENAMELLING

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

COMPLETION

910 DOCUMENTATION

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

920 COMPLETION

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

Ω End of Section

Z12 PRESERVATIVE/ FIRE RETARDANT TREATMENT

TO BE READ WITH PRELIMINARIES/ GENERAL CONDITIONS.

110 TREATMENT APPLICATION

1. Timing: After cutting and machining timber, and before assembling components
2. Processor: Licensed by manufacturer of specified treatment solution
 - Operatives: Preferably WPA trained
3. Certification: For each batch of timber provide a certificate of assurance that treatment has been carried out as specified

120 COMMODITY SPECIFICATIONS

1. Standard: In accordance with the Wood Protection Association (WPA) publication 'Industrial wood preservation specification and practice'

130 PRESERVATIVE TREATMENT SOLUTION STRENGTHS/ TREATMENT CYCLES

1. General: Select to achieve specified service life and to suit treatability of specified wood species

140A COPPER-ORGANIC PRESERVATIVE TREATMENT TO WOOD FOR EXTERNAL BUILDING AND LANDSCAPE USES

1. Use Classes:
 - 3.2: Above ground (above dpc), external, exposed to frequent wetting, uncoated
 - 4: In permanent contact with ground or fresh water
2. Solution:
 - Manufacturer: Arch Timber Protection, Wheldon Road, Castleford, West Yorkshire, WF10 2JT
 - Product reference: Tanalith E water borne preservative treatment
 - Colour: Green
 - Application: High pressure impregnation
3. Moisture content of wood:
 - At time of treatment: Not more than 28%
 - After treatment: Timber to be surface dry before using

160A ORGANIC SOLVENT PRESERVATIVE TREATMENT

1. Use Classes:
 - 1: Above ground (above dpc), internal, dry
 - 2: Above ground (above dpc), Internal, occasional risk of wetting
 - 3.1: Above ground (above dpc), external, exposed to frequent wetting, coated
2. Solution:
 - Manufacturer: Arch Timber Protection, Wheldon Road, Castleford, West Yorkshire, WF10 2JT
 - Product reference: Vacsol Aqua water based and organic solvent free timber preservative
 - Application: Double vacuum + low pressure impregnation, or immersion
3. Moisture content of wood:
 - At time of treatment: As specified for the timber/ component at time of fixing
 - After treatment: Timber to be surface dry before use

610 MAKING GOOD TO PRESERVATIVE TREATMENT ON SITE

1. Preservative solution: Compatible with off-site treatment
2. Application: In accordance with preservative manufacturer's recommendations

Ω End of Section

Z20 FIXINGS AND ADHESIVES

CLAUSES

2 TO BE READ WITH PRELIMINARIES/ GENERAL CONDITIONS.

PRODUCTS

310 FASTENERS GENERALLY

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

320 PACKINGS

1. Materials: Noncompressible, corrosion proof
2. Area of packings: Sufficient to transfer loads

330 NAILED TIMBER FASTENERS

1. 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

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

350 PLUGS

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

360 ANCHORS

1. 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

370A WOOD SCREWS

1. Type:
2. Wood screws (traditional pattern).
 - Standard: To BS 1210
3. Wood screws.
 - Pattern: Parallel, fully threaded shank or twin thread types

4. Washers and screw cups: Do not use cup and screw fixings or plastic screw caps except where specified otherwise. Where required, metal screw cups to be of same material as screw

380A MISCELLANEOUS SCREWS

1. Type: To suit the fixing requirement of the components and substrate
 - Pattern: Self-tapping, metallic drive screws, or power driven screws
2. Washers and screw cups: Do not use cup and screw fixings or plastic screw caps except where specified otherwise. Where required, metal screw cups to be of same material as screw

390 ADHESIVES

1. 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

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

EXECUTION

610A FIXING GENERALLY

1. Integrity of supported components: Select types, sizes, quantities and spacings of fixings, fasteners and packings to retain supported components without distortion or loss of support
2. Components, substrates, fixings and fasteners of dissimilar metals: Isolate with washers/ sleeves to avoid bimetallic corrosion
3. Appearance:
 - Fixings to be fully concealed wherever possible. Do not use cup and screw fixings or plastic screw caps except where specified otherwise.
 - Fixings to be in straight lines at regular centres.

620 FIXING THROUGH FINISHES

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

630 FIXING PACKINGS

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

640 FIXING CRAMPS

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

650 NAILED TIMBER FIXING

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

660 SCREW FIXING

1. 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

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

690 USING POWDER ACTUATED FIXING SYSTEMS

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

700 APPLYING ADHESIVES

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

Ω End of Section

Z21 MORTARS

CLAUSES

2 TO BE READ WITH PRELIMINARIES/ GENERAL CONDITIONS.

CEMENT GAUGED MORTARS

110 CEMENT GAUGED MORTAR MIXES

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

120 SAND FOR SITE MADE CEMENT GAUGED MASONRY MORTARS

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

131 READY-MIXED LIME:SAND FOR CEMENT GAUGED MASONRY MORTARS

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

135 SITE MADE LIME:SAND FOR CEMENT GAUGED MASONRY MORTARS

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

160 CEMENTS FOR MORTARS

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

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

180 ADMIXTURES FOR SITE MADE CEMENT GAUGED MORTARS

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

190 RETARDED READY TO USE CEMENT GAUGED MORTAR

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

200 STORAGE OF CEMENT GAUGED MORTAR MATERIALS

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

210 MAKING CEMENT GAUGED MORTARS

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

LIME:SAND MORTARS - NOT USED

Ω End of Section

Z22 SEALANTS

CLAUSES

2 TO BE READ WITH PRELIMINARIES/GENERAL CONDITIONS.

PRODUCTS

310 JOINTS

1. Description:
2. Primer, backing strip, bond breaker: Types recommended by sealant manufacturer

EXECUTION

610 SUITABILITY OF JOINTS

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

620 PREPARING JOINTS

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

630 APPLYING SEALANTS

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

Ω End of Section

Z31 POWDER COATINGS

TO BE READ WITH PRELIMINARIES/ GENERAL CONDITIONS.

120 POWDER COATING MATERIALS

1. Manufacturer: Obtain from one only of the following:
 - H B Fuller Coatings Ltd, 95 Aston Church Road, Nechells, Birmingham, B7 5RQ
 - Akzo Nobel Powder Coatings Ltd, Stoneygate Lane, Felling, Gateshead, Tyne & Wear, NE10 0JY
2. Selected manufacturer: Submit details before commencement of powder coating including:
 - Name and contact details.
 - Details of accreditation schemes.
 - Technical data of product including current Agrément certificates.

210 WORKING PROCEDURES

1. Comply with the follow following standards.
 - Aluminium components: To BS 6496 or BS EN 12206-1
 - Steel components: To BS EN 13438
 - Safety standards: Powder coating. Application of coating powders by electrostatic spraying'
 - Health and safety guidance: Health and Safety Executive 'Reducing risk associated with using coating powders - employers' web page

220 POWDER COATING APPLICATORS

1. Applicator requirements
 - Approved by powder coating manufacturer.
 - Currently certified to BS EN ISO 9001.
 - Comply with quality procedures, guarantee conditions, standards and tests required by powder coating manufacturer.
 - Selected applicator: Submit details before commencement of powder coating including:
 - Name and contact details.
 - Details of accreditation schemes.

225 GUARANTEES

1. Powder coating manufacturer and applicator guarantees
 - Submit sample copies before commencement of powder coating.
 - Submit signed project specific copies on completion of work.

230 CONTROL SAMPLES

1. Sequence: Prior to ordering materials for the works, obtain approval of appearance for:
 - Powder coated samples: Of various grades and forms of background metal to be used, showing any colour, texture and gloss variation
 - Fabrication samples: Showing joint assembly, how powder coating is affected and how any cut metal edges are finished and protected
 - Where manual application is required, controlled samples should be coated and inspected for colour and gloss stability.
2. Samples to include the following information
 - Product reference.

- Colour.
- Reference number.
- Name.
- Gloss level.

240 QUALICOAT QUALITY ASSURANCE SYSTEM

1. Requirement: Powder and coating application to the following designated components is to be tested and approved in accordance with the Qualicoat system
 - Designated components: All

250 COMPONENT DESIGN

1. Condition of components to be powder coated
 - To comply with relevant recommendations of BS 4479-1, -3, and -4.
 - Of suitable size to fit plant capacity.
 - Of suitable thickness to withstand oven curing.

310 PRETREATMENT OF ALUMINIUM COMPONENTS

1. Condition of components to be pretreated
 - Free from corrosion and damage.
 - All welding and jointing completed and finish off as specified.
 - Free from impurities including soil, grease and oil.
 - Suitable for and compatible with the pretreatment process.
2. Conversion coating requirements
 - Chromate system: To BS 6496 or BS EN 12206-1
 - Chromate-free system: To BS EN 12206-1. Submit details before using
3. Rinsing requirements: Use demineralised water. Drain and dry

320 PRETREATMENT OF STEEL COMPONENTS

1. Condition of components to be pretreated
 - Free from corrosion and damage.
 - All welding and jointing completed and finish off as specified.
 - Free from impurities including soil, grease and oil.
 - Suitable for and compatible with the pretreatment process.
2. Conversion coating requirements: To BS EN 13438.
3. Rinsing requirements: Use demineralised water. Drain and dry

430 EXTENT OF POWDER COATINGS

1. Application: To visible component surfaces, and concealed surfaces requiring protection. Coated surfaces will be deemed 'significant surfaces' for relevant BS 6496 or BS EN 13438 performance requirements

435 APPLICATION OF POWDER COATINGS

1. Surfaces to receive powder coatings: Free from dust or powder deposits
2. Powder colours: Obtain from one batch of one manufacturer
3. Commencement of powder coating: To be continuous from pretreatment
4. Components to be installed on site in order of application.
5. Jig points: Not visible on coated components

6. Curing: Controlled to attain metal temperatures and hold periods recommended by powder coating manufacturer
7. Stripping and recoating of components: Only acceptable by prior agreement of powder coating manufacturer. Stripping, pretreatment and powder coating are to be in accordance with manufacturer's requirements
8. Overcoating of components: Not acceptable

440 PERFORMANCE AND APPEARANCE OF POWDER COATINGS

1. For aluminium components
 - Standard: To BS 6496 or BS EN 12206-1
2. For steel components
 - Standard: To BS EN 13438
3. Visual inspection after powder coating: Significant surface viewing distances to be as specified in the relevant Standard, unless specified otherwise
4. Colour and gloss levels: To conform with approved samples

450 ALUMINIUM ALLOY FABRICATIONS

1. Units may be assembled
 - Before powder coating.
 - From components powder coated after cutting to size.
 - Where approved, from components powder coated before cutting to size.
2. Exposure of uncoated background metal: Not acceptable.
3. Assembly sealants: Compatible with powder coatings. Obtain approval of colour if sealants are visible after fabrication

460 STEEL FABRICATIONS

1. Unit assembly: Wherever practical, before powder coating
2. Exposure of uncoated background metal: Not acceptable
3. Assembly sealants: Compatible with powder coatings. Obtain approval of colour if sealants are visible after fabrication

470 FIXINGS

1. Exposed metal fixings: Powder coat together with components, or coat with matching repair paint system applied in accordance with the powder coating manufacturer's recommendations

480 DAMAGED COMPONENTS – REPAIR OR REPLACEMENT

1. Before delivery to site: Check all components for damage to powder coatings. Replace damaged components
2. Site damage: Submit proposals for repair or replacement

510 PROTECTION

1. Powder coated surfaces of components: Protect from damage during handling and installation, or by subsequent site operations
2. Protective coverings must be
 - Resistant to weather conditions.
 - Partially removable to suit building in and access to fixing points.
3. Protective tapes in contact with powder coatings must be
 - Low tack, self adhesive and light in colour.

- Applied and removed in accordance with tape and powder coating manufacturers' recommendations. Do not use solvents to remove residues as these are detrimental to the coating.
4. Inspection of protection: Carry out monthly. Promptly repair any deterioration or deficiency

535 DOCUMENTATION

1. Submit the following information for each batch of powder coated components
 - Supplier.
 - Trade name.
 - Colour.
 - Type of powder.
 - Method of application.
 - Batch and reference number.
 - Statutory requirements.
 - Test certificates.
 - Maintenance instructions.

540 COMPLETION

1. Protection: Remove any protective coverings
2. Cleaning and maintenance of powder coatings: Carry out in accordance with procedures detailed in powder coating manufacturer and applicator guarantees

Ω End of Section



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