

Atelier Mb Ltd

2002 - SIM Fire Works

2002 SIM Fire Protection Works

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C20 Demolition

General requirements

120 Extent of deconstruction/ demolition

1. General: Subject to retention requirements specified elsewhere, deconstruct/ demolish structures down to Internal strip-out in accordance with drawings. Removal of historic fabric is not permitted.

150 Features to be retained

1. General: Keep in place and protect the following: All historic fabric.

Services affected by deconstruction/ demolition

210 Services regulations

1. Work carried out to or affecting new and/ or existing services: Carry out in accordance with the byelaws and/ or regulations of the relevant Statutory Authority.

220 Location of services

1. Services affected by deconstruction/ demolition work: Locate and mark positions.
2. Mains services marking: Arrange with the appropriate authorities for services to be located and marked.
 - 2.1. Marking standard: In accordance with National Joint Utilities Group 'Guidelines on the positioning and colour coding of underground utilities' apparatus'.

231 Services disconnection arranged by employer

1. General: The Employer will arrange with the appropriate authorities for disconnection of services and removal of fittings and equipment owned by those authorities prior to deconstruction/ demolition, as follows: Refer to Sixteen Real Estate.
2. Timing: Do not start deconstruction/ demolition until disconnections are completed.

Deconstruction/ demolition work

310 Workmanship

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

320 Gas or vapour risks

1. Precautions: Prevent fire and/ or explosion caused by gas and/ or vapour from tanks, pipes, etc.

330 Dust control

1. General: Reduce airborne dust by periodically spraying deconstruction/ demolition works with an appropriate wetting agent. Keep public roadways and footpaths clear of mud and debris.
2. Lead dust: Submit method statement for control, containment and clean-up regimes.

340 Health hazards

1. **Precautions:** Protect site operatives and general public from hazards associated with vibration, dangerous fumes and dust arising during the course of the Works.

360 Structures to be retained

1. **Extent:** All historic fabric.
2. **Parts which are to be kept in place:** Protect.
3. **Interface between retained structures and deconstruction/ demolition:** Cut away and strip out with care to minimize making good.

380 Dangerous openings

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

390 Asbestos-containing materials – known occurrences

1. **General:** Materials containing asbestos are known to be present in: Refer to Refurbishment/Demolition Asbestos Report by BLS dated February 2018..
2. **Removal:** By non-licensed contractor following statutory risk assessment

391 Asbestos-containing materials – unknown occurrences

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

410 Unforeseen hazards

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

450 Site condition at completion

1. **Debris:** Clear away and leave the site in a tidy condition.
2. **Other requirements:**

Materials arising

510 Contractor's property

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

511 Employer's property

1. **Components and materials to remain the property of the Employer:** TBC with SIM
2. **Protection:** Maintain until these items are removed by the Employer or reused in the Works, or until the end of the Contract.
3. **Special requirements:**

520 Recycled materials

1. **Materials arising from deconstruction/ demolition work:** Can be recycled or reused elsewhere in the project, subject to compliance with the appropriate specification and in accordance with any site waste management plan.
2. **Evidence of compliance:** Submit full details and supporting documentation.
 - 2.1. **Verification:** Allow adequate time in programme for verification of compliance.

Ω End of Section

C90

Alterations - spot items

General

110 Descriptions

1. Location of spot item descriptions: Refer to the drawings

120 Employer's property

1. Components and materials arising from alterations that are to remain the property of the Employer:
 - 1.1. **Protection:** Maintain until items listed above are removed by the Employer or reused in the Works, or until the end of the Contract.
2. Special requirements:

130 Recycled materials

1. **Materials arising from alterations:** May be recycled or reused elsewhere in the project, subject to compliance with the appropriate specification and in accordance with any site waste management plan.
2. **Evidence of compliance:** Submit full details and supporting documentation.
 - 2.1. **Verification:** Allow adequate time in programme for verification of compliance.

Ω End of Section

G20

Carpentry/ timber framing/ first fixing

General

105 Timber procurement

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

160 Grading and marking of softwood

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

Products

270 Ungraded softwood

1. Description: Generally
2. Quality of timber: Free from decay, insect attack (except pinhole borers) and with no knots wider than half the width of the section.
3. Surface finish: Regularized or Planed all round
4. Treatment
 - 4.1. Preservative treatment: Organic solvent impregnation to NBS section Z12 and Wood Protection Association Commodity Specification C8
 - 4.2. Design service life: 30 years
 - 4.3. Flame retardant treatment: None required

311 Non-structural plywood

1. Description: For General Use
2. Standard: To an approved national standard.
3. Thickness: As indicated on the drawings
4. Appearance class to BS EN 635: II
5. Use class to BS EN 335: Use class 2

6. Bonding quality to BS EN 314-2: Class 2
7. Finish: Sanded
8. Edges: Square or Tongued and grooved all edges according to location
9. Treatment
 - 9.1. Preservative treatment: None required
 - 9.1.1. Design service life: Not applicable
 - 9.2. Flame 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.

403 Cross-section dimensions of non-structural hardwood

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

420 Warping of timber

1. Bow, spring, twist and cup: Not greater than the limits set down in BS EN 14081-1, BS 4978 and BS EN 844 for softwood

430 Selection and use of timber

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

435 Notches, holes and joints in timber

1. Notches and holes
 - 1.1. General: Avoid if possible.
 - 1.2. Sizes: Minimum needed to accommodate services.
 - 1.3. Position: Do not locate near knots or other defects.
 - 1.4. In same joist: Minimum 100 mm apart horizontally.
 - 1.5. Notches in joists
 - 1.5.1. Position: Locate at top. Form by sawing down to a drilled hole.
 - 1.5.2. Depth (maximum): 0.15 x joist depth.
 - 1.5.3. Distance from supports: Between 0.1 and 0.2 x span.
 - 1.6. Holes in joists
 - 1.6.1. Position: Locate on neutral axis.
 - 1.6.2. Diameter (maximum): 0.25 x joist depth.
 - 1.6.3. Centres (minimum): 3 x diameter of largest hole.
 - 1.6.4. Distance from supports: Between 0.25 and 0.4 of span.
 - 1.7. Notches in roof rafters, struts and truss members: Not permitted.
 - 1.8. Holes in struts and columns: Locate on neutral axis.
 - 1.8.1. Diameter (maximum): 0.25 x minimum width of member.

1.8.2.Centres (minimum): 3 x diameter of largest hole.

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

2. Scarf joints, finger joints and splice plates: Do not use without approval.

440 Processing treated timber

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

450 Moisture content

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

451 Moisture content testing

1. Procedure: When instructed, test timber sections with an approved electrical moisture meter.
2. Test sample: Test 5% but not less than 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.

510 Protection

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

530 Painted finishes

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

540 Clear finishes

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

550 Exposed timber

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

Jointing timber

570 Jointing/ fixing generally

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

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.

760 Temporary bracing

1. **Provision:** As necessary to maintain structural timber components in position and to ensure complete stability during construction.

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.

775 Bearings

1. **Timber surfaces which are to transmit loads:** Finished to ensure close contact over the whole of the designed bearing area.
2. **Packings:** Where provided, to cover the whole of the designed bearing area.
 - 2.1. **Crushing strength:** Not less than timber being supported.
 - 2.2. **In external or inaccessible locations:** Rot and corrosion proof.

784 Joists generally

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

786 Joists on hangers

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

795 Trimming openings

1. **Trimmers and trimming joists:** When not specified otherwise, not less than 25 mm wider than general joists.

850 Inspection generally

1. **Structural timber-work:** Give reasonable notice before covering up.

860 Bolted joint inspection

1. **Timing:** Inspect all accessible bolts at the end of the Defects Liability Period and tighten if necessary.

900 Eaves soffit ventilators

1. **Manufacturer:**
 - 1.1. **Product reference:**
2. **Type:**
3. **Colour:**
4. **Airway:** The equivalent of a continuous opening of not less than mm for full length of eaves.

910 Eaves soffit ventilation

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

950 Fascias/ barges/ soffits

1. **Description:** Fascias and Soffits
2. **Manufacturer:** To be selected
 - 2.1. **Product reference:**
3. **Material:** Aluminium
4. **Finish:** Polyester powder coated
5. **Colour:** to be agreed
6. **Nominal depth:** See Drawings
7. **Edge profile:** See Drawings
8. **Accessories:** As recommended by the manufacturer
9. **Other requirements:**
10. **Support:** Steel framing
 - 10.1. Provide additional support at joints.
11. **Fixings:** As recommended by the manufacturer
12. **Installer:** A contractor approved by the system manufacturer.

Ω End of Section

H11

Curtain walling **ADDED**

Tendering - Not Used

Types of curtain walling

110 Curtain walling **ADDED**

1. **Description:** Amendment to existing structural silicone glazed facade to stair core C02.
2. **Supporting structure:** Existing steel frame
3. **Curtain walling system**
 - 3.1. **Manufacturer:** Submit proposals
 - 3.1.1. **Product reference:** Submit proposals
 - 3.2. **Type:** Structural sealant/ bonded glazing system
4. **Glazing:** To match existing.
5. **Other requirements:** Additional fixings and seals as required to maintain structural integrity and support new door opening.

General requirements/ preparatory work

210 Design **ADDED**

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

215 Design proposals **ADDED**

1. **Submission of alternative proposals:** Preliminary design drawings indicate intent. Other reasonable proposals will be considered.

220 Specification **ADDED**

1. **Compliance standards:** BS EN 13830 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:
 - 2.1. The CWCT 'Standard for systemised building envelopes'.
 - 2.2. Publications invoked by the CWCT 'Standard for systemised building envelopes'.

230 Information to be provided during detailed design stage **ADDED**

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

232 Quality plan **ADDED**

1. **Requirement:** Submit during detailed design.
2. **Content:** In accordance with BS EN ISO 9001 and including the following:
 - 2.1. Name of the quality manager.
 - 2.2. Quality assessment procedures.
 - 2.3. Inspection procedures to be adopted in checking the work.
 - 2.4. Stages at which check lists will be used and samples of the lists.
 - 2.5. List of work procedures on the correct use of materials or components, both off site and on site.
 - 2.6. List of product information with latest revisions.
 - 2.7. Subcontractors involved in the work.
 - 2.8. Subcontractors' quality plans.
 - 2.9. Storage, handling, transport and protection procedures.
 - 2.10. Procedure for registering and reporting non compliances.
 - 2.11. Maintenance procedures and calibration records.
 - 2.12. Certification that completed work complies with specification.
 - 2.13. Check list register to ensure all items have been inspected and non compliances discharged.

240 Information to be provided before commencement of structural sealant/ bonded glazing **ADDED**

1. **Submit structural bonding sealant manufacturer's project specific approval for**
 - 1.1. Compatibility and adhesion of products and finishes.
 - 1.2. Full details of structural sealant/ bonded glazing design.
 - 1.3. Structural sealant dimensions.
 - 1.4. Project specific sealant application method statement.

260 Samples of fixings **ADDED**

1. **General:** During detailed design, submit labelled samples of each type of fixing anchor, including casting-in restraints and shims, together with manufacturers' recommended torque figures.

Design/ performance requirements

305 CWCT 'Standard for systemised building envelopes' **ADDED**

1. **General:** Unless specified or agreed otherwise comply with:
 - 1.1. Part 2 - 'Loads, fixings and movement'.
 - 1.2. Part 3 - 'Air, water and wind resistance'.
 - 1.3. Part 4 - 'Operable components, additional elements and means of access'.
 - 1.4. Part 5 - 'Thermal, moisture and acoustic performance'.
 - 1.5. Part 6 - 'Fire performance'.
 - 1.6. Part 7 - 'Robustness, durability, tolerances and workmanship'.
2. **Project performance requirements specified in this subsection:** Read in conjunction with CWCT performance criteria.

313 Integrity **ADDED**

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: Calculate in accordance with: BS EN 1991-1-4 and National Annex.
3. Impact performance:
 - 3.1. **Safety impact requirements:** To BS EN 13830 in accordance with CWCT Standard for Systemised Building Envelopes, and CWCT Technical Notes [TN 75](#) and [TN 76](#) To CWCT TN 75, negligible risk
 - 3.2. **Serviceability impact requirements:** To CWCT TN 75, serviceability class 1
 - 3.3. External impact exposure: In accordance with CWCT TN 75: ??? category A.
 - 3.4. **Hard and soft body impact loads - glass to BS EN 12600:** *In accordance with CWCT Standard test methods for building envelopes and TN 76 (curtain wall).*
 - 3.5. Hard body impact tests - In accordance with CWCT Standard test methods for building envelopes and TN 76 (curtain wall).
 - 3.6. **Soft body impact tests:** *In accordance with BS EN 12600 (glass).*
4. Permanent imposed loads:
5. Temporary imposed loads:

320 Deflection under dead loads ADDED

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

325 Deflection under wind load ADDED

1. Requirement: To CWCT 'Standard for systemised building envelopes' clause 3.5 2 and the following additional requirements:
2. **Additional stiffness to CWCT 'Standard for systemised building envelopes' clause 3.5 4.2:** S.E. to advise.

330 General movement ADDED

1. Requirement: Curtain walling must accommodate anticipated building movements as follows: S.E. to advise. .

332 Appearance and fit ADDED

1. Requirement: Design curtain walling system:
 - 1.1. To ensure position and alignment of all parts and features as shown on preliminary design drawings.
 - 1.2. 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.
 - 2.1. **Give notice:** If the structure will not allow the required accuracy or security of erection.
 - 2.2. **Design tolerances:** As preliminaries section A33
3. **Curtain wall envelope zone tolerances**
 - 3.1. **Width:** In accordance with CWCT standards.
4. **Maximum permitted component and installation tolerances:** Panel tolerance ± 2 mm, installation tolerance ± 2 mm, overall = ± 4 mm.

335 Thermal movement – service temperature ranges **ADDED**

1. Requirement: To CWCT 'Standard for systemised building envelopes' clause 2.7.2 amended and/or with the addition of the following:

340 Air permeability **ADDED**

1. Requirement: Permissible air leakage rates of 1.5 m³/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:
 - 2.1. Peak test pressure:

345 Air permeability exfiltration **ADDED**

1. Requirement: The maximum permissible air exfiltration rate through the curtain walling system must not exceed:

350 Water penetration **ADDED**

1. Watertightness class to BS EN 12154:
 - 1.1. Peak test pressure:
2. Additional requirements:

370 Thermal properties **ADDED**

1. Method of calculating the thermal transmittance (U-value) of curtain walling/ each zone of curtain walling: Weighted U-value.
2. Average U-value of curtain walling: Glazing as existing.
3. Curtain wall zone interfaces: Co-ordinate to achieve required average U-value.

380 Solar and light control **ADDED**

1. Total solar energy transmission
 - 1.1. Maximum g-value - glazing only: Glazing as existing.

385 Thermal stress in glazing **ADDED**

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

390 Avoidance of condensation **ADDED**

1. Requirement: Notional psychrometric conditions under which condensation must not form on building interior surfaces of framing members or any part of infill panels/ facings are:
 - 1.1. Notional outdoor psychrometric conditions as BS 5250.
 - 1.2. Notional indoor psychrometric conditions
 - 1.2.1. Temperature:
 - 1.2.2. Relative humidity:
 - 1.2.3. Vapour pressure:

426 Reaction to fire of curtain walling **ADDED**

1. Standard: To BS EN 13501-1.
 - 1.1. Class: To comply with Approved Document B.

430 Fire stopping **ADDED**

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.

440 Durability **ADDED**

1. **Relevant agents or degradation mechanisms:**
2. **Design life of the curtain walling system:**
3. **Secondary components:** Submit details together with required maintenance regime, replacement periods and methods of replacement.

450 Safety **ADDED**

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

460 Structural sealant/ bonded glazing requirements **ADDED**

1. **Structural sealant/ bonded glazing units:** Installable, removable and replaceable without site application of structural bonding sealant.
2. **Structural sealant/ bonded glazing design:** Must limit design tensile stress of sealants to 138 kPa.

Breeam performance requirements - Not Used

Testing

510 Comparison (type) testing **ADDED**

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.

630 Site spray bar test **ADDED**

1. **Requirement:** To CWCT 'Standard for systemised building envelopes', 'Standard test methods for building envelopes' Section 10.
 - 1.1. Area to be tested:
 - 1.2. Pressure difference across curtain wall:

635 Site hose test **ADDED**

1. **Requirement:** To CWCT 'Standard for systemised building envelopes' Section 8.16.2, 'Standard test methods for building envelopes' Section 9.
 - 1.1. **Joints to be tested:** All new

660 Structural sealant/ bonded glazing tests **ADDED**

1. **Product samples:** Provide the structural bonding sealant manufacturer with framing profiles, glass, gaskets, assembly/ weathering sealants and other curtain walling products that are proposed for contact with structural bonding sealant.
2. **Testing:** By sealant manufacturer to determine compatibility and adhesion of structural bonding sealant under specified design loadings.

3. **Modification of product to enable compliance with test criteria:** Details must be recorded in the sealant manufacturer's project specific approval.

Products

710 Aluminium alloy framing sections **ADDED**

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.

712 Aluminium alloy sheet **ADDED**

1. **Standards:** To relevant parts of BS EN 485, BS EN 515 and BS EN 573.
2. **Alloy, temper and thickness:** Suitable for the application and specified finish.

715 Carbon steel framing sections/ Reinforcement **ADDED**

1. **Standards:** To relevant parts of BS 7668, BS EN 10029, and BS EN 10210.
2. **Thickness:** Suitable for the application, and for galvanizing or other protective coating.

717 Carbon steel sheet **ADDED**

1. **Standards:** To relevant parts of BS 1449-1, BS EN 10048, BS EN 10051, BS EN 10111, BS EN 10131, BS EN 10132, BS EN 10139, BS EN 10140, BS EN 10149, BS EN 10209 and BS EN 10268.
2. **Grade and thickness:** Suitable for the application, and for galvanizing or other protective coating.

720 Stainless steel sheet **ADDED**

1. **Standards:** To relevant parts of BS EN 10029, BS EN 10048, BS EN 10051, BS EN 10095 and BS EN ISO 9445.
2. **Grade:** To BS EN 10088-2, austenitic 1.4301 (304) generally, 1.4401 (316) when used externally or in severely corrosive environments.
3. **Thickness:** Suitable for the application.

730 Mechanical fixings **ADDED**

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 **ADDED**

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

735 Fixing anchors **ADDED**

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 **ADDED**

1. **Standards:** To BS 952 and relevant parts of:
 - 1.1. BS EN 572 for basic soda lime silicate glass.
 - 1.2. BS EN 1096 for coated glass.
 - 1.3. BS EN 1748 for borosilicate glass.
 - 1.4. BS EN 1863 for heat-strengthened soda lime silicate glass.
 - 1.5. BS EN 12150 for thermally toughened soda lime silicate glass.
 - 1.6. BS EN 13024 for thermally toughened borosilicate glass.
 - 1.7. BS EN ISO 12543 for laminated glass.
2. **Selection of glass type and thickness** in accordance with recommendations of CIRIA publication 'Guidance on 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 **ADDED**

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

741 Distortional tolerances on glass **ADDED**

1. **Description:**
2. **Measurement of tolerances:** After any thermal toughening/ heat-strengthening.
3. **Maximum bow:** 0.2% of pane dimension.
4. **Maximum roller wave**
 - 4.1. For 3 to 5 mm-thick glass: 0.5 mm.
 - 4.2. For 6 to 10 mm-thick glass: 0.3 mm.
 - 4.3. For 12 mm and thicker glass: 0.15 mm.
5. **Maximum edge dip**
 - 5.1. For 3 to 5 mm-thick glass: 0.8 mm.
 - 5.2. For 6 to 10 mm-thick glass: 0.5 mm.
 - 5.3. For 12 mm and thicker glass: 0.25 mm.

742 Heat-soaked thermally toughened glass ADDED

1. **Standard:** To BS EN 14179.
 - 1.1. **Holding period:** 2 hours
2. **Locations of heat-soaked glass:** For any replacement glass above 1500mm above ground level.

747 Glass edge condition for structural sealant/ bonded glazing ADDED

1. **Bonded, unframed outer edges:** Flat ground with a small arris suitable for open jointing or for weatherseal jointing.

760 Gaskets ADDED

1. **Material**
 - 1.1. Noncellular rubber to BS 4255-1.
 - 1.2. 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.

770 General sealants ADDED

1. **Selection:** In accordance with BS 6213 from:
 - 1.1. Silicone.
 - 1.2. One part polysulfide.
 - 1.3. Two parts polysulfide.
 - 1.4. One or two parts 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 ADDED

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 acetoxycuring.
2. **Manufacturer:** Submit proposals
 - 2.1. **Product reference:**

775 Bonding sealants for structural sealant/ bonded glazing ADDED

1. **Material:** Silicone, neutral curing, designed and manufactured for bonding of structural sealant/ bonded glazing. Compatible with contact and close proximity products and finishes.
2. **Manufacturer:** Submit proposals
 - 2.1. **Product reference:**

777 Weathersealing for structural sealant/ bonded glazing ADDED

1. **Material:** Silicone, one or two parts, neutral curing. Designed and manufactured for weathersealing of structural sealant/ bonded glazing. Compatible with contact and close proximity products and finishes.
2. **Manufacturer:** Submit proposals
 - 2.1. **Product reference:**

3. Colour: To match existing

Finishes

810 Protective coating of carbon steel framing sections/ Reinforcement **ADDED**

1. Treatment: One of the following to all surfaces:
 - 1.1. Hot dip galvanized to BS EN ISO 1461.
 - 1.2. 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 **ADDED**

1. Treatment: One of the following to all surfaces:
 - 1.1. Hot dip galvanized to BS EN ISO 1461.
 - 1.2. Sherardized to BS 7371-8, Class 30 coating thickness and passivated.
 - 1.3. 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.

Fabrication and installation

910 Generally **ADDED**

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 **ADDED**

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

915 Glazing **ADDED**

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 **ADDED**

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

920 Sealant application **ADDED**

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

925 Structural sealant/ bonded glazing **ADDED**

1. Curing: Do not transport units until structural bonding sealant has adequately cured for the period stated in the project specific approval.

930 Assembly **ADDED**

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 **ADDED**

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

970 Curtain walling installation **ADDED**

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.

980 Interfaces **ADDED**

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

982 Ironmongery **ADDED**

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 **ADDED**

1. **Maintenance manual:** Incorporate details within the Building Manual in accordance with CWCT 'Standard for systemised building envelopes' clause 7.6.1.
 - 1.1. **Materials certification and test reports to be included:**

Ω End of Section

J40

Flexible sheet waterproofing/ damp proofing

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

Types of tanking/ damp proofing - Not Used

Workmanship - Not Used

Ω End of Section

K10

Gypsum board dry linings/ partitions/ ceilings

Types of dry lining

120 Timber stud partitions

1. Description: 60 Minute Fire Resisting
2. Manufacturer: British Gypsum
 - 2.1. Product reference: GypWall Classic system reference A026028/9
3. Studs
 - 3.1. Type: 75 x 38 timber studs
 - 3.2. Centres: 400 mm
4. Head condition: Concrete slab
 - 4.1. Deflection allowance: 10 mm
5. Insulation: Isover acoustic insulation
 - 5.1. Recycled content: Not applicable
 - 5.2. Thickness: 25mm
6. Resilient layer:
7. Linings: Two layers 12.5 mm Gyproc Fireline plasterboard
8. Finishing: Skim coat plaster
 - 8.1. Primer/ Sealer: As recommended by board manufacturer
 - 8.2. Accessories: Metal beads/ stops recommended by board manufacturer
9. Other requirements: Fire stopping around services as section P12

125 Metal stud partition system

1. Description: 60 Minute Fire Resisting
2. Manufacturer: British Gypsum
 - 2.1. Product reference: GypWall Classic system reference A206067A
3. Studs
 - 3.1. Type: Gyframe 'C' studs 48 S 50
 - 3.2. Centres: 600 mm
4. Head condition: Concrete slab
 - 4.1. Deflection allowance: 15 mm
5. Insulation: Isover acoustic insulation
 - 5.1. Recycled content: Not applicable
 - 5.2. Thickness: 25mm
6. Resilient layer:
7. Linings: Two layers 12.5 mm Gyproc Fireline plasterboard
8. Finishing: Skim coat plaster
 - 8.1. Primer/ Sealer: As recommended by board manufacturer
 - 8.2. Accessories: Metal beads/ stops recommended by board manufacturer
9. Other requirements: Fire stopping around services as section P12

125 Timber stud partitions Curved

1. Description: 30 Minute Fire Resisting (Not Certified)

2. Manufacturer: British Gypsum
3. Studs
 - 3.1. Type: 75 x 38 timber studs
 - 3.2. Centres: 450 mm
4. Head condition: Concrete slab
 - 4.1. Deflection allowance: 10 mm
5. Insulation: Isover acoustic insulation
 - 5.1. Recycled content: Not applicable
 - 5.2. Thickness: 25mm
6. Resilient layer:
7. Linings: Four layers 6 mm Gyproc F Multiboard
8. Finishing: Skim coat plaster
 - 8.1. Primer/ Sealer: As recommended by board manufacturer
 - 8.2. Accessories: Metal beads/ stops recommended by board manufacturer
9. Other requirements: Fire stopping around services as section P12

126 Metal stud partition system Shaft wall

1. Description: 60 Minute Fire Resisting Shaft Wall
2. Manufacturer: British Gypsum
 - 2.1. Product reference: GypWall Classic system reference G306035
3. Studs
 - 3.1. Type: Gypframe 'I' studs 48 I 60
 - 3.2. Centres: 600 mm
4. Head condition: Concrete slab
 - 4.1. Deflection allowance: 10 mm
5. Insulation: Isover acoustic insulation
 - 5.1. Recycled content: Not applicable
 - 5.2. Thickness: 50mm
6. Resilient layer:
7. Linings: Two layers 12.5mm Gyproc Fireline plasterboard
8. Finishing: Skim coat plaster
 - 8.1. Primer/ Sealer: As recommended by board manufacturer
 - 8.2. Accessories: Metal beads/ stops recommended by board manufacturer
9. Other requirements: Intumescent sealant to perimeter.

205 Lining on timber

1. Description: Lining to Cupboards
2. Background: Existing timber or battens at 450 centres
3. Metal resilient (acoustic) bars: Not required
4. Linings: 15mm Fireline plasterboard
 - 4.1. Fixing: Screws
5. Finishing: Skim coat plaster
 - 5.1. Primer/ Sealer: Not required
 - 5.2. Accessories: Metal beads/ stops recommended by board manufacturer
6. Other requirements: Fire stopping around service penetrations as section P12

245 Ceiling lining on timber New ceilings

1. Description: Ceilings on joists
2. Background: New timber joists
3. Metal resilient (acoustic) bars: Not required
4. Linings: Two layers 12.5 mm plasterboard
 - 4.1. Fixings: Screws
5. Finishing: Skim coat plaster
 - 5.1. Primer/ Sealer: As recommended by board manufacturer for vapour control
 - 5.2. Accessories: Metal beads/ stops recommended by board manufacturer
6. Other requirements: Fire stopping around service penetrations as section P12

255 Encasement system (metal framing)

1. Description: Encasement for steel members
2. Manufacturer: British Gypsum
 - 2.1. Product reference: Gypliner Encase
3. Structural members: Refer to structural engineer's drawings
 - 3.1. Extent of protection: Beams: Three sides.
4. Fire performance
 - 4.1. Protection to structural steel: 60 minutes
5. Framing system: Sizes and spacing of framing and fixings as recommended by the board manufacturer.
6. Linings: One layer 15mm Fireline
7. Finishing: Skim coat plaster
 - 7.1. Primer/ Sealer: Primer to painted areas
 - 7.2. Accessories: As recommended by the manufacturer
8. Other requirements: Fire sealant to perimeter

General/ preparation

335 Additional supports

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

Components

400 Gypsum boards generally

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

Installation

435 Dry linings generally

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

445 Ceilings

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

455 Metal framing for partitions/ wall linings

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

465 Staggered stud partitions

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

475 Metal furrings for wall linings

1. **Setting out:** Accurately aligned and plumb.
 - 1.1. **Vertical furring positions:** Equal vertical centres to suit specified linings, maintaining sequence across openings. Position adjacent to angles and openings.
 - 1.2. **Additional vertical furrings:** To support vertical edges of boards and at junctions with partitions.
 - 1.3. **Horizontal furring positions:** To provide continuous support to edges of boards.
2. **Adhesive bedding to furrings**
 - 2.1. **Dabs:** Length 200 mm (minimum). Located at ends of furrings and thereafter at 450 mm (maximum) centres.
 - 2.2. **Junctions with partitions:** Continuous bed with no gaps across cavity.

485 Suspended ceiling grids

1. **Setting out:** Accurately aligned and level.
 - 1.1. **Grid members and hangers:** Centres to suit specified linings and imposed loads.

- 1.2. **Additional grid members:** Provide bracing and stiffening at upstands, partition heads, access hatches, etc.
2. **Fixing:** Securely at perimeters, grid joints, top and bottom hanger fixings.

505 Installing mineral wool insulation

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

510 Sealing gaps and air paths

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

555 Fire stopping at perimeters of dry lining systems

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

560 Joints between boards

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

565 Vertical joints

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

570 Horizontal joints

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

590 Fixing gypsum board to metal framing/ Furrings

1. **Partitions/ Wall linings:** Fix securely and firmly at the following centres (maximum):
 - 1.1. **Single layer boarding:** To all framing at 300 mm centres. Reduce to 200 mm centres at external angles.
 - 1.2. **Multi-layer boarding:** Face layer at 300 mm centres, and previous layers around perimeters at 300 mm centres.

2. Ceilings: 230 mm. Reduce to 150 mm at board ends and at lining perimeters.
3. Position of screws from edges of boards (minimum): 10 mm.
 - 3.1. Screw heads: Set in a depression. Do not break paper or gypsum core.

595 Deflection heads

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

610 Fixing gypsum board to timber

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

Finishing

650 Level of dry lining across joints

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

670 Seamless jointing to gypsum boards

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

680 Skim coat plaster finish

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

692 Rigid beads/stops

1. **Internal:** Stainless Steel, To BS EN 13658-1.
2. **External:** To BS EN 13658-2.

695 Installing beads/ Stops

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

725 Repairs to existing gypsum board

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

Ω End of Section

L10

Windows/ rooflights/ screens/ louvres

General

110 Evidence of performance

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

115 Timber procurement

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

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. **Primary support structure:** Carry out survey sufficient to verify that required accuracy and security of erection can be achieved.
4. **Timing:** Before fabrication.

140 Control samples

1. **Procedure**
 - 1.1. Finalise component details.
 - 1.2. Fabricate one of each of the following designated items as part of the quantity required for the project.
 - 1.3. Obtain approval of appearance and quality before proceeding with manufacturer of the remaining quantity.
2. **Designated items:**

Products

205 Window materials specification

1. Minimum BRE 'Green Guide to Specification Online' rating: A

555 Glazed Metal Screens

1. **Location:** Refer to drawings
2. **Materials and workmanship:** As section Z11.

- 2.1. Frame members: Steel
 - 2.1.1. Finish: Polyester powder-coated
- 2.2. Panels: Glazed panels as 565
- 3. Jointing: Welded
- 4. Thermal performance: Not applicable
- 5. Fire performance: 30 Minutes fire resistant
- 6. Glazing details: Proprietary intumescent glazing system
- 7. Special features/ Other requirements: Curved units where shown on the drawings
- 8. Fixing: Screwed to masonry as clause 782

565 Thermally toughened glass sheets

- 1. Manufacturer: [Pilkington United Kingdom Limited](#)
- 2. Contact details
 - 2.1. Address: European Technical Centre
Hall Lane
Westhead
Lathom
Lancashire
United Kingdom
L40 5UF
 - 2.2. Telephone:
 - 2.3. Web: www.pilkington.co.uk
 - 2.4. Email: enquiries@pilkington.com
- 3. Product reference: [Pilkington Pyroclear® Fire Resistant \(Pyroclear® 30-001 \(Internal / External applications\)\)](#)
- 4. Composition: Optifloat clear.
- 5. Thickness:
- 6. Body colour: Clear.
- 7. Performance requirements
 - 7.1. Fire performance: 30 minutes.
 - 7.2. Light: 90%.
 - 7.3. Solar control: N/A
 - 7.4. Thermal insulation: N/A
- 8. Size:: To suit existing frames or as drawings
- 9. Light reflectance: 8%.
- 10. Reaction to fire:
- 11. Temperature Range:
- 12. Security: Burglar resistance to EN 356: P1A.

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.

730 Priming/ sealing

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

740 Corrosion protection

1. Surfaces to be protected:
2. Protective coating: Two coats of bitumen solution to BS 6949 or an approved mastic impregnated tape.
 - 2.1. Timing of application: Before fixing components.

750 Building in

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

781 Fixing of steel frames

1. Standard: As section Z20.
2. Fasteners:
 - 2.1. Spacing: When not predrilled or specified otherwise, position fasteners not less than 50 mm and not more than 190 mm from ends of each jamb, adjacent to each hanging point of opening lights and at maximum 900 mm centres.

782 Fixing of aluminium frames

1. Standard: As section Z20.
2. Fasteners: As recommended by the manufacturer
 - 2.1. 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.

790 Fire-resisting frames

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

810 Sealant joints

1. Sealant
 - 1.1. Manufacturer: Contractor's choice
 - 1.1.1. Product reference: Submit proposals
 - 1.2. Colour: To be agreed
 - 1.3. Application: As section Z22 to prepared joints. Finish triangular fillets to a flat or slightly convex profile.

815 Sealant Tape

1. Sealant
 - 1.1. Manufacturer: tremco CPG UK Limited
Coupland Road
Hindley Green
Wigan WN2 4HT UK
+44 (0) 1942 929012
 - 1.1.1. Product reference: Compriband TP600
 - 1.2. Colour: black

1.3. **Application:** As recommended by the manufacturer

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 REVISED

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:
 - 1.1. The laws governing forest management in the producer country or countries.
 - 1.2. International agreements such as the Convention on International Trade in Endangered Species of wild fauna and flora (CITES).
2. **Documentation:** Provide either:
 - 2.1. Documentary evidence (which has been or can be independently verified) regarding the provenance of all timber supplied.
 - 2.2. Evidence that suppliers have adopted and are implementing a formal environmental purchasing policy for timber and wood-based products.
3. **Certification scheme:**
 - 3.1. **Other evidence:**

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.

150 Site dimensions

1. **Procedure:** Before starting work on designated items take site dimensions, record on shop drawings and use to ensure accurate fabrication.
2. **Designated items:** Doors in existing openings

170 Control samples

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

Products

230 Wood flush doors - veneered - Type A REVISED

1. Description: FD30S AND FD60S FIRE RESISTING AND SMOKE CONTROL
2. Manufacturer: Forza or similar approved.
 - 2.1. Product reference: Solid core, hardwood veneer faced, 44 or 54mm thick
3. Facings: To be agreed
4. Lippings: Concealed lippings to long edges
5. Preservative treatment: Not required
6. Finish as delivered: Full stain system, as section M60
7. Glazing/ Infill details: Not applicable
 - 7.1. Manifestation: Not applicable
 - 7.2. Beading: Not required
8. Other requirements: Intumescent smoke seals to meeting stiles Lorient DS range, to suit location. Install minimum of 3 hinges with all the screws fitted.
9. Ironmongery included in successful tests to BS 476-22 or BS EN 1634-1 on door assemblies similar to those proposed.

230 Wood flush doors - painted Type B ADDED

1. Description: FD30S AND FD60S FIRE RESISTING AND SMOKE CONTROL
2. Manufacturer: Forza or similar approved.
 - 2.1. Product reference: Solid core, flush paint grade, 44 or 54mm thick
3. Facings: To be confirmed (paint or laminate)
4. Lippings: Concealed lippings to long edges
5. Preservative treatment: Not required
6. Finish as delivered: Full stain system, as section M60. Colour TBC
7. Glazing/ Infill details: Not applicable
 - 7.1. Manifestation: Not applicable
 - 7.2. Beading: Not required
8. Other requirements: Intumescent smoke seals to meeting stiles Lorient DS range, to suit location. Intumescent smoke seals to meeting stiles Lorient DS range, to suit location. Install minimum of 3 hinges with all the screws fitted.
9. Ironmongery included in successful tests to BS 476-22 or BS EN 1634-1 on door assemblies similar to those proposed.

235 Wood flush doors - veneered - With vision panels - Type A REVISED

1. Description: FD30S AND FD60S FIRE RESISTING AND SMOKE CONTROL

2. **Manufacturer:** Forza or similar approved.
 - 2.1. **Product reference:** Solid core, hardwood veneer faced, 44 or 54mm thick
Glazing pattern V3
3. **Facings:** Exterior grade plywood
4. **Lippings:** Concealed lippings to long edges
5. **Preservative treatment:**
6. **Finish as delivered:** Full stain system, as section M60
7. **Glazing/ Infill details:** Clear fire-resisting glazing as Clause L40/230
 - 7.1. **Manifestation:** As drawing
 - 7.2. **Beading:** Internal
8. **Other requirements:** Intumescent smoke seals to meeting stiles Lorient DS range, to suit location. Intumescent smoke seals to meeting stiles Lorient DS range, to suit location. Install minimum of 3 hinges with all the screws fitted.
 - 8.1. Ironmongery included in successful tests to BS 476-22 or BS EN 1634-1 on door assemblies similar to those proposed.

235 Wood flush doors - with vision panel - painted Type C ADDED

1. **Description:** FD30S AND FD60S FIRE RESISTING AND SMOKE CONTROL
2. **Manufacturer:** Forza or similar approved.
 - 2.1. **Product reference:** Solid core, paint grade, 44 or 54mm thick
Glazing pattern V3
3. **Facings:** To be confirmed (paint or laminate)
4. **Lippings:** Concealed lippings to long edges
5. **Preservative treatment:**
6. **Finish as delivered:** Full stain system, as section M60. Colour TBC
7. **Glazing/ Infill details:** Clear fire-resisting glazing as Clause L40/230
 - 7.1. **Manifestation:** As drawing
 - 7.2. **Beading:** Internal
8. **Other requirements:** Intumescent smoke seals to meeting stiles Lorient DS range, to suit location. Intumescent smoke seals to meeting stiles Lorient DS range, to suit location. Install minimum of 3 hinges with all the screws fitted.
 - 8.1. Ironmongery included in successful tests to BS 476-22 or BS EN 1634-1 on door assemblies similar to those proposed.

280 Metal Framed Doorset - Fire Rated - Type A REVISED

1. **Description:** Steel framed FD30 or FD60 minute fire rated door set with glazed panels. See drawings.
2. **Manufacturer:** Door Technik or similar approved.
 - 2.1. **Product reference:** SG20
3. **Finish as delivered:** Polyester powder-coated to BS EN 12206-1, colour to be confirmed - to match existing.
4. **Glazing/ Infill details:** Site glazed as section L40
 - 4.1. **Manifestation:** Required - details TBC (Allow for bespoke vinyl)
 - 4.2. **Beading:** Internal
5. **Ironmongery:** As recommended by the door manufacturer and to match existing.
 - 5.1. Refer to schedule. Ironmongery included in successful tests to BS 476-22 or BS EN 1634-1 on door assemblies similar to those proposed.

6. **Other requirements:** Intumescent smoke seals as recommended by the door manufacturer

280 Metal Framed Frameless Glass Door Type B **ADDED**

1. **Description:** Steel framed 60 minute fire rated door set with glazed panels.
See drawings.
2. **Manufacturer:** Door Technik or similar approved.
 - 2.1. **Product reference:** SG20
3. **Finish as delivered:** Polyester powder-coated to BS EN 12206-1, colour to be confirmed - to match existing.
4. **Glazing/ Infill details:** Site glazed as section L40
 - 4.1. **Manifestation:** Required - details TBC (Allow for bespoke vinyl)
 - 4.2. **Beading:** Internal
5. **Ironmongery:** As recommended by the door manufacturer and to match existing.
 - 5.1. Key lockable with escape latch. D lever handles to each side. Push/Pull signage.
6. **Other requirements:** Intumescent smoke seals as recommended by the door manufacturer

310 Wood door frames

1. **Description:** FD30S and FD60S FIRE RESISTING AND SMOKE CONTROL TO EXISTING OPENINGS
2. **Manufacturer:** Shadbolt or similar approved
 - 2.1. **Product reference:**
3. **Species:** European redwood
4. **Preservative treatment:** Not required
5. **Finish as delivered:** Full stain system, as section M60
6. **Perimeter seals:** Fire and smoke seal Lorient DS range to suit location
7. **Thermal performance:** Unrated
8. **Fixing:** Plugged and screwed as section Z20

330 Wood door frames

1. **Description:** INTERNAL
2. **Materials:** Generally to BS EN 942.
 - 2.1. **Species:** European redwood
 - 2.2. **Appearance class:**
3. **Assembly**
 - 3.1. **Adhesive:** PVAC to BS EN 204, Class D4
 - 3.2. **Joinery workmanship:** As section Z10.
4. **Preservative treatment:**
5. **Moisture content on delivery:** 9-13%
6. **Finish as delivered:** Prepared and primed, as section M60
7. **Perimeter seals:** Not required
8. **Thermal performance (U-value maximum):**
9. **Fixing:** Plugged and screwed as section Z20

410 Wood doorsets - FD60 with vision panel and feature grooves. Type A

ADDED

1. **Manufacturer:** Forza Doors Limited

- 1.1. Contact details
 - 1.1.1. Address: Unit 24a-24c
Star Road
Partridge Green, Horsham
RH13 8RA
 - 1.1.2. Telephone: +44 (0)1403 711126
 - 1.1.3. Web: www.forza-doors.com
 - 1.1.4. Email: info@forza-doors.com
- 1.2. Product reference: **FD60 Double Door Flush Frame** Feature grooves to each face as per drawing ref XXX. Submit proposals
2. Third party accreditation: IFC Field of Application report PAR/10896/01/ FSC CU-COC-104313, PEFC CU-PEFC-816129.
3. Standard: Door assembly fire integrity BS 476-22. Glass safety rating to BS 6206 (BS EN 12600).
4. Wood in joinery standard: To BS EN 942.
5. Configuration: B - Double equal leaves.
6. Doorset size: Approx. 1450x1800mm.
7. Format: Timber internal flush doors - with feature grooves to each face.
8. Performance
 - 8.1. Fire performance
 - 8.1.1. Fire integrity: To BS 476-22, 60 minutes.
 - 8.1.2. Fire insulation: To BS 476-22, 60 minutes.
 - 8.1.3. Smoke control: To BS 476-31-1.
 - 8.1.4. Reaction to fire: To BS 476-7.
 - 8.2. Acoustic performance: To BS EN ISO 140-3:1995, sound reduction index Rw 33 dB.
 - 8.3. Strength and durability: To BS EN 1191, Class 7.
 - 8.4. Thermal: n/a
9. Frame
 - 9.1. Material: Hardwood (minimum density 640 kg/m³).
 - 9.2. Appearance class: J20.
 - 9.3. Threshold: Non combustible.
 - 9.4. Perimeter seals or inserts: To BS8214
 - 9.5. Finish: Opaque stain as M60 or submit proposals.
 - 9.6. Colour: TBC - to match existing.
 - 9.7. Installation fasteners: In accordance with manufacturer recommendations.
10. Door leaf
 - 10.1. Thickness: 64 mm. (including feature grooved panels - 5mm MDF each side).
 - 10.2. Core: Solid core.
 - 10.3. Appearance class: J20.
 - 10.4. Panel details: 5mm MDF to feature grooves to replicate existing door panel proportions.
 - 10.5. Lippings: Veneered, concealed to match face.
 - 10.6. Perimeter seals: Fire. Smoke. Acoustic.
 - 10.7. Finish: Opaque stain as M60.
 - 10.8. Glazing
 - 10.8.1. Type: Clear fire glass.
 - 10.9. Beading

- 10.9.1. Type: Flush (Quirk).
- 10.10. Door accessories: Perimeter and threshold seals as P21, Intumescent smoke seals as recommended by the door manufacturer.
- 11. Planted stops
 - 11.1. Wood species: N/A
- 12. Hardware: As schedule in accordance with Forza Hardware Suitability and Installation Guide
- 13. Architraves
 - 13.1. Material: N/A - as existing.

410 Wood doorsets - Single leaf - FD60 or FD30 with feature grooves. Type B

ADDED

- 1. Manufacturer: [Forza Doors Limited](#)
 - 1.1. Contact details
 - 1.1.1. Address: Unit 24a-24c
Star Road
Partridge Green, Horsham
RH13 8RA
 - 1.1.2. Telephone: [+44 \(0\)1403 711126](tel:+44(0)1403711126)
 - 1.1.3. Web: www.forza-doors.com
 - 1.1.4. Email: info@forza-doors.com
 - 1.2. Product reference: [FD60 Double Door Flush Frame](#) IGNORE DOUBLE - THIS IS A SINGLE DOOR! Feature grooves to each face as per drawing ref XXX. Submit proposals
- 2. Third party accreditation: IFC Field of Application report PAR/10896/01/ FSC CU-COC-104313, PEFC CU-PEFC-816129.
- 3. Standard: Door assembly fire integrity BS 476-22. Glass safety rating to BS 6206 (BS EN 12600).
- 4. Wood in joinery standard: To BS EN 942.
- 5. Configuration: SINGLE LEAVE
- 6. Doorset size: Approx. 1030x2090mm.
- 7. Format: Timber internal flush door - with feature grooves to each face.
- 8. Performance
 - 8.1. Fire performance
 - 8.1.1. Fire integrity: To BS 476-22, 60 minutes.
 - 8.1.2. Fire insulation: To BS 476-22, 60 minutes.
 - 8.1.3. Smoke control: To BS 476-31-1.
 - 8.1.4. Reaction to fire: To BS 476-7.
 - 8.2. Acoustic performance: To BS EN ISO 140-3:1995, sound reduction index Rw 33 dB.
 - 8.3. Strength and durability: To BS EN 1191, Class 7.
 - 8.4. Thermal: n/a
- 9. Frame
 - 9.1. Material: Hardwood (minimum density 640 kg/m³).
 - 9.2. Appearance class: J20.
 - 9.3. Threshold: Non combustible.
 - 9.4. Perimeter seals or inserts: To BS8214
 - 9.5. Finish: Opaque stain as M60 or submit proposals.
 - 9.6. Colour: TBC - to match existing.
 - 9.7. Installation fasteners: In accordance with manufacturer recommendations.

- 10. Door leaf
 - 10.1. Thickness: 64 mm. (including feature grooved panels - 5mm MDF each side).
 - 10.2. Core: Solid core.
 - 10.3. Appearance class: J20.
 - 10.4. Panel details: 5mm MDF to feature grooves to replicate existing door panel proportions.
 - 10.5. Lippings: Veneered, concealed to match face.
 - 10.6. Perimeter seals: Fire. Smoke. Acoustic.
 - 10.7. Finish: Opaque stain as M60.
 - 10.8. Glazing
 - 10.8.1. Type: N/A
 - 10.9. Beading
 - 10.9.1. Type: N/A
 - 10.10. Door accessories: Refer to door schedule and P21 for ironmongery details, Intumescent smoke seals as recommended by the door manufacturer
- 11. Planted stops
 - 11.1. Wood species: N/A
- 12. Hardware: As P21, door schedule and in accordance with Forza Hardware Suitability and Installation Guide
- 13. Architraves
 - 13.1. Material: N/A - as existing.

460 Frameless glass doors REVISED

- 1. Description: New external doors
- 2. Manufacturer: Door Technik or similar approved
 - 2.1. Product reference: G20 or similar approved
- 3. Performance: Heavy duty
- 4. Door leaf: Safety glass to BS EN 12600, class 1C1
 - 4.1. Thickness: Min 12mm to manufacturer recommendations.
 - 4.2. Colour: Clear
- 5. Decoration: Not required
 - 5.1. Manifestation: As drawing
- 6. Door rails/ Patch fittings: Bottom Rail + Top Patch with pivot
 - 6.1. Material/ Finish: Polished stainless steel
- 7. Peripheral fixings: Concealed channel
- 8. Lock: Single action escape handle to BS EN 179
 - 8.1. Position: Door top rail and door bottom rail
- 9. Floor springs: Single swing with 90° retention
- 10. Pull handles: Linear pull handles to match existing
 - 10.1. Size: 1050mm clear opening.
 - 10.2. Material/ Finish: satin stainless steel
- 11. Additional ironmongery/ accessories: threshold plate

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.

740 Corrosion protection

1. **Surfaces to be protected:**
2. **Protective coating:** Two coats of bitumen solution to BS 6949 or an approved mastic impregnated tape.
 - 2.1. **Timing of application:** 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.

770 Damp proof courses associated with built-in wood frames

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

780 Damp proof courses in prepared openings

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

790 Fixing of wood frames

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

800 Fixing of loose thresholds

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

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

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

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

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

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

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

820 Sealant joints

1. **Sealant**
 - 1.1. **Manufacturer:** Contractor's choice
 - 1.1.1. **Product reference:** Silicone sealant to external doors, intumescent sealant to fire doors
 - 1.2. **Colour:** To be agreed
 - 1.3. **Application:** As section Z22 to prepared joints. Triangular fillets finished to a flat or slightly convex profile.

830 Fixing ironmongery generally

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

840 Fixing ironmongery to fire resisting door assemblies

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

850 Location of hinges

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

860 Installation of emergency exit devices

1. **Standard:** Unless specified otherwise, install panic bolts/ latches in accordance with BS EN 1125.

Deleted clauses

270 Wood doors **DELETED**

Ω End of Section

L40

General glazing

General requirements

111 Preglazing

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.

130 Removal of glass/ plastics for reuse

1. Existing glass/ plastics and glazing compound, beads, etc: Remove carefully, avoiding damage to frame, to leave clean, smooth rebates free from obstructions and debris.
2. Deterioration of frame/ surround: Submit report on defects revealed by removal of glazing.
 - 2.1. Affected areas: Do not reglaze until instructed.
3. Reusable materials: Clean glass/ plastics, beads and other components that are to be reused.

150 Workmanship and positioning generally

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

151 Preparation

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

152 Preparation

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

155 Glass generally

1. Standards: To BS 952 and relevant parts of:
 - 1.1. BS EN 572 for basic soda lime silicate glass.
 - 1.2. BS EN 1096 for coated glass.
 - 1.3. BS EN 1748-1 for borosilicate glass.
 - 1.4. BS EN 1748-2 for ceramic glass.
 - 1.5. BS EN 1863 for heat strengthened soda lime silicate glass.
 - 1.6. BS EN 12150 for thermally toughened soda lime silicate safety glass.
 - 1.7. BS EN 12337 for chemically strengthened soda lime silicate glass.
 - 1.8. BS EN 13024 for thermally toughened borosilicate safety glass.

- 1.9. 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.
 - 2.1. Edges: Generally undamaged. Shells and chips not more than 2 mm deep and extending not more than 5 mm across the surface are acceptable if ground out.

165 Heat soaking of thermally toughened glass

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

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.

181 Bead fixing with screws

1. Screw spacing: Regular at maximum 225 mm centres, and within 75 mm of each corner.

Types of glazing

230 Bead fixed single glazing

1. Description: Glazing for Vision Panels and Fanlights
2. Pane material: 60 minute fire resistant glass,
 - 2.1. Manufacturer: Pilkington
 - 2.2. Reference: Pyrodur
 - 2.3. Thickness: 10mm
3. Surround/ bead: Hardwood
 - 3.1. Preparation: Priming/ sealing not required
 - 3.2. Bead location: Both sides
 - 3.3. Bead fixing: Screwed at 150mm centres
4. Glazing compound: intumescent glazing seal to Contractor's choice
5. Glazing installation
 - 5.1. Glass: Located centrally in surround using setting and location blocks and distance pieces.
 - 5.2. Finished thickness of back bedding after inserting glazing (minimum): 3 mm.
 - 5.3. Front bedding: Applied to fill voids.
 - 5.4. Beads: Bedded in glazing compound and fixed securely.
 - 5.5. Visible edge of glazing compound: Finished internally and externally with a smooth chamfer.

520 Fire rating

1. Assessment of capability: Submit proposed construction details of designated items to a UKAS/ EA accredited laboratory or other approved authority for assessment of capability of achieving specified fire ratings.
 - 1.1. Test standard:
2. Assessment/ test results and reports: Submit immediately they are available, and before installing glazing.
3. Designated items:

630 Manifestation

1. Description: See drawings
2. Design: To be confirmed
 - 2.1. Art work: Supplied by client
 - 2.2. Media: Electronic
3. Technique: Applied film

Ω End of Section

M20

Plastered/ rendered/ roughcast coatings

Types of coating

280 Gypsum plaster skim coat on plasterboard

1. Plasterboard: 12.5 plasterboard and Fireline plasterboard
 - 1.1. Preparation: Bonding agent recommended by plaster manufacturer
2. Plaster: Board finish/ finish plaster to BS EN 13279-1.
 - 2.1. Manufacturer: British Gypsum
 - 2.1.1. Product reference: Thistle Boardfinish
 - 2.2. Thickness: 2.5mm
 - 2.3. Finish: Smooth.
3. Accessories: Edge and Angle beads and joint tape as recommended by the manufacturer

General

418 Control samples

1. Complete sample areas, being part of the finished work, in locations as follows: Lime plaster, sample location to be agreed

421 Scaffolding

1. General: Prevent putlog holes and other breaks in coatings.

424 Special protection of historic plasterwork

1. General: Prevent damage and disturbance to retained plasterwork.
2. Protection methods: Submit proposals.

Materials and marking of mortar

430 Ready-to-use cement gauged mortars

1. Time and temperature limitations: Use within limits prescribed by mortar manufacturer
 - 1.1. Retempering: Restore workability with water only within prescribed time limits.

438 Cements for mortars

1. Cement: To BS EN 197-1.
 - 1.1. Types: Portland cement, CEM I.
2. Portland slag cement, CEM II.
3. Portland fly ash cement, CEM II.
 - 3.1. Strength class: 32.5, 42.5 or 52.5.
4. White cement: To BS EN 197-1.
 - 4.1. Type: Portland cement, CEM1.
 - 4.2. Strength class: 52.5.
5. Sulfate resisting Portland cement: To BS EN 197-1.
 - 5.1. Strength class: 42.5.
6. Masonry cement: To BS EN 998-1 and Kitemarked.

440 Sand for cement gauged mortars

1. **Standard:** To BS EN 13139.
 - 1.1. **Grading:** 0/2 or 0/4 (CP or MP); Category 2 fines.
2. **Colour and texture:** Consistent. Obtain from one source.

443 Lime for cement gauged mortars

1. **Standard:** To BS EN 459-1.
 - 1.1. **Type:** CL 90S.

445 Pigment for coloured mortars

1. **Standard:** To BS EN 12878.

449 Admixtures for cement gauged mortars

1. **Suitable admixtures:** Select from:
 - 1.1. **Air entraining (plasticizing) admixtures:** To BS EN 934-2 and compatible with other mortar constituents.
 - 1.2. **Other admixtures:** Submit proposals.
2. **Prohibited admixtures:** Calcium chloride and any admixture containing calcium chloride.

450 Chloride content of mortars

1. **Chloride content (maximum):** 0.1% by dry mass.

478 Hydraulic lime

1. **Standard:** To BS EN 459-1.
 - 1.1. **Type:** Natural hydraulic lime (NHL).

481 Ready prepared lime putty

1. **Type:** Slaked directly from CL 90 quicklime to BS EN 459-1, using an excess of water.
 - 1.1. **Maturation:** In pits/ containers that allow excess water to drain away.
 - 1.2. **Density of matured lime putty:** 1.3-1.4 kg/L.
2. **Maturation period before use (minimum):** 90 days.
3. **Storage:** Prevent drying out or wetting: Protect from frost.

495 Mixing

1. **Render mortars (site prepared)**
 - 1.1. **Batching:** By volume. Use clean and accurate gauge boxes or buckets.
 - 1.2. **Mix proportions:** Based on damp sand. Adjust for dry sand.
 - 1.3. **Lime:sand:** Mix thoroughly. Allow to stand, without drying out, for at least 16 hours before using.
2. **Mixes:** Of uniform consistence and free from lumps. Do not retemper or reconstitute mixes.
3. **Contamination:** Prevent intermixing with other materials.

497 Cold weather

1. **General:** Do not use frozen materials or apply coatings on frozen or frost bound substrates.
2. **External work:** Avoid when air temperature is at or below 5°C and falling or below 3°C and rising. Maintain temperature of work above freezing until coatings have fully hardened.

3. **Internal work:** Take precautions to enable internal coating work to proceed without detriment when air temperature is below 3°C.

Preparing substrates

510 Suitability of substrates

1. **Soundness:** Free from loose areas and significant cracks and gaps.
2. **Cutting, chasing, making good, fixing of conduits and services outlets and the like:** Completed.
3. **Tolerances:** Permitting specified flatness/ regularity of finished coatings.
4. **Cleanliness:** Free from dirt, dust, efflorescence and mould, and other contaminants incompatible with coatings.

527 Raking out for key

1. **Joints in existing masonry:** Rake out to a depth of 13 mm (minimum).
 - 1.1. **Dust and debris:** Remove from joints.

541 Bonding agent application

1. **General:** Apply evenly to substrate to achieve effective bond of plaster/ render coat. Protect adjacent joinery and other surfaces.

551 Removal and renewal of existing plaster/ render

1. **Location and extent:** Agree, at least on a provisional basis, before work commences. Minimize extent of removal and renewal.

556 Removing defective existing render

1. **Render for removal:** Detached, hollow, soft, friable, badly cracked, affected by efflorescence or otherwise damaged.
2. **Removing defective render:** Cut out to regular rectangular areas with straight edges.
 - 2.1. **Horizontal and vertical edges:** Square cut or slightly undercut.
 - 2.2. **Bottom edges to external render:** Do not undercut.
 - 2.3. **Render with imitation joints:** Cut back to joint lines.
3. **Cracks**
 - 3.1. **Fine hairline cracking/ crazing:** Leave.
 - 3.2. **Other cracks:**
4. **Dust and loose material:** Remove from exposed substrates and edges.

566 Removing defective existing plaster

1. **Plaster for removal:** Detached, soft, friable, badly cracked, affected by efflorescence or otherwise damaged.
 - 1.1. **Hollow, detached areas:**
2. **Stained plaster:**
3. **Removing defective plaster.** Cut back to a square, sound edge.
4. **Faults in substrate (structural deficiencies, damp, etc.):** Submit proposals.
5. **Cracks**
 - 5.1. **Fine hairline cracking/ crazing:** Leave.
 - 5.2. **Other cracks:**
6. **Dust and loose material:** Remove from exposed substrates and edges.

568 Existing damp affected plaster/ render

1. Plaster affected by rising damp: Remove to a height of 300 mm above highest point reached by damp or 1 m above dpc, whichever is higher.
2. Perished and salt contaminated masonry
 - 2.1. Mortar joints: Rake out.
 - 2.2. Masonry units: Submit proposals.
3. Faults in substrate (structural deficiencies, additional sources of damp, etc.): Submit proposals.
4. Drying out substrates: Establish drying conditions. Leave walls to dry for as long as possible before plastering.
5. Dust and loose material: Remove from exposed substrates and edges.

584 Record castings

1. Timing: Make castings before commencing repair work, to enable accurate reproductions to be made.
2. Items for casting:
3. Identification: Mark clearly to identify original location.

587 Replacing timber laths

1. Defective plaster and laths: Remove. Prevent disturbance to adjacent sound plaster.
 - 1.1. Defective laths: Cut back to supporting timbers.
 - 1.2. Cavities: Keep clear of debris.
2. Supports for laths: Sound and firmly fixed. Provide additional supports where necessary.
3. New lathing:

Backings/ beads/ joints

600 Additional framing supports for backings

1. Framing: Accurately position and securely fix to give full support to fixtures, fittings and service outlets.
2. Support board edges and perimeters: As recommended by board manufacturer to suit type and performance of board.

605 Gypsum plasterboard backings

1. Type: To BS EN 520
 - 1.1. Core density (minimum): 650 kg/m³.
2. Exposed surface and edge profiles: Suitable to receive specified plaster finish.

610 Fixing plasterboard backings to timber

1. Fixings, accessories and installation methods: As recommended by board manufacturer.
2. Fixing: At the following centres (maximum):
 - 2.1. Nails: 150 mm.
 - 2.2. Screws to partitions/ walls: 300 mm. Reduce to 200 mm at external angles.
 - 2.3. Screws to ceilings: 230 mm.
3. Position of nails/ screws from edges of boards (minimum)
 - 3.1. Bound edges: 10 mm.
 - 3.2. Cut/ unbound edges: 13 mm.
4. Position of nails/ screws from edges of supports (minimum): 6 mm.

5. Nail/ screw heads: Set below surface. Do not break paper or gypsum core.

612 Joints in plasterboard backings

1. Ceilings
 - 1.1. Bound edges: At right angles to supports and with ends staggered in adjacent rows.
 - 1.2. Two layer boarding: Stagger joints between layers.
2. Partitions/ walls
 - 2.1. Vertical joints: Centre on studs. Stagger joints on opposite sides of studs.
 - 2.1.1. Two layer boarding: Stagger joints between layers.
 - 2.2. Horizontal joints
 - 2.2.1. Two layer boarding: Stagger joints between layers by at least 600 mm. Support edges of outer layer.
3. Joint widths (maximum): 3 mm.

630 Beads/ stops for internal use

1. Standard: In accordance with BS EN 13914-2, Table 2.
2. Material: Stainless Steel

640 Beads/ stops generally

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

659 Plasterboard joints

1. Joints and angles (except where coincident with metal beads). Reinforce with continuous lengths of jointing tape.

673 Plasterboard over conduits/ service chases

1. General: Prevent cracking over conduits and other services.
2. Services chased into substrate: Isolate from coating by covering with galvanized metal lathing, fixed at staggered centres along both edges.

Mouldings/ decorative plasterwork - Not Used

Internal plastering

710 Application generally

1. Application of coatings: Firmly and in one continuous operation between angles and joints. Achieve good adhesion.
2. Appearance of finished surfaces: Even and consistent. Free from rippling, hollows, ridges, cracks and crazing.
 - 2.1. Accuracy: Finish to a true plane, to correct line and level, with angles and corners to a right angle unless specified otherwise, and with walls and reveals plumb and square.
3. Drying out: Prevent excessively rapid or localized drying out.

715 Flatness/ surface regularity

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

718 Junction of new plasterwork with existing

1. New plasterwork: Finish flush with original face of existing plasterwork to form a seamless junction.

720 Dubbing out

1. General: Correct substrate inaccuracies.
2. New smooth dense concrete and similar surfaces: Dubbing out prohibited unless total plaster thickness is within range recommended by plaster manufacturer.
3. Thickness of any one coat (maximum): 10 mm.
4. Mix: As undercoat.
5. Application: Achieve firm bond. Allow each coat to set sufficiently before the next is applied. Cross scratch surface of each coat.

725 Undercoats generally

1. General: Rule to an even surface. Cross scratch to provide a key for the next coat.
2. Undercoats on metal lathing: Work well into interstices to obtain maximum key.
3. Undercoats gauged with Portland cement: Do not apply next coat until drying shrinkage is substantially complete.

742 Thin coat plaster

1. Preparation for plasters less than 2 mm thick: Fill holes, scratches and voids with finishing plaster.

747 Projection plaster

1. Application: Evenly and in one continuous operation between angles and joints.
2. Finish: A level open textured surface before finishing manually.

777 Smooth finish

1. Appearance: A tight, matt, smooth surface with no hollows, abrupt changes of level or trowel marks. Avoid water brush, excessive trowelling and over polishing.

789 Three layer nonhydraulic lime plaster final coat

1. Suction control: Dampen undercoat.
2. Application
 - 2.1. First layer: Use steel trowel.
 - 2.2. Second layer: Use wood float in the opposite direction to the first layer.
 - 2.3. Third layer: Use a steel trowel in the same direction as second layer.
3. Consolidation/ scouring: As necessary to control shrinkage. Use a wood cross grain float.
4. Finishing: Dampen with a stock brush. Polish with a steel trowel. Finish with a damp stock brush.
5. Drying: Keep damp by light spraying with water until coating is sufficiently firm.

External rendering

810 Application generally

1. **Application of coatings:** Firmly and in one continuous operation between angles and joints. Achieve good adhesion.
2. **Appearance of finished surfaces:** Even and consistent. Free from rippling, hollows, ridges, cracks and crazing.
 - 2.1. **Accuracy:** Finish to a true plane, to correct line and level, with angles and corners to a right angle unless specified otherwise, and with walls and reveals plumb and square.
3. **Drying:** Prevent excessively rapid or localized drying out.

815 Flatness/ surface regularity of rendering to receive ceramic tiles

1. **Sudden irregularities:** Not permitted.
2. **Deviation of render surface:** Measure from underside of a 2 m straight edge placed anywhere on surface.
 - 2.1. **Permissible deviation (maximum):** 3 mm.

820 Dubbing out rendering

1. **General:** Correct substrate inaccuracies.
2. **Thickness of any one coat (maximum):** 16 mm.
 - 2.1. **Total thickness (maximum):** 20 mm, otherwise obtain instructions.
3. **Mix:** As undercoat.
4. **Application:** Achieve firm bond. Allow each coat to set sufficiently before the next is applied. Comb surface of each coat.

830 Anchored mesh reinforcement

1. **Application of first undercoat:** Through and round mesh to fully bond with solid substrate.

840 Undercoats generally

1. **General:** Rule to an even surface. Comb to provide a key for the next coat. Do not penetrate the coat.
2. **Undercoats on metal lathing:** Work well into interstices to obtain maximum key.

885 Curing and drying nonhydraulic lime render

1. **General:** Prevent premature setting and uneven drying of each coat.
2. **Curing coatings:** Keep each coat damp by covering with sheeting hung clear of coating. Spray with water until sufficiently firm.
 - 2.1. **Sheeting:**
3. **Shrinkage:** Thoroughly consolidate/ scour each coat one or more times as necessary to control shrinkage.

Ω End of Section

M60

Painting/clear finishing **REVISED**

Coating systems

110 Emulsion paint

1. Description: TO INTERNAL PLASTERED SURFACES
2. Manufacturer: See Clause 210
 - 2.1. Product reference: Submit proposals
3. Surfaces:
 - 3.1. Preparation: Ensure surfaces are clean and dry
4. Initial coats: mist coat as recommended by manufacturer
5. Number of coats: 1
6. Undercoats: As recommended by manufacturer
 - 6.1. Number of coats: 1
7. Finishing coats: To be agreed
 - 7.1. Number of coats: Two.

130 Gloss paint

1. Description: Existing painted external timber surfaces
2. Manufacturer: See Clause 210
 - 2.1. Product reference: Weathershield Gloss or equivalent
3. Surfaces: Previously decorated
 - 3.1. Preparation: As Clause 440
4. Initial coats: As recommended by manufacturer
 - 4.1. Number of coats: 1
5. Undercoats: As recommended by manufacturer
 - 5.1. Number of coats: 1
6. Finishing coats: Full gloss, colours to be confirmed
 - 6.1. Number of coats: Two

150 Eggshell/ satin paint

1. Description: For internal woodwork
2. Manufacturer: See Clause 210
 - 2.1. Product reference: Submit proposals
3. Surfaces: Preprimed and sealed or Previously decorated
 - 3.1. Preparation: As Clause 400 or 440 as appropriate
4. Initial coats: As recommended by manufacturer
 - 4.1. Number of coats:
5. Undercoats: As recommended by manufacturer
 - 5.1. Number of coats:
6. Finishing coats: To be agreed
 - 6.1. Number of coats: 1

160 Water-based Woodstain For internal woodwork **REVISED**

1. Manufacturer: [Dulux Trade, brand of AkzoNobel](#)
 - 1.1. Contact details
 - 1.1.1. Address: AkzoNobel Decorative Paints
Wexham Road
Slough
Berkshire
SL2 5DS
 - 1.1.2. Telephone: [+44 \(0\)333 222 7070](tel:+44(0)3332227070)
 - 1.1.3. Web: www.duluxtradepaintexpert.co.uk
 - 1.1.4. Email: project.support@akzonobel.com
 - 1.2. Product reference: [Dulux Trade Quick Dry Opaque](#)
2. Composition: Water-based.
3. Colour: Colour ref. TBC - to match existing.
4. Execution: Applying wood stain.
5. System code:
6. Form: Liquid.
7. Capacity:
8. Build: Manufacturer's standard.
9. Opacity: Opaque.

Generally

210 Coating materials

1. Manufacturers: Obtain materials from any of the following:
2. Dulux, Crown Paints, Johnstone's Paints, AkzoNobel .
3. Selected manufacturers: Submit names before commencement of coating work.

215 Handling and storage

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

220 Compatibility

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

240 Surfaces not to be coated

1. Components supplied pre-finished.

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.

320 Inspection by coating manufacturers

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

Preparation

400 Preparation generally

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

425 Ironmongery

1. **Removal:** Before commencing work: Remove ironmongery from surfaces to be coated.
2. **Hinges:** Remove
3. **Replacement:** Refurbishment as necessary; refit when coating is dry.

440 Previously coated surfaces generally

1. **Preparation:** In accordance with BS 6150, clause 11.5.
2. **Contaminated or hazardous surfaces:** Give notice of:
 - 2.1. Coatings suspected of containing lead.
 - 2.2. Substrates suspected of containing asbestos or other hazardous materials.
 - 2.3. Significant rot, corrosion or other degradation of substrates.
3. **Suspected existing hazardous materials:** Prepare risk assessments and method statements covering operations, disposal of waste, containment and reoccupation, and obtain approval before commencing work.
4. **Removing coatings:** Do not damage substrate and adjacent surfaces or adversely affect subsequent coatings.
5. **Loose, flaking or otherwise defective areas:** Carefully remove to a firm edge.
6. **Alkali affected coatings:** Completely remove.

7. Retained coatings
 - 7.1. Thoroughly clean to remove dirt, grease and contaminants.
 - 7.2. Gloss coated surfaces: Provide key.
8. Partly removed coatings
 - 8.1. Additional preparatory coats: Apply to restore original coating thicknesses.
 - 8.2. Junctions: Provide flush surface.
9. Completely stripped surfaces: Prepare as for uncoated surfaces.

461 Previously coated wood

1. Degraded or weathered surface wood: Take back to provide suitable substrate.
2. Degraded substrate wood: Repair with sound material of same species.
3. Exposed resinous areas and knots: Apply two coats of knotting.

471 Preprimed wood

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

481 Uncoated wood

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

490 Previously coated steel

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

511 Galvanized, sherardized and electroplated steel

1. White rust: Remove.
2. Pretreatment: Apply one of the following:
 - 2.1. Mordant solution to blacken whole surface.
 - 2.2. Etching primer recommended by coating system manufacturer.

521 Uncoated steel – manual cleaning

1. Oil and grease: Remove.
2. Corrosion, loose scale, welding slag and spatter: Remove.
3. Residual rust: Treat with a proprietary removal solution.
4. Primer: Apply as soon as possible.

570 Uncoated masonry/ Rendering

1. Loose and flaking material: remove.

580 Uncoated plaster

1. Nibs, trowel marks and plaster splashes: Scrape off.

2. Overtrowelled 'polished' areas: Key lightly.

590 Uncoated plasterboard

1. Depressions around fixings: Fill with stoppers/ fillers

611 Wall coverings

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

622 Organic growths

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

631 Previously painted window frames

1. Paint encroaching beyond glass sight line: Remove.
2. Loose and defective putty: Remove.
3. Putty cavities and junctions between previously painted surfaces and glass: Clean thoroughly.
4. Finishing
 - 4.1. Patch prime, reputty as necessary, and allow to set.
 - 4.2. Seal and coat as soon as fully set.

Application

711 Coating generally

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

720 Priming joinery

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

730 Workshop coating of concealed joinery surfaces

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

770 External doors

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

780 Bead glazing to coated wood

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

790 Linseed oil putty glazing

1. **Setting:** Allow putty to set for seven days.
2. **Sealing**
 - 2.1. Within a further 14 days, seal with a solvent-borne primer.
 - 2.2. Fully protect putty with coating system as soon as it is sufficiently hard.
 - 2.3. Extend finishing coats on to glass up to sight line.

800 Glazing

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

810 Water repellent

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

Ω End of Section

M61

Intumescent coatings for fire protection of steelwork

Protective coating systems

110 On site coating to primed steel

1. Description: Internally
2. Use/ location: Exposed internal faces of beams and columns
3. Fire performance: 120 minutes To BS EN 13501-1 and -2, as clause 202
4. Preparation and priming: By steelwork contractor, as section G10.
5. Intumescent coating system
 - 5.1. Manufacturer: tremco illbruck Ltd
Coupland Road, Hindley Green, WIGAN, WN2 4HT Tel: +44 (0) 1942251400, Fax: +44 (0) 1942251410 msds@tremco-illbruck.com
 - 5.1.1.Product reference: Nullifire SC801-120
 - 5.2. Intumescent coat
 - 5.2.1.Type: water based, airless spray or brush/roller applied
 - 5.2.2.Finish: Visible areas: High decorative
 - 5.2.3.Thickness: Apply to the thickness required to provide 120 minutes protection for the section sizes in accordance with the manufacturer's recommendations
 - 5.3. Top sealer coat
 - 5.3.1.Type: Nullifire TS816
 - 5.3.2.Colour: to be selected
6. Bolt head/ Nut protection: As main steelwork

120 On site coating to existing steel

1. Description: INTERNALLY
2. Use/ Location: Exposed internal faces of columns, beams and purlins, but excluding cladding rails
3. Fire performance: 120 minutes To BS EN 13501-1 and -2, as clause 202
4. Preparation: Manual cleaning
5. Intumescent coating system
 - 5.1. Manufacturer: tremco illbruck Ltd
Coupland Road, Hindley Green, WIGAN, WN2 4HT Tel: +44 (0) 1942251400, Fax: +44 (0) 1942251410 msds@tremco-illbruck.com
 - 5.1.1.Product reference: Nullifire SC801-120
 - 5.2. Primer
 - 5.2.1.Type: as recommended by the manufacturer
 - 5.3. Intumescent coat
 - 5.3.1.Type: water based, airless spray or brush/roller applied
 - 5.3.2.Finish: Visible areas: High decorative
 - 5.3.3.Thickness: Apply to the thickness required to provide 120 minutes protection for the section sizes in accordance with the manufacturer's recommendations
 - 5.4. Top sealer coat
 - 5.4.1.Type: Nullifire TS816
 - 5.4.2.Colour: To be selected
6. Bolt head/ Nut protection: As main steelwork

Performance and general requirements

203 Fire performance to BS 476

1. Fire resistance to BS 476-21: 120 minutes

204 Exposure and durability

1. Environmental exposure: C3
2. Durability classification: Z1

205 Validation of materials

1. Project-specific evaluation of intumescent coating materials
 - 1.1. Standard: In accordance with BS EN 16623, clause 4.
 - 1.2. 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.

250 Sprayed coating application on site

1. Standard: In accordance with BS EN 16623.
2. Spray drift: Minimize.
3. Uncoated areas of steel:
4. Masking: Protect designated adjacent surfaces.
 - 4.1. Designated surfaces:

270 Inspection

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

Preparation of surfaces

315 New steel – blast cleaning

1. Preparation: Remove oil, grease and contaminants.

2. Blast cleaning
 - 2.1. Atmospheric condition: Dry.
 - 2.2. Abrasive: Suitable type and size, free from fines, moisture and oil.
 - 2.3. Finish: To BS EN ISO 8501-1, preparation grade SA2½, with an average profile of approximately 75 micrometres.
 - 2.4. Abrasive residues and moisture: Remove.
3. Primer: Apply as soon as possible after cleaning and before gingering or blackening appears.

320 Existing steel – blast cleaning

1. Preparation: Remove oil, grease and contaminants.
2. Blast cleaning: Remove existing coatings and rust.
 - 2.1. Atmospheric condition: Dry.
 - 2.2. Abrasive: Suitable type and size, free from fines, moisture and oil.
 - 2.3. Finish: To BS EN ISO 8501-1, preparation grade SA2½, with an average profile of approximately 75 micrometres.
 - 2.4. Abrasive residues and moisture: Remove.
3. Primer: Apply as soon as possible after cleaning and before gingering or blackening appears.

330 Existing steel – manual cleaning

1. Preparation: Remove oil, grease and contaminants.
2. Loose or unsound coatings: Remove to a firm edge.
3. Finish: To BS EN ISO 8501-1, preparation grade St2. Leave a clean but unpolished dry surface.
4. Primer: Apply as soon as possible after cleaning and before gingering or blackening appears. Remove coating edges that lift as a result of priming, and reprime.

340 Existing steel – preparation for overcoating

1. Preparation: Remove oil, grease and contaminants.
2. Loose or unsound coatings: Remove to a firm edge.
3. Exposed steel finish: Manually clean to BS EN ISO 8501-1, grade St2. Leave a clean but unpolished dry surface.
4. Existing coatings finish: Abrade to give a good key. Leave a clean, dry surface.
5. Primer: Apply one brush coat to bare steel areas. Remove coating edges that lift as a result of priming, and reprime.

Application of castings

402 Intumescent casting thickness

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

404 Intumescent casting installation

1. **Assembly:** Adhesive fix casting sections tight to steel substrate.
2. **Filling:** Apply intumescent filler to all joints and deformations to produce a smooth and uniform finish.

Application of coatings

410 Intumescent coating dry film thickness (dft)

1. **Applicable coatings:**
2. **Required dft:** Determine for every steel member to give specified period of fire resistance. Use intumescent coating manufacturer's current published loading tables.
 - 2.1. **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.
 - 3.1. **Schedule content:** Member sizes, weights/ thicknesses, loading conditions, etc. showing, for each variant, the exposed perimeter/ sectional area (Hp/A) ratio and required dft.
 - 3.2. **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:
 - 2.1. 500 mm centres along each coated plane of universal sections (8 planes), and rectangular hollow sections (4 planes).
 - 2.2. 125 mm centres along coated circular hollow sections, spread evenly around circumference.
3. **Acceptance standard**
 - 3.1. **Average intumescent dft:** Not less than required dft (exclusive of primer and top sealer).
 - 3.2. **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.

450 Normal decorative finish

1. **Definition:** Good standard of cosmetic finish generally, when viewed from a distance of 5 m or more. Minor orange peel or other texture is acceptable.

460 High decorative finish

1. **Definition:** High standard of evenness, smoothness and gloss when viewed from a minimum distance of 2 m.

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
 - 1.1. Accurate surface preparation, coating and intumescent application records.
 - 1.2. Fire resistance certificates.
 - 1.3. Intumescent manufacturer's recommendations for maintenance and overcoating.

Ω End of Section

N10

General fixtures/ furnishings/ equipment **ADDED**

Products

300 Entrance mats Type A **ADDED**

1. Manufacturer: [Gradus](#)
 - 1.1. Contact details
 - 1.1.1. Address: Chapel Mill
Park Green
Macclesfield
Cheshire
SK11 7LZ
 - 1.1.2. Telephone: [+44 \(0\)1625 428922](tel:+44(0)1625428922)
 - 1.1.3. Web: www.gradus.com
 - 1.1.4. Email: imail@gradus.com
 - 1.2. Product reference: [Esplanade 1500 Primary Barrier Matting \(Carpet wipers\)](#)
2. Arrangement: Inset internal.
3. Dimensions: 16.5 mm gauge.
4. Material: PVC.
5. Pattern: Ribbed.
6. Colour: Black.
7. Integral accessories: UMFA - aluminium matwell frame.
8. Construction: Closed.
9. Flammability: Class Efl.

Execution

720 Installation generally **ADDED**

1. General: As Preliminaries section A33
2. Fixing and fasteners: As section Z20.
3. Services: Not applicable

770 Trims **ADDED**

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 **ADDED**

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

P12

Fire stopping systems

General

140 Fire stopping system to multiple services penetrations

1. **Description:** To pipes, cables, cable trays and duct through fire resisting walls. Refer to Rockwool Firepro Standard Details for each relevant methodology
2. **Fire resistance:** As Neo fire schedules
3. **Board barrier**
 - 3.1. **Material:** Mineral wool ablative coated rigid batts, as clause 360
 - 3.1.1. **Thickness:** 50 mm
 - 3.1.2. **Number of layers:** One or two as per Rockwool Firepro Standard Detail. See Compartmentation Methodologies
 - 3.2. **Framing:** Not required
 - 3.3. **Finish:** Not applicable
4. **Gap sealer:** gap filler, as clause 385
5. **Capping sealant:** Fire-resisting acrylic construction joint sealants, as clause 390
 - 5.1. **Colour:** Not applicable

145 Fire stopping system to multiple services penetrations Face fixed

1. **Description:** To pipes, cables, cable trays and duct through fire resisting walls. Refer to Rockwool Firepro Standard Details for each relevant methodology
2. **Fire resistance:** As Neo fire schedules
3. **Board barrier**
 - 3.1. **Material:** Mineral wool ablative coated rigid batts, as clause 360
 - 3.1.1. **Thickness:** 50 mm
 - 3.1.2. **Number of layers:** One or two as per Rockwool Firepro Standard Detail. See Compartmentation Methodologies
 - 3.2. **Framing:** Not required. Provide 100mm overlap around aperture.
 - 3.3. **Fixing:** 75mm drywall screws with 25mm washers at 300mm centres
 - 3.4. **Finish:** Not applicable
4. **Gap sealer:** gap filler, as clause 385
5. **Capping sealant:** Fire-resisting acrylic construction joint sealants, as clause 390
 - 5.1. **Colour:** Not applicable

160 Linear gap sealing

1. **Description:** In fire-resisting walls
2. **Fire resistance:** As NEO documentation
3. **Gap width or height (nominal):** 10 - 30 mm
4. **Gap filler:** Mineral wool, as clause 385
5. **Capping sealant:** Fire-resisting acrylic construction joint sealants, as clause 390
 - 5.1. **Colour:** Not applicable

System performance

210 Design

1. Design: Complete the design of the fire stopping system.
2. Proposals: Submit drawings, technical information, calculations and manufacturers' literature.

240 Fire performance

1. Description: Compartment Floors
2. Resistance to fire: To BS EN 13501-2, EI 120 or better
3. Reaction to fire: To BS EN 13501-1, Class A1
4. Smoke resistance
 - 4.1. Air leakage rate (maximum): 10 m³/m²·hr

260 Design life

1. Effective design life: 30 years

Products

336 Intumescent foam fillers

1. Manufacturer: [Hilti \(Gt Britain\) Ltd](#)
 - 1.1. Contact details
 - 1.1.1. Address: 1 Trafford Wharf Road
Trafford Park
Manchester
M17 1BY
 - 1.1.2. Telephone: [+44 \(0\)800 886100](tel:+44(0)800886100)
 - 1.1.3. Web: www.hilti.co.uk
 - 1.1.4. Email: gbtas@hilti.com
 - 1.2. Product reference: [CFS-F FX](#)
2. Material: Two part polyurethane expanding intumescent foam.
3. Colour: Red.
4. Application temperature: 10–35°C.
5. Temperature resistance: -30 to +60°C.
6. Fire reaction (EN 13501-1): Class E.
7. VOC emissions: 34.5 g/L.
8. Cure time: 10 minutes.

338 Intumescent mastic

1. Manufacturer:
 - 1.1. Product reference:

340 Intumescent mortars Type A

1. Manufacturer: [ROCKWOOL Ltd](#)
 - 1.1. Contact details
 - 1.1.1. Address: ROCKWOOL Ltd
14th Floor, Chiswick Tower
389 Chiswick High Road

London
W4 4AJ

1.1.2. Telephone: +44 (0)1656 862621

1.1.3. Web: <https://www.rockwool.com/uk/>

1.1.4. Email: info@rockwool.com

1.2. Product reference: [ROCKWOOL® FIREPRO® Firestop Compound](#)

2. Material: Gypsum based.
3. Fire resistance: 360 minutes.
4. LoadBearingCapacity: Up to 2.5 KN.
5. Acoustic performance: Up to 51 dB.

360 Mineral wool slab insulation Type A

1. Manufacturer: [ROCKWOOL Ltd](#)

1.1. Contact details

1.1.1. Address: ROCKWOOL Ltd
14th Floor, Chiswick Tower
389 Chiswick High Road
London
W4 4AJ

1.1.2. Telephone: +44 (0)1656 862621

1.1.3. Web: <https://www.rockwool.com/uk/>

1.1.4. Email: info@rockwool.com

1.2. Product reference: [ROCKWOOL® FIREPRO® Ablative Coated Batt](#)

2. General requirements: Insulation products generally.
3. Thickness: 50 mm.
4. Facing: Ablative coated.
5. Density: 160 kg/m³.
6. Fire performance: Euroclass fire rating A1.
7. Width: 600 mm.
8. Accessories: ROCKWOOL Firepro Glue for two bonded layers. See ROCKWOOL Firepro Standard Details
9. Air leakage: 0.8 m³/h/m².

362 Mineral wool slab insulation Type B

1. Manufacturer: [ROCKWOOL Ltd](#)

1.1. Contact details

1.1.1. Address: ROCKWOOL Ltd
14th Floor, Chiswick Tower
389 Chiswick High Road
London
W4 4AJ

1.1.2. Telephone: +44 (0)1656 862621

1.1.3. Web: <https://www.rockwool.com/uk/>

1.1.4. Email: info@rockwool.com

1.2. Product reference: [ROCKWOOL® FIREPRO® Ablative Coated Batt](#)

2. General requirements: Insulation products generally.
3. Thickness: 60 mm

4. Facing: Ablative coated.
5. Density: 160 kg/m³.
6. Fire performance: Euroclass fire rating A1.
7. Width: 600 mm.
8. Accessories:
9. Air leakage: 0.8 m³/h/m².

363 Mineral wool slab insulation Linear fire stop system

1. Manufacturer: [ROCKWOOL Ltd](#)
 - 1.1. Contact details
 - 1.1.1. Address: ROCKWOOL Ltd
14th Floor, Chiswick Tower
389 Chiswick High Road
London
W4 4AJ
 - 1.1.2. Telephone: [+44 \(0\)1656 862621](tel:+44201656862621)
 - 1.1.3. Web: <https://www.rockwool.com/uk/>
 - 1.1.4. Email: info@rockwool.com
 - 1.2. Product reference: Linear Firestop 2A and Linear Firestop 2B
2. General requirements: To suit deck profile
3. Thickness: To suit location
4. Facing: None
5. Density: 400 kg/m³.
6. Fire performance: Euroclass fire rating A1.
7. Width: 600 mm.

365 Mineral wool slab insulation Fire Barrier System

1. Manufacturer: [ROCKWOOL Ltd](#)
 - 1.1. Contact details
 - 1.1.1. Address: ROCKWOOL Ltd
14th Floor, Chiswick Tower
389 Chiswick High Road
London
W4 4AJ
 - 1.1.2. Telephone: [+44 \(0\)1656 862621](tel:+44201656862621)
 - 1.1.3. Web: <https://www.rockwool.com/uk/>
 - 1.1.4. Email: info@rockwool.com
 - 1.2. Product reference: ROCKWOOL FIRE BARRIER
2. General requirements: Insulation products generally.
3. Thickness: 60 mm.
4. Facing: Unfaced
5. Fire performance: To BS 476-22 , Euroclass Fire Rating A1.
6. Accessories: Clamping plate 3 x 40 mm. and Fire barrier support angles 3 x 34 x 75 mm.

370 Pipe collar Universal Fire Collar

1. Type: Concealed intumescent pipe collar

2. Manufacturer: Mulcol International
www.mulcol.com
- 2.1. Product reference: Multicollar Slim

372 Pipe sleeves Type A

1. Manufacturer: [ROCKWOOL Ltd](#)
 - 1.1. Contact details
 - 1.1.1.Address: ROCKWOOL Ltd
14th Floor, Chiswick Tower
389 Chiswick High Road
London
W4 4AJ
 - 1.1.2.Telephone: [+44 \(0\)1656 862621](tel:+44201656862621)
 - 1.1.3.Web: <https://www.rockwool.com/uk/>
 - 1.1.4.Email: info@rockwool.com
 - 1.2. Product reference: [FIREPRO® Pipewrap Roll](#)
2. Form: Manufacturer's standard.
3. Fire performance: To BS 476-20, up to EI240.
4. Density: 1.3 kg/m³.
5. Length: 25 mm.
6. Width: 40 mm.
7. Thickness: 2 mm.

375 Pipe sleeves Intumescent

1. Manufacturer: [ROCKWOOL Ltd](#)
 - 1.1. Contact details
 - 1.1.1.Address: ROCKWOOL Ltd
14th Floor, Chiswick Tower
389 Chiswick High Road
London
W4 4AJ
 - 1.1.2.Telephone: [+44 \(0\)1656 862621](tel:+44201656862621)
 - 1.1.3.Web: <https://www.rockwool.com/uk/>
 - 1.1.4.Email: info@rockwool.com
 - 1.2. Product reference: Firepro Insulated Fire Sleeves
2. Form: Manufacturer's standard.
3. Fire performance: To BS 476-20, up to EI240.
4. Density: 1.3 kg/m³.
5. Length: 150 - 300mm
6. Width: Various, to suit location
7. Thickness: 25mm

376 Pipe sleeves H&V

1. Manufacturer: [ROCKWOOL Ltd](#)
 - 1.1. Contact details
 - 1.1.1.Address: ROCKWOOL Ltd
14th Floor, Chiswick Tower
389 Chiswick High Road

London
W4 4AJ

1.1.2. Telephone: +44 (0)1656 862621

1.1.3. Web: <https://www.rockwool.com/uk/>

1.1.4. Email: info@rockwool.com

1.2. Product reference: Firepro RocLap H&V Pipe Section

2. Form: Manufacturer's standard.
3. Fire performance: To BS 476-20, up to EI240.
4. Density: 1.3 kg/m³.
5. Length: 300mm
6. Width: To suit pipe diameter
7. Thickness: 25mm or 40mm
8. Accessories: Rocklap Pipe Supports and aluminium foil tape

377 Pipe sleeves For Plastic Pipes

1. Manufacturer: [ROCKWOOL Ltd](#)

1.1. Contact details

1.1.1. Address: ROCKWOOL Ltd
14th Floor, Chiswick Tower
389 Chiswick High Road
London
W4 4AJ

1.1.2. Telephone: +44 (0)1656 862621

1.1.3. Web: <https://www.rockwool.com/uk/>

1.1.4. Email: info@rockwool.com

1.2. Product reference: [FIREPRO® Pipe Collar CE \(250 x 250 x 30 mm\)](#)

2. Position: Surface mounted.
3. Sizes:
4. Fire performance: Up to EI240 fire resistance.
5. Application temperature: -5°C to 40°C.
6. Expansion: 20:1.
7. Colour: Red.
8. Fixing:

378 Pipe sleeves Fire tubes

1. Manufacturer: [ROCKWOOL Ltd](#)

1.1. Contact details

1.1.1. Address: ROCKWOOL Ltd
14th Floor, Chiswick Tower
389 Chiswick High Road
London
W4 4AJ

1.1.2. Telephone: +44 (0)1656 862621

1.1.3. Web: <https://www.rockwool.com/uk/>

1.1.4. Email: info@rockwool.com

1.2. Product reference: [ROCKWOOL® FIREPRO® Fire Tube](#)

2. Material: Stone wool.

3. Form: Plain.
4. Thickness: 50 mm.
5. Width: to suit location
6. Accessories: ROCKWOOL FirePro Glue.
7. Thermal Conductivity:: 0.033 W/mK.
8. Standard: To BS 3958-4 and ISO 14001.

385 Sealant backing material

1. Manufacturer: ROCKWOOL Limited
Pencoed Bridgend CF35 6NY
Tel: 01656 862 621 info@rockwool.co.uk
- 1.1. Product reference: RWA45

386 Sealant backing material Rod

1. Manufacturer: Contractor's choice
- 1.1. Product reference: PE backing rod
- 1.2. Diameter: 20mm - 50mm to suit location

390 Fire Stopping Sealant One part fire resistant sealant and adhesive

1. Type: Fire resisting acrylic
2. Manufacturer: ROCKWOOL Limited
Pencoed Bridgend CF35 6NY
Tel: 01656 862 621
info@rockwool.co.uk
- 2.1. Product reference: Firepro Acoustic Intumescent Sealant
- 2.2. Colour: Not applicable

395 Fire Stopping Sealant One part high expansion fire resistant sealant

1. Type: Fire resisting acrylic
2. Manufacturer: ROCKWOOL Limited
Pencoed Bridgend CF35 6NY
Tel: 01656 862 621
info@rockwool.co.uk
- 2.1. Product reference: Firepro High Expansion Intumescent Sealant
- 2.2. Colour: Not applicable

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:

620 Workmanship generally

1. 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.
2. Adjacent surfaces: Prevent overrun of filler, sealant or mortar on to finished surfaces.

640 Installing boarding

1. **Position of boarding:** Within opening
2. **Framing:** Not required
3. **Bedding:** Bed boarding on one-part fire-resisting acrylic as Clause 390
4. **Multiple board layers:** Stagger joints between layers.
 - 4.1. **Joints:** Seal with board adhesive
5. **Fixing:** Adhesive
6. **Other requirements:** Holes for service penetrations to suit location and in accordance with relevant Rockwool standard detail

645 Installing boarding Surface fixed

1. **Position of boarding:** Across face of opening with minimum 100mm margin
2. **Framing:** Not required
3. **Bedding:** Bed boarding on one-part fire-resisting acrylic as Clause 390
4. **Multiple board layers:** Stagger joints between layers.
 - 4.1. **Joints:** Seal with sealant as clause 390
5. **Fixing:** Plugged and screwed with ??? at ??? mm centres
6. **Other requirements:** Holes for service penetrations to suit location and in accordance with relevant Rockwool standard detail

650 Installing flexible intumescent gap sealer

1. **Fitting of strips:** Compress strips and fit into gap so that, as they decompress, the strips wedge themselves in the void.
2. **Shrink wrapping:**
3. **Joints**
 - 3.1. **Ends of strips:** Fit intumescent 'end piece' at both ends of run of fire stop laminate.
 - 3.2. **Joints between strips:** Fit two intumescent 'end pieces' at each butt joint.

660 Applying intumescent 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. **Priming:** Lightly moisten substrate with water.
4. **Application:** Fill joint to approximately half its depth, and allow foam to expand to face of joint.
5. **Trimming:**

690 Applying intumescent putty

1. **Sequence:** Install putty after services are permanently installed.
2. **Loose dust and combustible materials:** Do not disturb putty before final set has taken place.

710 Installing mineral wool batts

1. **Installing batts:** Fit tight into void between the penetrating services and the surrounding construction to form a solid barrier.
 - 1.1. **Brackets:**
 - 1.1.1. **Bracket fixing:**
2. **Face of batts:** Flush with the surface of wall, floor or soffit.
3. **Joints between batts:**

4. Gaps between services and barrier: Seal with fire resisting sealant.

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.

750 Applying capping sealant

1. Preparation: As recommended by the sealant manufacturer
2. Priming: Primer recommended by sealant manufacturer
3. Depth of sealant: In accordance with the sealant manufacturer's standard details
4. Temperature: Do not apply water based sealants when they could be damaged by frost.

Completion

910 Cleaning

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

920 Inspection

1. Notice for inspection (minimum): Five working days

Ω End of Section

P20

Unframed isolated trims/ skirtings/ sundry items

To be read with preliminaries/ general conditions

110 Softwood

1. Description: Skirtings and architraves
2. Quality of wood and fixing: To BS 1186-3.
 - 2.1. Species: European redwood
 - 2.2. Class: 1
3. Moisture content at time of fixing: 9-13%
4. Preservative treatment: Not required
5. Fire rating: Not applicable
6. Profile: Pencil rounded
 - 6.1. Finished size: 19 x 95 mm or to match existing
7. Finish as delivered: Sanded
8. Fixing: Plugged, screwed and pelleted at 600mm centres maximum

120 Hardwood

1. Description: To replacement lipping for existing doors
2. Quality of wood and fixing: To BS 1186-3.
 - 2.1. Species: European oak or submit proposals
 - 2.2. Class: 1
3. Moisture content at time of fixing: 9 -13%
4. Preservative treatment: Not required
5. Fire rating: Not applicable
6. Profile: To match existing
 - 6.1. Finished size: To suit location and to reduce gap to 4mm maximum
7. Finish as delivered: Sanded
8. Fixing: Adhesive as section Z20

240 Plywood

1. Description: For mounting backing in partitions
2. Manufacturer: Contractor's choice
 - 2.1. Product reference: sheathing ply
3. Face ply species: Contractor's choice
4. Appearance class to BS EN 635: Class II/III
5. Bond quality to BS EN 314-2: Class 2
6. Fire rating: Not applicable
7. Thickness: 18mm
8. Support/ Fixing: Sheradized screws at 450 centres to metal studs

Execution

510 Installation generally

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

Ω End of Section

P21

Door/ window ironmongery **REVISED**

Pre-tender

10 Quantities and locations

1. Quantities and locations of ironmongery are Refer to schedules .
2. Fixing: As sections L10 and L20.

General

122 Ironmongery range selected by Contractor For Existing Internal Fire Doors

REVISED

1. Source: Single co-ordinated range.
2. Compliance:: Ironmongery included in successful tests to BS 476-22 or BS EN 1634-1 on door assemblies similar to those proposed.
Product to be reviewed against Forza/door manufacturer recommendations prior to proceeding to ensure existing fire certification is not invalidated.
3. Certification:: Submit evidence of successful testing by UKAS accredited laboratory
4. Notification: Submit details of selected range, manufacturer and/ or supplier.
5. Principal material/ finish: Satin stainless steel, grade 1.4401 (316)
6. Items unavailable within selected range: Submit proposals.
7. Melting point of components (except decorative non-functional parts):: 800°C minimum.

140 Samples

1. General: Before placing orders with suppliers submit labelled samples of the following: one of each type of fitting .
 - 1.1. Conformity: Retain samples on site for the duration of the Contract. Ensure conformity of ironmongery as delivered with labelled samples.

170 Ironmongery for new fire doors **REVISED**

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.
Product to be reviewed against Forza/door manufacturer recommendations prior to proceeding to ensure FD60 certification remains valid.
 - 2.1. Certification: Submit evidence of successful testing by UKAS accredited laboratory
3. Melting point of components (except decorative non-functional parts): 800°C minimum.

180 Strength class or category of duty for door ironmongery **REVISED**

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

Door hanging devices

315 Performance specification for single axis door hinges **REVISED**

1. Description: for existing doors
2. Standard: To BS EN 1935.
 - 2.1. Hinges to doors on escape routes and fire/ smoke control doors: CE marked.
3. Minimum classification grades
 - 3.1. Category of use: BS 1935 Grade 13 (Heavy Duty)
 - 3.2. Durability: 7
 - 3.3. Test door mass: to suit door mass
 - 3.4. Suitability for use on fire/ smoke doors: refer to schedule
 - 3.5. Safety: 1.
 - 3.6. Corrosion resistance: 3 minimum
 - 3.7. Security - Burglar resistance: 1
 - 3.8. Hinge grade: To suit door mass.
4. Type: High performance disc bearing butt
5. Size: As schedule
6. Material/ finish: Satin stainless steel, grade 1.4401 (316)
7. Other requirements: Ironmongery included in successful tests to BS 476-22 or BS EN 1634-1 on door assemblies similar to those proposed.
Product to be reviewed against Forza/door manufacturer recommendations prior to proceeding to ensure existing fire certification is not invalidated.
8. Certification: Submit evidence of successful testing by UKAS accredited laboratory
9. Melting point of components (except decorative non-functional parts):: 800degrees min.

320 Cranked hinges Type A **ADDED**

1. Description: For new and existing 180degree acting doors.
2. Manufacturer: [Hafele UK Ltd](#) Or similar approved
 - 2.1. Contact details
 - 2.1.1. Address: Swift Valley Industrial Estate
Rugby
Warwickshire
CV21 1RD
 - 2.1.2. Telephone: +44 (0)800 171 2907
 - 2.1.3. Web: www.hafele.co.uk/nbs
 - 2.1.4. Email: Estimating.HUK@hafele.co.uk
 - 2.2. Product reference: [Double Action Pivot Sets](#) or similar approved. Product to be reviewed against Forza/door manufacturer recommendations prior to proceeding to ensure FD60 certification remains valid.
3. Type: TBC
4. Material/ finish: Satin stainless steel, grade 1.4301 (304)
5. Other requirements: Screws to match hinge material.
6. Compliance: Ironmongery included in successful tests to BS 476-22 or BS EN 1634-1 on door assemblies similar to those proposed.
7. Certification: Submit evidence of successful testing by UKAS accredited laboratory
8. Melting point of components (except decorative non-functional parts):: 800deg min.

Window hanging devices - Not Used

Door operating devices

412 Performance specification for overhead door closers **REVISED**

1. Description: Replacement closers for new and existing retained internal doors
2. Standard: To BS EN 1154.
 - 2.1. Door closing devices to fire/ smoke control doors: CE marked.
3. Minimum classification grades
 - 3.1. Category of use: 3
 - 3.2. Durability: 8.
 - 3.3. Door closer power size: Adjustable 2-6
 - 3.4. Suitability for use on fire/ smoke doors: 1
 - 3.5. Safety: 1.
 - 3.6. Corrosion resistance: 1
4. Type: Face fixed
5. Other functions: Back check and delayed closing
6. Casing finish: Anodized, colour TBC
7. Operational adjustment
 - 7.1. Variable power: Matched to the sizes and weights of doors.
 - 7.2. Latched doors: Override latches and/ or door seals when fitted.
 - 7.3. Unlatched doors: Hold shut under normal working conditions.
 - 7.4. Closing against smoke seals of fire doors: Positive. No gaps.
8. Compliance: Ironmongery included in successful tests to BS 476-22 or BS EN 1634-1 on door assemblies similar to those proposed.
9. Certification:: Submit evidence of successful testing by UKAS accredited laboratory
10. Melting point of components (except decorative non-functional parts):: 800deg min.

472 Performance specification for electromagnetic hold open devices **ADDED**

1. Description: To new glazed fire doors.
2. Standard: To BS EN 1155.
 - 2.1. Electromagnetic devices to fire/ smoke control doors: CE marked.
3. Type: Hold open, integral with closer
4. Minimum classification grades
 - 4.1. Category of use: 3 or 4 - to suit door closing angle
 - 4.2. Durability: 8
 - 4.3. Hold open power size: To suit door width and mass in accordance with BS EN 1155
 - 4.4. Suitability for use on fire/ smoke doors: 1.
 - 4.5. Safety: 1.
 - 4.6. Corrosion resistance: 2 or higher.
5. Material/ finish: Satin stainless steel
6. Means of release: Alarm system and/ or failure of power supply.
7. Test switch: Located in a convenient position adjacent to door.
8. Compliance:: Included in third party fire tests on fire door assemblies to BS 476-22. Submit certification.

9. Operational adjustment of integral closer
 - 9.1. Variable power: Matched to size, weight and location of doors.
 - 9.2. Latched doors: Override latches and/ or door seals when fitted.
 - 9.3. Unlatched doors: Hold shut under normal working conditions.

482 Performance specification for door coordinators **ADDED**

1. Description: As required to suit double doors.
2. Standard: To BS EN 1158.
 - 2.1. Door coordinators to fire/ smoke control doors: CE marked.
3. Minimum classification grades
 - 3.1. Category of use: 3.
 - 3.2. Durability: 8
 - 3.3. Door coordinator size: To suit size and mass of door leaf in accordance with BS EN 1158
 - 3.4. Suitability for use on fire/ smoke doors: 1
 - 3.5. Safety: 1.
 - 3.6. Corrosion resistance: 2 (min).
4. Material/ finish: Satin stainless steel
5. Application: To all single swing double doors with rebated meeting stiles and fitted with self closers.
6. Selection criteria: Provide types that:
 - 6.1. Require the minimum amount of material to be removed from the door and frame.
 - 6.2. Are suitable for the size of rebates.
 - 6.3. Compliance: Included in third party fire tests on fire door assemblies to BS 476-22. Submit certification

Door securing devices

525 Performance specification for door locks and latches **ADDED**

1. Description: Escape latch for fire escape routes
2. Standard: To BS EN 12209.
3. Minimum classification grades
 - 3.1. Category of use: 3
 - 3.2. Durability: W
 - 3.3. Door mass and closing force: To suit door mass
 - 3.4. Suitability for use on fire/ smoke doors: 1
 - 3.5. Safety: 0.
 - 3.6. Corrosion resistance and temperature: E
 - 3.7. Security and drill resistance: 4
 - 3.8. Field of door application: A B C to suit manual locking
 - 3.9. Type of key operation and locking: TBC.
 - 3.10. Type of spindle operation: To suit door handle.
 - 3.11. Key identification requirement: TBC
4. Backset: To suit door
5. Material/ finish: Stainless steel faceplate
6. Keying: In master keyed suite. All new locks to be individually keyed with master key for each building.

7. **Compliance::** Included in third party fire tests on fire door assemblies to BS 476-22. Submit certification

540 Door latches REVISED

1. **Description:** for existing doors
2. **Standard:** To BS EN 12209.
3. **Manufacturer:** Contractor's choice
 - 3.1. **Product reference:** Submit proposals
4. **Type:** to suit existing doors, as recommended by the ironmongery supplier and in accordance with fire certification for door leaf/frame.
5. **Backset:** to suit existing doors
6. **Material/ finish:** Stainless steel faceplate
7. **Latch spring strength:** Select to prevent unsprung lever handles drooping.
8. **Compliance:** Included in third party fire tests on fire door assemblies to BS 476-22. Submit certification

578 Performance specification for panic exit devices ADDED

1. **Description:** To escape route doors - refer to schedule.
2. **Standard:** To BS EN 1125.
 - 2.1. **Panic exit devices for locked doors on escape routes:** CE marked.
3. **Minimum classification grades**
 - 3.1. **Category of use:** 3.
 - 3.2. **Durability:** 7
 - 3.3. **Door mass:** To suit each door.
 - 3.4. **Suitability for use on fire/ smoke doors:** 1
 - 3.5. **Safety:** 1.
 - 3.6. **Corrosion resistance:** 4
 - 3.7. **Security:** 2.
 - 3.8. **Projection of bar:** 1
 - 3.9. **Type of bar operation:** A: Push bar operation
4. **Material/ finish:** Satin stainless steel
5. **Additional requirements:** TBC - allow for connection to security alarm.

586 Privacy indicator bolts ADDED

1. **Description:** to WCs - refer to schedule.
2. **Manufacturer:** Submit proposals
 - 2.1. **Product reference:** Submit proposals.
3. **Type:** Approved Document Part M compliant - Rotary, internal thumbturn integral with lever handle
4. **Material/ finish:** Satin stainless steel, grade 1.4401 (316)
5. **Emergency release facility:** Required.

Window securing devices - Not Used

Door furniture

620 Door knobs **REVISED**

1. Description: For Existing External Doors
2. Standard: To BS EN 1906.
3. Manufacturer: Contractor's choice
 - 3.1. Product reference: Submit proposals
4. Style: To be confirmed
5. Size: Submit proposals.
6. Material/ finish: Polished brass
7. Mounting: To suit location
8. Additional requirements:

622 Performance specification for lever handle sets **ADDED**

1. Description: As required - refer to schedule.
2. Standard: To BS EN 1906.
3. Minimum classification grades
 - 3.1. Category of use: 3
 - 3.2. Durability: 7
 - 3.3. Door mass: - (no classification).
 - 3.4. Fire resistance: A
 - 3.5. Safety: 1
 - 3.6. Corrosion resistance: 3
 - 3.7. Security: Submit proposals.
 - 3.8. Type of operation: Submit proposals.
4. Style: Round pattern with return to door
5. Size: Submit proposals.
6. Material/ finish: Satin stainless steel, grade 1.4301 (304)
7. Mounting: Submit proposals.
8. Additional requirements:

651 Performance specification for pull handles **ADDED**

1. Description: As required - refer to schedule.
2. Standard: To BS 8424.
3. Minimum classification grades
 - 3.1. Category of use: 4
 - 3.2. Durability: 2.
 - 3.3. Door mass: - (no classification).
 - 3.4. Suitability for use on fire/ smoke doors: 1
 - 3.5. Safety: 1.
 - 3.6. Corrosion resistance: 3
4. Shape: D handle Straight bar with stand-off spacers, Cranked, As schedule and to match existing.
5. Diameter: Submit proposals.

6. Distance between centres: Submit proposals.
7. Material/ finish: Satin stainless steel, grade 1.4301 (304)
8. Mounting: Submit proposals.
9. Additional requirements

670 Push plates REVISED

1. Description: For new and existing fire rated doors
2. Manufacturer: Contractor's choice
 - 2.1. Product reference: Submit proposals
3. Size: 325 x 75 mm
4. Material/ finish: Satin stainless steel, grade 1.4401 (316)
5. Mounting: Face fix
6. Additional requirements: Rounded edges and radiused corners Screw heads colour matched to plate

690 Kick plates REVISED

1. Description: for new and existing internal doors
2. Manufacturer: Contractor's choice
 - 2.1. Product reference: Submit proposals
3. Size: 700 x 225 mm
4. Material/ finish: Satin stainless steel, grade 1.4401 (316)
5. Mounting: Face fix
6. Additional requirements:

710 Escutcheons REVISED

1. Description: For new and existing doors
2. Manufacturer: Contractor's choice
 - 2.1. Product reference: Submit proposals
3. Material/ finish: Polished brass to external doors, Satin stainless steel, grade 1.4401 (316) to internal doors
4. Keyhole type: To suit specified lock.
5. Usage: To cylinder locks where no handle backplate is specified to be fitted

720 Door stops

1. Manufacturer: Contractor's choice
 - 1.1. Product reference: Submit proposals
2. Type: Floor mounted black rubber centre fixing
3. Usage: To doors opening against walls other than those fitted with closers with a back check facility

725 Door Door Signage

1. Manufacturer: Contractor's choice
 - 1.1. Product reference: Aluminium mandatory fire door sign
2. Type: screw fixed or self adhesive
3. Wording: Fire door keep shut or Fire door keep locked shut to store doors

850 Threshold weatherstrip **REVISED**

1. Description: For existing external doors
2. Manufacturer: Lorient or similar approved.
 - 2.1. Product reference: Submit proposals
3. Type: Neoprene wiping strip on door with low profile metal threshold
4. Size: To suit door
5. Material/ finish: Anodized aluminium, colour Bronze TBC

855 Weatherstrip to door head and jambs

1. Description: For existing external doors
2. Manufacturer: Contractor's choice
 - 2.1. Product reference: Submit proposals
3. Type: Elastomeric wiping strip in metal carrier
4. Size: To suit door
5. Material/ finish: Self finished

896 Door mounted fire resisting air transfer grilles **ADDED**

1. Manufacturer: Submit proposals
 - 1.1. Product reference: Submit proposals
2. Type: Intumescent
3. Size: As drawings/to match existing airflow rate.
4. Fire resistance: 60 minutes
5. Material/ finish: Carbon steel, hot-dipped galvanized and powder coated - colour to match door.

Window furniture - Not Used

Deleted clauses

120 Ironmongery range selected by Contractor For New Timber Doors **DELETED**

515 Door locks **DELETED**

Ω End of Section

U90 General ventilation

General - Not Used

System performance - Not Used

Products

380 Room extract grilles

1. Description:
2. Type:
3. Manufacturer:
 - 3.1. Product reference:
4. Size:
5. Colour:
6. Finish:
7. Accessories:

443 Dampers, fire and smoke

1. Description: Dampers for existing ducts
2. Standard: To BS EN 15650.
3. Manufacturer: BSB Engineering Services Limited
Unit 56, Trinity Trade Centre, Mill Way, Sittingbourne, Kent ME10 2PD, UK • Tel: +44 (0)1795 422609
email: enquiries@bsb-dampers.co.uk
 - 3.1. Product reference: FD Series
4. Sizes: To suit shape and sizes of existing ducts
5. Control: Connect to fire alarm system

Execution

660 Flexible ductwork

1. Installation: Fully extend without overstretching.
2. Support: Form smooth flowing curves without kinking, sagging or slumping.

670 Rigid ductwork generally

1. Joints: Seal. Provide a robust airtight installation.
2. Support: Do not distort ductwork or reduce cross-sectional area. Do not strain joints.
3. Falls: Fall away from fans, dampers and other in-line accessories.
4. Sleeves: Locate where ducts pass through building fabric. Bed solidly to the surrounding construction. Leave a gap of 10-20 mm between sleeve and duct and fill completely.
5. Fire-rated ductwork sleeves: Install in accordance with ASFP Blue book.

680 Installing condensate drains

1. Access: Provide for cleaning.
2. Outlet:

690 Site-applied insulation

1. Location: Fit insulation to ductwork in unheated spaces.
2. Installation: Fix securely. Leave no gaps. Make continuous.

Completion - Not Used

Ω End of Section

Z10

Purpose made joinery

To be read with preliminaries/ general conditions.

110 Fabrication

1. Standard: To BS 1186-2.
2. Sections: Accurate in profile and length, and free from twist and bowing. Formed out of solid unless shown otherwise.
 - 2.1. Machined surfaces: Smooth and free from tearing, wooliness, chip bruising and other machining defects.
3. Joints: Tight and close fitting.
4. Assembled components: Rigid. Free from distortion.
5. Screws: Provide pilot holes.
 - 5.1. Screws of 8 gauge (4 mm diameter) or more and screws into hardwood: Provide clearance holes.
 - 5.2. Countersink screws: Heads sunk at least 2 mm below surfaces visible in completed work.
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
 - 2.1. Softwood sections: To BS EN 1313-1:-
 - 2.1.1. Clause 6 for sawn sections.
 - 2.2. Hardwood sections: To BS EN 1313-2:-
 - 2.2.1. Clause 6 for sawn sections.
 - 2.2.2. Clause NA.3 for further processed sections.

130 Preservative treated wood

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.

210 Laminated plastics veneered boards/ panels

1. Fabrication: To British Laminated Plastics Fabricators Association Ltd (BLF) fabricating standards.
2. Balancing veneer: From decorative veneer manufacturer and of similar composition. Applied to reverse side of core material.
3. Finished components: Free from defects, including bow, twist, scratches, chipping, cracks, pimpling, indentations, glue marks, staining and variations in colour and pattern.
4. 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.
 - 3.1. 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.
 - 1.1. Arrises: Eased unless shown otherwise on drawings.
2. End grain in external components: Sealed with primer or sealer as section M60 and allowed to dry before assembly.

Ω End of Section

Z11

Purpose made metalwork

To be read with preliminaries/ general conditions.

310 Materials generally

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

320 Steel long and flat products

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

330 Steel plate, sheet and strip

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

340 Hot rolled steel plate, sheet and strip

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

350 Cold rolled steel plate, sheet and strip

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

360 Coated steel flat products

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

370 Steel structural hollow sections (SHS)

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

380 Other steel sections

1. Equal flange tees: To BS EN 10055.
2. Equal and unequal angles: To BS EN 10056-1 and -2.
3. Wire, carbon steel for general engineering purposes: To BS 1052.
4. Wire and wire products, general: To BS EN 10218-2.
5. Tubes
 - 5.1. Seamless circular: To BS EN 10297-1.
 - 5.2. Seamless cold drawn: To BS EN 10305-1.
 - 5.3. Welded and cold sized square and rectangular: To BS EN 10305-5.
 - 5.4. Welded circular: To BS EN 10296-1.
 - 5.5. Welded cold drawn: To BS EN 10305-2.
 - 5.6. Welded cold sized: To BS EN 10305-3.

400 Stainless steel products

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

410 Aluminium alloy products

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

420 Copper alloy products

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

Fabrication

515 Fabrication generally

1. Contact between dissimilar metals in components: Avoid.

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

520 Cold formed work

1. Profiles: Accurate, with straight arrises.

525 Adhesive bonding

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

527 Welding

1. Description:
2. Welding procedures
 - 2.1. Method and standard:
 - 2.2. Welding Procedure Specification (WPS):
3. Preparation
 - 3.1. Joint preparation: Clean thoroughly.
 - 3.2. Surfaces of materials that will be self-finished and visible in the completed work: protect from weld splatter.
4. Jointing
 - 4.1. Joints: Fully bond parent and filler metal throughout with no inclusions, holes, porosity or cracks.
 - 4.2. Dissimilar metals:
 - 4.3. Strength requirements: Welds to achieve design loads.
 - 4.4. Heat straightening:
 - 4.5. Complex assemblies: Agree priority for welding members to minimize distortion caused by subsequent welds.
 - 4.6. Tack welds: Use only for temporary attachment.
 - 4.7. Jigs: Provide to support and restrain members during welding.
 - 4.8. Filler plates:
 - 4.9. Lap joints: Minimum 5 x metal thickness or 25 mm, whichever is greater.
 - 4.10. Weld terminations: Clean and sound.

530 Stainless steel fabrication

1. Guillotining or punching: Do not use for metal thicknesses greater than 10 mm.
2. Thermal cutting
 - 2.1. Carbonation in the heat affected zone: Remove, after cutting.
3. Bending
 - 3.1. Plates or bars: Cold bending radius not less than material thickness.
 - 3.2. Tubes: Cold bending radius not less than 2 x tube diameter.
4. Welding: In addition to general welding requirements:
 - 4.1. Protect adjacent surfaces from weld spatter.

- 4.2. Pickle all welds before post fabrication treatments.
5. Protection: Provide protection to fabricated components during transit and on site.

555 Brazing

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

610 Testing

1. Description:
2. Testing standard:
3. Welding records and test results: Submit copies.

Finishing

710 Finishing welded and brazed joints visible in complete work

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

745 Preparation for application of coatings

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

750 Liquid organic coating for aluminium alloy components

1. Standard: To BS 4842.

760 Zinc and cadmium plating of iron and steel surfaces

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

770 Chromium plating

1. Standard: To BS EN ISO 1456.

780 Galvanizing

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

790 Vitreous enamelling

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

Completion

910 Documentation

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

920 Completion

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

Ω End of Section

Z20

Fixings and adhesives

Products

310 Fasteners generally

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

320 Packings

1. **Materials:** Noncompressible, corrosion proof.
2. **Area of packings:** Sufficient to transfer loads.

330 Nailed timber fasteners

1. **Nails**
 - 1.1. **Steel:** To BS 1202-1 or BS EN 10230-1.
 - 1.2. **Copper:** To BS EN 1202-2.
 - 1.3. **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**
 - 1.1. **Expansion:** For use in substrate strong enough to resist forces generated by expansion of anchor.
 - 1.2. **Adhesive or chemical**
 - 1.2.1. For use in substrate where expansion of anchor would fracture substrate.
 - 1.2.2. For use in irregular substrate where expansion anchors cannot transfer load on anchor.
 - 1.3. **Cavity:** For use where the anchor is retained by toggles of the plug locking onto the inside face of the cavity.

370 Wood screws

1. **Type**
 - 1.1. Wood screws (traditional pattern).
 - 1.1.1. **Standard:** To BS 1210.
 - 1.2. Wood screws.
 - 1.2.1. **Pattern:** Parallel, fully threaded shank or twin thread types.
2. **Washers and screw cups:** Where required are to be of same material as screw.

380 Miscellaneous screws

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

390 Adhesives

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

410 Powder actuated fixing systems

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

Execution

610 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 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
 - 1.1. Exposed: Flush with timber surface.
 - 1.2. 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.

680 Plugged countersunk screw fixing

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

690 Using powder actuated fixing systems

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 - Refer to stand alone Repair Specification Document

Cement gauged mortars - Not Used

Lime:sand mortars

310 Lime:sand mortar mixes

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

320 Sand for lime:sand masonry mortars

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

330 Ready prepared lime putty

1. Type: Slaked directly from CL 90 quicklime to BS 890, using an excess of water.
 - 1.1. Maturation: In pits/ containers that allow excess water to drain away.
 - 1.2. Density of matured lime putty: 1.3 - 1.4 kg/litre.
2. Maturation period before use (minimum): 3 months.

335 Ready prepared lime putty

1. Manufacturer:
 - 1.1. Product reference:
2. Maturation period before use (minimum):

340 Pozzolanic additives for nonhydraulic lime:sand mortars

1. Manufacturer/ Supplier:
 - 1.1. Product reference:
2. Mixing: Mix thoroughly into mortar during knocking up.

345 Admixtures for hydraulic lime:sand mortars

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

350 Storage of lime:sand mortar materials

1. Sands and aggregates: Keep different types/ grades in separate stockpiles on hard, clean, free-draining bases.
2. Ready prepared nonhydraulic lime putty: Prevent drying out and protect from frost.
3. Nonhydraulic lime:sand mortar: Store on clean bases or in clean containers that allow free drainage. Prevent drying out or wetting and protect from frost.
4. Bagged hydrated hydraulic lime: Store off the ground in dry conditions.

360 Making lime:sand mortars generally

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

370 Site prepared nonhydraulic lime:sand mortars

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

380 Ready to use nonhydraulic lime:sand mortars

1. **Manufacturer:**
 - 1.1. **Product reference:**
2. **Materials:** Select from:
 - 2.1. Lime putty slaked directly from quicklime to BS EN 459-1 and mixed thoroughly with sand.
 - 2.2. Quicklime to BS EN 459-1 slaked directly with sand.
3. **Maturation period before use (maximum):**

390 Knocking up nonhydraulic lime:sand mortars

1. **Knocking up before and during use:** Achieve and maintain a workable consistency by compressing, beating and chopping. Do not add water.
 - 1.1. **Equipment:** Roller pan mixer or submit proposals.

400 Making hydraulic lime:sand mortars

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

Ω End of Section

Z22 Sealants

Products

310 Joints

1. Description:
2. Primer, backing strip, bond breaker: Types recommended by sealant manufacturer.

Execution

610 Suitability of joints

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

620 Preparing joints

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

630 Applying sealants

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

Ω End of Section

Z31 Powder coatings

To be read with preliminaries/ general conditions.

120 Powder coating materials

1. Manufacturer: Obtain from one only of the following:
2. **Selected manufacturer:** Submit details before commencement of powder coating including:
 - 2.1. Name and contact details.
 - 2.2. Details of accreditation schemes.
 - 2.3. Technical data of product including current Agrément certificates.

210 Working procedures

1. Comply with the follow following standards.
 - 1.1. **Aluminium components:** To BS 6496 or BS EN 12206-1.
 - 1.2. **Steel components:** To BS EN 13438.
 - 1.3. **Safety standards:** To British Coatings Federation 'Code of safe practice: Powder coating. Application of coating powders by electrostatic spraying'.
 - 1.4. **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**
 - 1.1. Approved by powder coating manufacturer.
 - 1.2. Currently certified to BS EN ISO 9001.
 - 1.3. Comply with quality procedures, guarantee conditions, standards and tests required by powder coating manufacturer.
 - 1.4. **Selected applicator:** Submit details before commencement of powder coating including:
 - 1.4.1. Name and contact details.
 - 1.4.2. Details of accreditation schemes.

225 Guarantees

1. **Powder coating manufacturer and applicator guarantees**
 - 1.1. Submit sample copies before commencement of powder coating.
 - 1.2. 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:
 - 1.1. **Powder coated samples:** Of various grades and forms of background metal to be used, showing any colour, texture and gloss variation.
 - 1.2. **Fabrication samples:** Showing joint assembly, how powder coating is affected and how any cut metal edges are finished and protected.
 - 1.3. Where manual application is required, controlled samples should be coated and inspected for colour and gloss stability.
2. **Samples to include the following information**
 - 2.1. Product reference.
 - 2.2. Colour.

- 2.3. Reference number.
- 2.4. Name.
- 2.5. Gloss level.

235 Independent inspection at plant

- 1. **Requirement:** Contractors/ suppliers of the following designated components must commission an approved Independent Inspection Authority to carry out acceptance inspections to confirm that powder coating application complies with this specification.
 - 1.1. **Designated components:**
- 2. **Acceptance inspections:** Carry out for each variation of colour and finish of each component work package at applicator's plant prior to any fabrication of units, in accordance with the following:
 - 2.1. Where three or more production runs are required for application of coatings, not less than three acceptance inspections must be carried out in accordance with BS 6001-1, general inspection level 2, with an acceptance quality limit of 1%.
 - 2.2. Where less than three production runs are required for application of coatings, one acceptance inspection must be carried out in accordance with BS 6001-2, with a limiting quality of 5% where the probability of acceptance is 10%.
- 3. **Components failing inspection:** Reprocess or replace and reinspect.
- 4. **Inspection reports:** Independent Inspection Authority must submit copies.

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.
 - 1.1. **Designated components:**

250 Component design

- 1. **Condition of components to be powder coated**
 - 1.1. To comply with relevant recommendations of BS 4479-1, -3, and -4.
 - 1.2. Of suitable size to fit plant capacity.
 - 1.3. Of suitable thickness to withstand oven curing.

310 Pretreatment of aluminium components

- 1. **Condition of components to be pretreated**
 - 1.1. Free from corrosion and damage.
 - 1.2. All welding and jointing completed and finish off as specified.
 - 1.3. Free from impurities including soil, grease and oil.
 - 1.4. Suitable for and compatible with the pretreatment process.
- 2. **Conversion coating requirements**
 - 2.1. **Chromate system:** To BS 6496 or BS EN 12206-1.
 - 2.2. **Chromate-free system:** To BS EN 12206-1. Submit details before using.
- 3. **Rinsing requirements:** Use demineralized water. Drain and dry.

320 Pretreatment of steel components

- 1. **Condition of components to be pretreated**
 - 1.1. Free from corrosion and damage.
 - 1.2. All welding and jointing completed and finish off as specified.
 - 1.3. Free from impurities including soil, grease and oil.

- 1.4. Suitable for and compatible with the pretreatment process.
2. **Conversion coating requirements:** To BS EN 13438.
3. **Rinsing requirements:** Use demineralized water. Drain and dry.

330 Pretreatment for protection in aggressive environments

1. Minimum thickness of 60 microns across significant and/ or primary surfaces.
2. Minimum thickness of 25 microns on non-significant and/ or secondary faces ensuring a coherent film layer.
3. All cut edges, drilled holes and mitres to be fully sealed.
4. **Cleaning and maintenance:** Carried out once every three to twelve months (dependent on proximity to pollutant).

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**
 - 1.1. **Standard:** To BS 6496 or BS EN 12206-1.
2. **For steel components**
 - 2.1. **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**
 - 1.1. Before powder coating.
 - 1.2. From components powder coated after cutting to size.
 - 1.3. 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**
 - 2.1. Resistant to weather conditions.
 - 2.2. Partially removable to suit building in and access to fixing points.
3. **Protective tapes in contact with powder coatings must be**
 - 3.1. Low tack, self adhesive and light in colour.
 - 3.2. 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.

520 Protection in hazardous locations

1. Minimum thickness of 60 microns across significant and/ or primary surfaces.
2. Minimum thickness of 25 microns on non-significant and/ or secondary faces ensuring a coherent film layer.
3. All cut edges, drilled holes and mitres to be fully sealed.
4. **Cleaning:** Carried out once every three to twelve months (dependent on proximity to pollutant).

535 Documentation

1. **Submit the following information for each batch of powder coated components**
 - 1.1. Supplier.
 - 1.2. Trade name.
 - 1.3. Colour.
 - 1.4. Type of powder.
 - 1.5. Method of application.
 - 1.6. Batch and reference number.
 - 1.7. Statutory requirements.
 - 1.8. Test certificates.
 - 1.9. 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

Z33 Anodizing

To be read with preliminaries/ general conditions.

110 Anodic coating

1. Anodizer: Select one only of the following:
2. **Selected anodizer:** Submit details before commencement of anodizing, including:
 - 2.1. Name and contact details.
 - 2.2. Details of accreditation schemes.
 - 2.3. Technical data of product including current Agrément certificates.

210 Working procedures

1. **Standard:** To BS 3987 for anodic coatings on wrought aluminium.

220 Anodizer requirements

1. **Processing**
 - 1.1. **Approved:** By the Aluminium Finishing Association.
 - 1.2. **Certified:** To BS EN ISO 9001.
 - 1.3. **Anodizing plant:** Each anodizer to use only one plant.

230 Guarantees

1. **Anodizer guarantees:** Submit sample copies before commencement of anodizing.
2. **Project specific guarantees:** Submit signed copies on completion of work.
3. **Guarantees to cover**
 - 3.1. Life expectancy.
 - 3.2. **Colour:** Opacity and consistency.
 - 3.3. **Texture:** Gloss, satin or matt.
 - 3.4. Quality of coating.

240 Control samples

1. **Sequence:** Prior to ordering materials for the works, obtain approval of appearance for:
 - 1.1. **Anodic coated samples:** Showing colour and texture variation.
 - 1.2. **Fabrication samples:** Showing joint assembly, how anodic coating is affected and how cut metal edges are finished and protected.

250 Independent inspection at plant

1. **Requirement:** Contractors/ suppliers of the following designated components must commission an approved Independent Inspection Authority to carry out acceptance inspections to confirm that anodic coating application complies with this specification.
 - 1.1. **Designated components:**
2. **Acceptance inspections:** Carry out for each variation of colour and finish of each component work package at anodizer's plant prior to any fabrication of units, in accordance with the following:
 - 2.1. Where three or more production runs are required for application of coatings, not less than three acceptance inspections must be carried out in accordance with BS 6001-1, general inspection level 2, with an acceptance quality limit of 1%.

- 2.2. Where less than three production runs are required for application of coatings, one acceptance inspection must be carried out in accordance with BS 6001-2, with a limiting quality of 5% where the probability of acceptance is 10%.
3. Components failing inspection: Reprocess or replace and reinspect.
4. Inspection reports: Independent Inspection Authority must submit copies.

255 Quality assurance system

1. Requirement: Powder and coating application to the following designated components is to be tested and approved in accordance with the Qualanod system.
 - 1.1. Designated components:

270 Component design

1. Condition of components to be anodized
 - 1.1. To comply with relevant recommendations of BS 4479-1, and -5.
 - 1.2. Of suitable size to fit plant capacity.

310 Pretreatment

1. Condition of components to be anodized
 - 1.1. Free from corrosion and damage.
 - 1.2. Suitable for and compatible with the pretreatment and anodizing process.
2. Process: In accordance with the specification requirements for the finish.

410 Extent of anodic coatings

1. Application: To visible component surfaces, and concealed surfaces requiring protection. Coated surfaces will be deemed 'significant surfaces' for relevant BS 3987 performance requirements.

420 Application of anodic coatings

1. Surfaces to receive anodic coatings: Clean.
2. Commencement of anodic coating: To be continuous from pretreatment.
3. Jig points: To be agreed. Not on visible areas of anodic coated components.
4. Use of touch-up paint: Not acceptable.

430 Performance and appearance of anodic coatings

1. Standard: To BS 3987.
2. Visual inspection after anodizing: Significant surfaces to be free from visible coating/ defects when viewed from a distance of not less than 5 m for external and 3 m for internal applications.

440 Fabrication

1. Units may be assembled
 - 1.1. Before anodizing, providing sufficient drainage holes are included in components to fully drain components.
 - 1.2. From components anodized after cutting to size.
 - 1.3. Where approved, from components anodized before cutting to size.
 - 1.4. Exposure of uncoated background metal: Not acceptable.
 - 1.5. Assembly sealants: Compatible with anodic coatings. Obtain approval of colour if sealants are visible after fabrication.

450 Damaged components – repair/ replacement

1. **Before delivery to site:** Check all components for damage to anodic coatings. Replace damaged components.
2. **Site damage:** Submit proposals for repair or replacement.

510 Protection

1. **Anodic coated surfaces of components:** Protect from damage during handling and installation, or by subsequent site operations.
2. **Protective coverings:** Must be:
 - 2.1. Resistant to weather conditions.
 - 2.2. Partially removable to suit building in and access to fixing points.
3. **Protective tapes in contact with anodizing to be**
 - 3.1. Low tack, self adhesive and light in colour.
 - 3.2. Applied and removed in accordance with tape and anodizers recommendations.
4. **Inspection of protection:** Carry out weekly. Promptly repair any deterioration or deficiency.

530 Documentation

1. **Submit the following information for each batch of anodic coated components**
 - 1.1. Supplier.
 - 1.2. Trade name.
 - 1.3. Colour (if required).
 - 1.4. Batch and reference number.
 - 1.5. Statutory requirements.

540 Completion

1. **Protection:** Remove.
2. **Cleaning and maintenance of anodic coatings:** Carry out in accordance with procedures detailed in anodizer's guarantees.

Ω End of Section



Specification created using NBS Chorus