
23746 / Riverdale Maisonettes

Glazing and Curtain Walling

23746-Glazing and Curtain Walling-2024-07-11

Revision	Date	Notes
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H11

Curtain walling

Tendering

10 Information to be provided with tender

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

Types of curtain walling

110A Stick curtain walling systems

1. Curtain walling system
 - 1.1. Manufacturer: Senior Architectural Systems Ltd
 - 1.1.1. Contact details
 - 1.1.1.1. Address: Eland Road
Denaby Main
Doncaster
South Yorkshire
DN12 4HA
 - 1.1.1.2. Telephone: +44 (0)1709 772600
 - 1.1.1.3. Web: www.seniorarchitectural.co.uk
 - 1.1.1.4. Email: info@sasmail.co.uk
 - 1.1.2. Product reference: SF52 Vertical Capped Curtain Wall System
 - 1.2. Framing
 - 1.2.1. Frame members: as specialist design
 - 1.2.2. Frame accessories: None
 - 1.2.3. Fasteners: Manufacturer's standard
 - 1.3. Cladding units

- 1.3.1. Glass units: Insulated glass units (IGUs).
- 1.3.2. Glazing accessories: None
- 1.3.3. Fasteners: Manufacturer's standard
- 1.3.4. Perimeter seals: Integral compression fittings
- 1.4. System accessories: Aluminium/ co extruded plastic pressure plate, fixed to mullions and transoms at a maximum of 25 mm from ends and at a maximum of 150 centres.
- 1.5. Finish: Polyester powder coated, Colour to be agreed
- 1.6. Vertical: Consult manufacturer

General requirements/ preparatory work

210 Design

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

215 Design proposals

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

220 Specification

- 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

- 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

- 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.

235 Information to be provided before commencement testing or fabrication of curtain walling

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

250 Product samples

- 1. General: Before commencing detailed design, submit labelled samples of: Curtain wall section .

260 Samples of fixings

- 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'

- 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.

311 Integrity

- 1. Requirement: The curtain walling must resist wind loads, dead loads and design live loads, and accommodate deflections and movements without damage.
- 2. Design wind pressure: 2400Pa
- 3. Impact performance: Generally
 - 3.1. Safety impact requirements: 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: to all ground floor new curtain wall areas - category A.
 - 3.4. Hard and soft body impact loads - curtain walling to BS EN 14019: Class E5; Class I5

- 3.5. Hard and soft body impact loads - glass to BS EN 12600: 1 (C) 1
- 3.6. Hard body impact tests - In accordance with CWCT 'Standard test methods for building envelopes' and TN 76 (curtain wall).
- 3.7. Soft body impact tests: In accordance with CWCT Standard test methods for building envelopes and TN 76 (curtain wall)
- 4. Permanent imposed loads: Brise Soleil
- 5. Temporary imposed loads: None

320 Deflection under dead loads

- 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

- 1. Requirement: To CWCT 'Standard for systemised building envelopes' clause 3.5 2 and the following additional requirements: None.
- 2. Additional stiffness to CWCT 'Standard for systemised building envelopes' clause 3.5 4.2: Not allowed

332 Appearance and fit

- 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 installation contractor's pre-installation measurement
- 3. Curtain wall envelope zone tolerances
 - 3.1. Width: As existing
 - 3.1.1. Critical reference location: To be agreed
- 4. Maximum permitted component and installation tolerances: Panel tolerance ± 2 mm, installation tolerance ± 2 mm, overall = ± 4 mm

340 Air permeability

- 1. Requirement: Permissible air leakage rates of $1.5 \text{ m}^3/\text{hr}/\text{m}^2$ for fixed lights and $2.0 \text{ m}^3/\text{hr}/\text{lin.m}$ for opening lights must not be exceeded when the curtain walling is subjected to the peak test pressure.
- 2. Permeability class to BS EN 12152: A4
 - 2.1. Peak test pressure: 600 Pa

345 Air permeability exfiltration

- 1. Requirement: The maximum permissible air exfiltration rate through the curtain walling system must not exceed: All external walls: $4 \text{ m}^3/(\text{h.m}^2)$ at a test pressure of 50 Pa.

350 Water penetration

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

370 Thermal properties

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: 1.1W/m²K
3. Curtain wall zone interfaces: Co-ordinate to achieve required average U-value.
4. Method for assessing thermal transmittance (U-value) of assemblies: Method 1 - approximate method in accordance with CAB/CWCT publication 'The thermal assessment of window assemblies, curtain walling and non-traditional building envelopes'

385 Thermal stress in glazing

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

390 Avoidance of condensation

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: 20°C
 - 1.2.2. Relative humidity: 50%
 - 1.2.3. Vapour pressure: 0.93 kPa

426 Reaction to fire of curtain walling

1. Standard: To BS EN 13501-1.
 - 1.1. Class: B-s3, d2 or better

430 Fire stopping

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

440 Durability

1. Relevant agents or degradation mechanisms: Inner city environment
2. Design life of the curtain walling system: Not less than 30 years
3. Secondary components: Submit details together with required maintenance regime, replacement periods and methods of replacement.

445 Lightning protection system

1. Curtain wall components used as part of lightning protection system: None

450 Safety

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.

Breeam performance requirements - Not Used

Testing

510 Comparison (type) testing

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

530 Testing authority

1. Requirement: Project testing must be carried out by a United Kingdom Accreditation Service (UKAS) approved independent laboratory.

635 Site hose test

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: To be selected

Products

710 Aluminium alloy framing sections

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

715 Carbon steel framing sections/ Reinforcement

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.

730 Mechanical fixings

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

732 Adhesives

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

735 Fixing anchors

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

737 Glass generally

1. Standards: To BS 952 and relevant parts of:
 - 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

1. Description: Generally
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

1. Description: Generally
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

1. Standard: To BS EN 14179.
 - 1.1. Holding period: 2 hours
2. Locations of heat-soaked glass: South and west facing glazing

745 Insulating glass units

1. Standard and labels for hermetically sealed units: To BS EN 1279.

2. Label: Each pane.
3. Colour of aluminium perimeter spacers: Natural
4. Perimeter taping: Not to be used.
5. Perimeter seals
 - 5.1. Resistant to UV light degradation on exposed edges.
 - 5.2. Compatible with structural, assembly and weather sealants.

760 Gaskets

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

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

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: [Submit proposals](#)

Finishes

810 Protective coating of carbon steel framing sections/ Reinforcement

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

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.

830 Powder-coating

1. Requirement: As section Z31.

Fabrication and installation

910 Generally

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

912 Metalwork

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

915 Glazing

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

917 Fixings/ Adhesives application

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

920 Sealant application

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

930 Assembly

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

955 Fixing anchor installation

1. Site drilling or cutting into structure: Submit proposals for positions other than shown on detailed drawings.
2. Concrete supporting structure
 - 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

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

975 Welding

1. In situ welding: Not permitted.

978 Installing fire and smoke stops

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

980 Interfaces

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

982 Ironmongery

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

985 Maintenance

1. Maintenance manual: Incorporate details within the Building Manual in accordance with CWCT 'Standard for systemised building envelopes' clause 7.6.1.
 - 1.1. Materials certification and test reports to be included:
 - Contact details for subcontractors and suppliers.
 - Design criteria for the curtain wall system.
 - Product information for components and materials including manufacturers' literature, COSHH data sheets and recommendations for cleaning maintenance and repair.
 - Copies of material, components and finishes certification and test report.
 - A full set of construction drawings, updated to include any changes made up to the time of completion.
 - The terms and conditions of any guarantee.
 - Method statement for means of access for maintenance and for use of any permanent equipment.
 - Method statement covering the procedures for replacement of parts that have a design life less than the design life of the curtain wall system.
 - Recommendations for routine maintenance and cleaning, including suitable cleaning agents and lubrication/ adjustments to working parts.
 - Record book for listing defects, maintenance and repairs.

Ω End of Section

L10**Windows/ rooflights/ screens/ louvres** **REVISED****General****110 Evidence of performance**

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

120 Pre-construction survey

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

Products**330A Aluminium window units** **REVISED**

1. Standard: Non-fire and/ or smoke-rated windows to BS EN 14351-1 and BS 4873
2. Manufacturer: [Submit proposals](#)
 - 2.1. Product reference: [Submit proposals](#)
3. Dimensions and configurations: As noted on drawn schedules
4. Product performance
 - 4.1. Weather performance
 - 4.1.1. Air permeability: To BS 6375-1, Class 4.
 - 4.1.2. Watertightness: AE2400.
 - 4.1.3. Resistance to wind load: 2000+.
 - 4.2. Safety
 - 4.2.1. Security level: To PAS 24.
 - 4.3. Thermal
 - 4.3.1. Whole window U-value: 1.4 W/m²K or better
 - 4.3.2. British Fenestration Rating Council Window Energy Rating: Band A.
5. Frame
 - 5.1. Profile: Chamfered.
6. Glazing or infill
 - 6.1. Requirements: 28 mm.
7. Operation
 - 7.1. Type: Manual.

650 Metal louvres **ADDED**

1. Manufacturer: [Submit proposals](#)
 - 1.1. Product reference: [Submit proposals](#)
2. Material: Aluminium
 - 2.1. Finish as delivered: Powder-coated
3. Fire performance: Not applicable

4. Number of louvre banks: One
5. Louvre blade pitch and angle: Pitch: 75 mm
6. Blanking panels: Not required
7. Accessories/ other requirements: None
8. Fixing: To standard support framework on galvanised steel backing frame to detail by Structural Engineer

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: Dissimilar metals
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.

760 Replacement window installation

1. Standard: In accordance with BS 8213-4.

765 Window installation generally

1. Installation: Into prepared openings.
2. Gap between frame edge and surrounding construction
 - 2.1. Minimum: 4mm
 - 2.2. Maximum: 10mm
3. Distortion: Install windows without twist or diagonal racking.

770 Damp-proof courses in prepared openings

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

782 Fixing of aluminium frames

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

810 Sealant joints

1. Sealant

1.1. Manufacturer: [Submit proposals](#)

1.1.1. Product reference: [Submit proposals](#)

1.2. Colour: White/Light grey

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

820 Ironmongery

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

Ω End of Section

L20

Doors/ shutters/ hatches

General

110 Evidence of performance

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

150 Site dimensions

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

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: To be agreed

Products

480A Aluminium doorsets

1. Manufacturer: or equivalent alternative subject to written agreement
 - 1.1. Contact details
 - 1.1.1.Address: Duration Windows,
Thames Development,
Charfleets Road,
Canvey Island,
Essex
SS8 0PQ
 - 1.1.2.Telephone: 01268 681612
 - 1.1.3.Web: <https://duration.co.uk>
 - 1.1.4.Email: sales@duration.co.uk
 - 1.2. Product reference: Luxury Plus Doors
2. Configuration: as noted on plans and drawn schedules
3. Doorset size: as existing door openings
4. Performance
 - 4.1. Thermal: 1.4 W/m²K.
 - 4.2. Intruder resistance
 - 4.2.1.Minimum requirement: To PAS 24.
5. Frame
 - 5.1. Material: Aluminium.
6. Door leaf
 - 6.1. Glazing

6.1.1.Type: 28 mm.

6.2. Beading

6.2.1.Type: Internal

7. Profile: Chamfered.
8. Air permeability: To BS 6375-1, Class 4 (600 Pa).
9. Watertightness: Class 4 600 Pa.
10. Resistance to wind load: Class C3 1200Pa.

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: dissimilar metals
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.

780 Damp-proof courses in prepared openings

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

800 Fixing of loose thresholds

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

820 Sealant joints

1. Sealant
 - 1.1. Manufacturer: [Submit proposals](#)
 - 1.1.1.Product reference: Submit proposals
 - 1.2. Colour: White/Light grey
 - 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.

Ω End of Section

L40

General glazing

General requirements

110 Pre-glazing

1. Pre-glazing of components: Not permitted.

140 Material samples

1. Representative samples of designated materials: Submit before assembling remainder of units.
 - 1.1. Sample size (minimum): 600 x 300 mm
 - 1.2. Designated materials: 28mm IGU as clause 650, 651, 652

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.

152 Preparation

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

155 Glass generally

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

160 Linear patterned/ wired glass

1. Alignment: Vertical/ horizontal as appropriate, and pattern-matched across adjacent panes in close proximity.

165 Heat-soaking of thermally toughened glass

1. Standard: To BS EN 14179-1 and BS EN 14179-2.
 - 1.1. Holding period (minimum): Two hours.
2. Certified evidence of treatment: Submit.
3. Designated locations: Glazing in south and west facing staircase curtain walling

Types of glazing

370 Bead-fixed insulating glass units – insert gasket sections

1. Description: Aluminium framed windows and doors
2. IGU: As clause 650.
 - 2.1. Perimeter taping: As manufacturer's standard details
3. Surround/ bead: Aluminium
 - 3.1. Preparation: Polyester powder coated
 - 3.2. Bead location: Inside
 - 3.3. Bead-fixing: Proprietary clip-fixing
4. Glazing system: Preformed gasket sections supplied by window manufacturer
5. Thermal performance (U-value maximum): Manufacturer's standard
6. Glazing installation
 - 6.1. Insulating unit: Located centrally in surround using setting and location blocks.
 - 6.2. Gaskets and beads: Installed as recommended by frame manufacturer.
 - 6.2.1. Gasket fit at corners: Tight, without gaps.
 - 6.3. Drainage and ventilation holes: Unobstructed.

610 Window film

1. Description: To bathroom windows, in lieu of patterned glass, where required
2. Type: Privacy
3. Manufacturer: [Submit proposals](#)
 - 3.1. Product reference: Submit proposals
4. Colour: White
5. Application: Carried out by a firm approved by the film manufacturer in accordance with manufacturer's recommendations.
 - 5.1. Evidence of applicator's competence and experience: Submit on request.
 - 5.2. Sample area: Complete as part of the finished work, in an approved location and obtain approval of appearance before proceeding.
 - 5.3. Ambient air temperature at time of application: Above 5°C.
6. Installed film: Fully adhered to the glass with no peeling, and free from bubbles, wrinkles, cracks or tears.
7. Further contact with applied films: Avoid until bonding adhesive has cured.
8. Cleaning and maintenance instructions: Submit copies.

650 Insulated glass units (IGUs) – performance

1. Description: To windows other than as noted in clauses below
2. Type: Double-pane
3. Standard: To BS EN 1279-5.
4. Performance characteristics to BS EN 1279-5
 - 4.1. Safety in use

4.1.1.Burglar resistance: PAS24

4.1.2.Pendulum body impact resistance: To comply with the requirements of Building Regulations Part K for safety glass

4.1.3.Resistance against sudden temperature changes and temperature differentials: as clause 165

4.1.4.Resistance against wind, snow, permanent load and/ or imposed loads: as noted in worksection L10

4.2. Energy

4.2.1.Thermal properties: as woksection L10

5. Unit thickness: 28mm

6. Location of relevant glass panes: 6mm clear glass outer pane (safety glass where determined by Part K of the current Building Regulations)
16mm spacer

6mm clear glass inner pane with low-emissivity coating to face 3 (safety glass where determined by Part K of the current Building Regulations)

7. Spacer: 16mm, 90% Argon filled cavity, Black Warm Edge

8. Other requirements: None

651 Insulated glass units (IGUs) – performance

1. Description: To bathroom windows

2. Type: Double-pane

3. Standard: To BS EN 1279-5.

4. Performance characteristics to BS EN 1279-5

4.1. Safety in use

4.1.1.Burglar resistance: PAS24

4.1.2.Pendulum body impact resistance: To comply with the requirements of Building Regulations Part K for safety glass

4.1.3.Resistance against sudden temperature changes and temperature differentials: as clause 165

4.1.4.Resistance against wind, snow, permanent load and/ or imposed loads: as noted in worksection L10

4.2. Energy

4.2.1.Thermal properties: as woksection L10

5. Unit thickness: 28mm

6. Location of relevant glass panes: 6mm clear glass outer pane (safety glass where determined by Part K of the current Building Regulations)
16mm spacer

6mm patterned glass inner pane with low-emissivity coating to face 3 (safety glass where determined by Part K of the current Building Regulations)

7. Spacer: 16mm, 90% Argon filled cavity, Black Warm Edge

8. Other requirements: None

652 Insulated glass units (IGUs) – performance

1. Description: To kitchen windows facing onto common access balconies

2. Type: Double-pane

3. Standard: To BS EN 1279-5.

4. Performance characteristics to BS EN 1279-5

4.1. Fire performance

4.1.1.Fire resistance: REI30

4.2. Safety in use

4.2.1.Burglar resistance: PAS24

4.2.2.Pendulum body impact resistance: To comply with the requirements of Building Regulations Part K for safety glass

4.2.3.Resistance against sudden temperature changes and temperature differentials: as clause 165

4.2.4.Resistance against wind, snow, permanent load and/ or imposed loads: as noted in worksection L10

4.3. Energy

4.3.1.Thermal properties: as woksection L10

5. Unit thickness: 28mm

6. Location of relevant glass panes: 6mm clear glass outer pane (safety glass where determined by Part K of the current Building Regulations)

16mm spacer

6mm REI30 fire resistant clear glass inner pane with low-emissivity coating to face 3 (safety glass where determined by Part K of the current Building Regulations)

7. Spacer: 16mm, 90% Argon filled cavity, Black Warm Edge

8. Other requirements: None

895 Verification on completion

1. Requirement: Proof of compliance with all specified requirements

2. Method: Third party compliance certification

3. Submittals: All

3.1. Format: Project specific drawings and specifications, manufacturer's literature

3.2. Timing: At completion of manufacture.

Ω End of Section

Z22

Sealants

Products

310 Joints

1. Description: Between glazing frame and new cladding
2. Manufacturer: [Submit proposals](#)
 - 2.1. Product reference: Submit proposals
3. Primer, backing strip, bond breaker: Types recommended by sealant manufacturer.
4. Fire performance
 - 4.1. Fire resistance: Not required
 - 4.2. Reaction to fire: Not required

Execution

610 Suitability of joints

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

620 Preparing joints

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

630 Applying sealants

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

Ω End of Section

Z31

Powder coatings

To be read with preliminaries/ general conditions.

120 Powder coatings Type A

1. Manufacturer: Sherwin-Williams General Industrial or equivalent alternative subject to written agreement
 - 1.1. Contact details
 - 1.1.1. Address: Goodlass Road
Speke
Liverpool
United Kingdom
L24 9HJ
 - 1.1.2. Telephone: 07584114851
 - 1.1.3. Web: industrial.sherwin-williams.com/emeai/gb/en/general-industrial/architects.html
 - 1.1.4. Email: Sharon.e.jones@sherwin.com
 - 1.2. Product reference: Syntha Pulvin. Colour to be advised
2. Environmental performance requirements: Manufacturer's standard
 - 2.1. Environmental ratings: Manufacturer's standard
 - 2.2. Volatile organic compounds (VOC) emissions level (maximum): Manufacturer's standard

210 Working procedures

1. Comply with the following standards
 - 1.1. Aluminium components: BS EN 12206-1.
 - 1.2. Steel components: To BS EN 13438.
 - 1.3. Safety standards: British Coatings Federation publication Code of safe practice: Powder coating. Application of coating powders by electrostatic spraying.
 - 1.4. Health and safety guidance: Health and Safety Executive publication Reducing risk associated with using coating powders - employers.

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:
 - Name and contact details.
 - 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. 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:
 - Product reference.
 - Colour.
 - Reference number.
 - Name.
 - Gloss level.

250 Component design

1. Condition of components to be powder coated
 - 1.1. To comply with relevant recommendations of BS 4479-1, BS 4479-3 and BS 4479-4
 - 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: 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.

330 Pretreatment for protection in aggressive environments

1. Minimum thickness of 60 micrometres across significant and/ or primary surfaces
2. All cut edges, drilled holes and mitres to be fully sealed
3. Cleaning and maintenance: Carried out once every three to 12 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 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: BS EN 12206-1
2. Visual inspection after powder coating: Significant surface viewing distances to be as specified in the relevant Standard, unless specified otherwise.
3. 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.

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 micrometres across significant and/ or primary surfaces
2. All cut edges, drilled holes and mitres to be fully sealed
3. 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

Corstorphine & Wright



Contact us to discuss your project

 www.corstorphine-wright.com

 contact@cw-architects.co.uk

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