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Architon

MRC Harwell – B'383 Envelope Upgrade

Architectural NBS Specification

Windows, Doors & Curtain Walling

Architon LLP Ref: 3386
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Site Address: MRC Harwell, Becquerel Avenue, Didcot, OX11 0RD
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DOCUMENT CONTROL AND ISSUE

Revision	Date	Description
P01	6th February 2025	For approval
P02	14th May 2025	Glazing and door specification updated
P03	31st July 2025	L10/330 updated; Sections H11 & L20 doors omitted.
P04	8th September 2025	Curtain walling and doors sections added
P05	17th September 2025	Electronic door locking updated. Drawing References updated. Notes added / updated.

This document is for Curtain Walling, Doors and Window Specification only.

DRAWINGS

This specification is to be read in conjunction with the following drawings:

001496-ALP-09-01-DR-A-4001 Window and door locations Level 1
001496-ALP-09-02-DR-A-4002 Window and door locations Level 2
001496-ALP-09-03-DR-A-4003 Window and door locations Level 3
001496-ALP-09-04-DR-A-4004 Window and door locations Level 4
001496-ALP-09-ZZ-DR-A-1701 Elevations as Existing 1 of 2
001496-ALP-09-ZZ-DR-A-1702 Elevations as Existing 2 of 2
001496-ALP-09-ZZ-DR-A-5001 Window-Door-Curtain Wall Schedules
001496-ALP-09-01-DR-A-8001 Typical window opening details GF
001496-ALP-09-02-DR-A-8002 Typical window opening details FF
001496-ALP-09-ZZ-DR-A-8007 Proposed Window Types
001496-ALP-09-ZZ-DR-A-8008 Proposed Door Types

Socotec Fire Report for TX 164566

H11 CURTAIN WALLING - FIRE RATED FR30 & NON FIRE RATED

10 Information to be provided with tender

Submit the following curtain walling particulars

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 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).*

Contractor/designer to provide plans, sections and elevation drawings at suitable scales showing all typical and non-typical details including existing / proposed building fabric, installation, fixing and sealing methods, for all window/door and curtain wall installations.

Typical and specific detailed drawings at large scales: *Technical information and certification demonstrating compliance with specification of proposed incorporated products and finishes.*

Certification, reports and calculations demonstrating compliance with specification of proposed curtain walling and system fire rating.

Proposals for connections to and support from the building structure and building components.

Proposals for amendments to primary supporting structure and for secondary supporting structure additional to that shown on preliminary design drawings.

Schedule of builder's work, special provisions and special attendance by others.

Examples of standard documentation from which the project quality plan will be prepared.

Preliminary fabrication and installation method statements and programme.

Schedule of products and finishes with a design life expectancy if less than that specified in clause 440, with proposals for frequencies and methods of replacement.

Proposals for replacing damaged or failed products.

Areas of non-compliance with the specification.

Details of the Fabricators and Installers – to be on the Schueco supplied recommended list for this project.

11 Fabricator and Installer

The Fabricator and Installer are to be on the Schueco recommended list for this project; those not recommended for this project by Schueco will not be allowed to carry out the works. Details of the Fabricator and Installer are to be advised at the time of tender and at any subsequent time if there is a change.

12 Coordination with others

The contractor/ installer is to coordinate all others including those carrying out works for the Access Control System, Builders Works. Allowance is to be made in the design and outer framing for min. 50mm external wall insulation returns and the 190mm external wall main face rendered insulation.

Allowance is to be made for all programming, detailed design coordination etc.

Types of curtain walling

15 Installation Design

The manufacturer/ fabricator is to determine the combination of elements from sections H11, L10 and L20 to achieve the configurations of curtain wall, windows (fixed and openable) and doors shown on the drawings.

Therefore, sections H11, L10 and L20 are to be read together.

The manufacturer/ fabricator is to include any necessary special fixings, couplers, connection pieces between differing elements to achieve the configurations of curtain walling, windows and doors shown on the drawings such as doors with glazed side/ over panels, curtain walling with doors, coupled runs of windows which could be done as curtain walling etc.

The selection of the different elements by the manufacturer/ fabricator is clearly to be identified during tendering and confirmed in their tender return.

This section is also to coordinate with the future new rendered External Wall Insulation system to B383. All frames are to make allowance for, and to accommodate, a min 50mm rendered and insulated reveal returning to them.

Fabricator to provide individual u-value calculations for each section of curtain walling / type (Uw).

All curtain walling glazing to be toughened where required under Building Regulations.

90 Glazing Thermal Safety Check

Procedure: *At the time of tendering the fabricator/ installer is to carry out Glazing Thermal Safety checks.*

These are to be assessed using the "Pilkington Technical Advisory Service Check List for Thermal Safety Calculations for Pilkington Single or Multiple Glazing Subjected to Solar Radiation." Completed copies are to be included in the tender return.

Designated items: *All items in this specification section & schedule 001496-ALP-09-XX-SH-A-0002 for:*

- *Each window size*
- *Each glazing combination/ type*
- *Each elevation*

Timing: *Before submission of cost/ tender. Any divergence from this specification, and any necessary consequential changes resulting from the Glazing Safety Check, are to be advised, agreed and costs included, before both acceptance of tender and appointment of the fabricator/ installer. Post appointment changes resulting from Glazing Thermal Safety checks will not be accepted financially.*

110 Stick curtain walling systems Fire Rated FR30

Curtain walling system

Manufacturer: *Schueco UK Ltd*

Contact details :

Address: *Whitehall Avenue*
Kingston
Milton Keynes
Buckinghamshire
MK10 0AL

Telephone: *+44 (0)1908 282111*

Web: *www.schueco.co.uk*

Email: *mkinfobox@schueco.com*

Product reference: *Fire-resistant stick curtain walling façade system - FW 50+ BF*

(30 minutes fire-resistant) thermally broken curtain walling system.

Type: *Stick system Pressure equalized Mullion drained. Three level drainage system.*

System performance: *Fire performance to BS EN 13501: F30; G30; EI30; EW30.*

System tested in full accordance with European fire rating standard BS EN1364-3 curtain walling full configuration test.

Schueco approved (S.A.F.E) certification complete with Schueco company approved certificate.

Air permeability: *To EN 12152, Class AE.*

Watertightness: *To EN 12154, Class RE 1200.*

Resistance to wind load: *To EN 12179, 1.2 kN/m².*

Impact resistance: *To EN 14019, I5/ E5.*

Standards: *To DIN 4102; EN 1364; EN 13501-2; DIN EN 13830.*

Label: *Schueco 'IoF' ID tag with QR code.*

Internal framing member

Material: *Aluminium as clause 710.*

Standard: *Standard PPC minimum 40-70 Microns depending upon project requirement as Z31 Powder Coatings.*

Finish: *Powder-coating as section Z31.*

Colour/ texture: *Polyester powder coated; Internal RAL 7031 matt (30%gloss) – Blue Grey.*

External cover cap

External mullion cover cap: *Schueco 20mm reference 110 840 cover cap profile.*

External transom cover cap: *Schueco 15mm reference 112 720 cover cap profile.*

Material: *Aluminium as clause 710.*

Finish: *Powder-coating as section Z31.*

Colour/ texture: *Polyester powder coated; External RAL 7031 matt (30%gloss) - Blue Grey (to match future darker grey Permarock render colour).*

Glazing: *Insulating glass units;*

- *Double glazed;*
- *Generally clear. Opaque where shown on curtain walling elevation.*
- *Pilkington Suncool 70/35; 20mm warm edge spacer; Pilkington Pyrostop® 30-36 – EI30 performance (6-20-18 min).*

Centre pane 'U' Value: Min *1 W/(m²K) Ug.*

Glazing system: *Gaskets as clause 760.*
System to be stainless steel pressure plate reference 202 764.

Panel/ facing type: *At low level for Type N units only - Composite infill panels, external cover plate fixed (see drawings)*

External material: *Aluminium sheet*

External finish: *Polyester powder coated; External RAL 7031 matt (30%gloss) - Blue Grey (to match darker grey Permarock render colour).*

Internal material: *Aluminium sheet*

Internal finish: *Polyester powder coated; Internal RAL 7031 matt (30%gloss) – Blue Grey*

Core insulation: *Mineral wool board to BS EN 13162, approx +100mm thick (TBC by window manufacturer).*

Centre pane 'U' Value : *Minimum to achieve a Ug value of 1.0 W/(m²K) at centre.*

Accessories:

Schueco bracket attachment reference 238 257.

Schueco internal wall attachment profile reference 327 040 complete with glazing clip reference 228 650.

Schueco EPDM reference 150mm 224 154.

Matching cills & brackets.

Air tight EPDM sheet seals to all sides between curtain wall frame and existing masonry/ concrete abutment of reveals.

Perimeter framing to allow sufficient face width for minimum 50mm new external wall insulation returns (i.e. a wide outer frame or an additional knock on frame to the curtain walling perimeter).

Incorporated components:

Powder coated aluminium sill flashing to base of curtain walling.

Powder coated aluminium flashing to sides and head of curtain walling system.

Internal powder coated cover flashings to perimeter of curtain walling and abutments with building fabric.

Other requirements:

All fixing and sealing of the Schueco fire rated systems to be completed in full accordance with Schueco installation documentation using correct fixings and sealants.

The Schueco aluminium fire resistant curtain walling systems shall be fabricated and installed, in complete accordance with the information published by Schueco, exclusively by approved Schueco (S.A.F.E) fabricators that are fully trained in Schueco Fire Products. Approved fabricator/installer to issue project S.A.F.E certificate on completion.

Intermediate horizontal structural support beam at approximately the mid point of vertical span to split loading where required e.g. courtyard staircase windows, with structural fixing back to existing to design by fabricator/ installer.

Secret "U" shaped brackets fixed to new horizontal support steel for attaching/supporting curtain walling mullions. Fire rated jamb and head infill details, for perimeter of curtain walling to allow for future 50mm EWI returns and allow removal of outer framing pressure caps for glass replacement.

111 **Stick curtain walling systems Non Fire Rated**

Curtain walling system

Manufacturer: *Schueco UK Ltd*

Contact details

Address: *Whitehall Avenue*
Kingston
Milton Keynes
Buckinghamshire
MK10 0AL

Telephone: *+44 (0)1908 282111*

Web: *www.schueco.co.uk*

Email: *mkinfobox@schueco.com*
Product reference: *Stick curtain walling façade system - FWS50*

Thermally broken curtain walling system.

Type: *Stick system Pressure equalised Mullion drained.*
Three level drainage system.

Framing

Frame members: *Aluminium curtain wall frame sections. Subject to structural verification and to manufacturer's recommendations.*

System accessories: *To manufacturer's recommendations.*

Execution: *Curtain wall assembly and erection.*

Load: *1080 kg.*

Depth: *50—250 mm.*

Length: *To suit site dimensions and to manufacturer's recommendations.*

Air permeability: *AE.*

Watertightness: *RE 1200.*

Resistance to wind load: *2.0—3.0 kN/m².*

Impact resistance: *I5/E5.*

Security level: *To EN 1627 RC2, RC3 and PAS24.*

Bullet resistance: *FB4 NS.*

Acoustic performance rating: *Up to Rw 48 dB.*

Finish as delivered: *Polyester powder coated.*

Width: *50 mm.*

Label: *Schueco 'IoF' ID tag with QR code.*

Internal framing member

Material: *Aluminium as clause 710.*

Mullion/Transom: *Sizing as per sub-contractor's calculations.*

Finish: *Powder-coating as section Z31.*

Colour/ texture: *Polyester powder coated; Internal RAL 7031 matt (30%gloss) – Blue Grey.*

External cover cap

External mullion cover cap: *Schueco V8 15mm steel look cap to match existing cap profile. 15mm flat cap in some vertical locations.*

External transom cover cap: *Schueco V8 15mm steel look cap to match existing cap profile.*

Material: *Aluminium as clause 710.*

Finish: *Powder-coating as section Z31.*

Colour/ texture: *Polyester powder coated; External RAL 7031 matt (30%gloss) - Blue Grey (to match darker grey Permarock render colour).*

Glazing: *Insulating glass units;*

- *Double glazed;*
- *Generally clear.*
- *Pilkington Suncool 70/35 (6-20-6 min) with low E coating & warm edge spacer.*

Centre pane 'U' Value: *0.92 —1.4 W/(m²K) to achieve a min. Ug value of 1.0 at centre pane.*

Accessories:

Schueco internal wall attachment profile reference 327 040 complete with glazing clip reference 228 650.
Schueco equalisation packer 224 851 + 224 852 complete with matching box size.

Schueco EPDM reference 250mm 224 155.

Matching cills & brackets.

Air tight EPDM sheet seals to all sides between curtain wall frame and existing masonry/ concrete abutment of reveal.

Perimeter framing infil to allow sufficient face width for minimum 50mm new external wall insulation returns (ie a wide outer frame or an additional knock on frame all around).

Incorporated components:

Aluminium sill flashing to base of curtain walling.

Aluminium flashing to sides and head of curtain walling system.

Internal powder coated cover flashings to perimeter of curtain walling and abutments with building fabric.

Other requirements: *All Schueco UK Limited products are to be installed in complete accordance with the information published by Schueco and exclusively by Schueco UK Limited authorised fabricators.*

Jamb and head infill details, for perimeter of curtain walling to allow for future 50mm EWI returns and allow removal of outer framing pressure caps for glass replacement.

All fixing and sealing of Schueco systems to be completed in full accordance with Schueco installation documentation using correct fixings and sealants.

General requirements/ preparatory work

210 Design

Curtain walling and associated features: *Complete the detailed design. Submit before commencement of fabrication. Ensure fire rated products are tested and certified as a system. Provide structural design and calculations for new mid span curtain walling support. Provide builders work details where required.*

Related works: *Coordinate the detailed design.*

215 Design proposals

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

220 Specification

Compliance standards: *BS EN 13830 and The Centre for Window and Cladding Technology (CWCT) 'Standard for systemised building envelopes'.*

Reference information: *For the duration of the contract, keep available at the design office, workshop and on site copies of:*

The CWCT 'Standard for systemised building envelopes'.

Publications invoked by the CWCT 'Standard for systemised building envelopes'.

230 Information to be provided during detailed design stage

Submit the following curtain walling particulars

A schedule of detailed drawings and dates for submission for comment.

A schedule of loads that will be transmitted from the curtain walling to the structure.

Proposed fixing anchor details relevant to structural design and construction.

A detailed testing programme in compliance with the main contract master programme.

A detailed fabrication and installation programme in compliance with the main contract master programme.

Proposals to support outstanding applications for Building Regulation consents or relaxations.

232 Quality plan

Requirement: *Submit during detailed design.*

Content: *In accordance with BS EN ISO 9001 and including the following:*

Name of the quality manager.

Quality assessment procedures.

Inspection procedures to be adopted in checking the work.

Stages at which check lists will be used and samples of the lists.

List of work procedures on the correct use of materials or components, both off site and on site.

List of product information with latest revisions.

Subcontractors involved in the work.

Subcontractors' quality plans.

Storage, handling, transport and protection procedures.

Procedure for registering and reporting non compliances.

Maintenance procedures and calibration records.

Certification that completed work complies with specification.

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

Submit the following curtain walling particulars

Detailed drawings to fully describe fabrication and installation.

Detailed calculations to prove compliance with design/ performance requirements.

Project specific fabrication, handling and installation method statements.

Certification for incorporated components manufactured by others confirming their suitability for proposed locations in the curtain walling.

Recommendations for spare parts for future repairs or replacements.

Recommendations for safe dismantling and recycling or disposal of products.

250 Product samples

General: Before commencing detailed design, submit labelled samples of: Clauses 110 & 111 .

260 Samples of fixings

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'

General: *Unless specified or agreed otherwise comply with:*

Part 2 - 'Loads, fixings and movement'.

Part 3 - 'Air, water and wind resistance'.

Part 4 - 'Operable components, additional elements and means of access'.

Part 5 - 'Thermal, moisture and acoustic performance'.

Part 6 - 'Fire performance'.

Part 7 - 'Robustness, durability, tolerances and workmanship'.

Project performance requirements specified in this subsection: *Read in conjunction with CWCT performance criteria.*

312 Integrity

Requirement: *The curtain walling must resist wind loads, dead loads and design live loads, and accommodate deflections and movements without damage.*

Design wind pressure: *Calculate in accordance with BS 6399-2.*

320 Deflection under dead loads

Requirement: *Framing members parallel to the curtain walling plane must not:*

Reduce glass bite to less than 75% of design dimension.

Reduce edge clearance to less than 3 mm between members and immediately adjacent glazing units, panel/ facing units or other fixed units.

Reduce clearance to less than 2 mm between members and movable components such as doors and windows.

325 Deflection under wind load

Requirement: To CWCT 'Standard for systemised building envelopes' clause 3.5 2 and the following additional requirements: Window manufacturer/ installer to current requirements/ standards.

Additional stiffness to CWCT 'Standard for systemised building envelopes' clause 3.5 4.2: *Window manufacturer/ installer to current requirements/ standards.*

330 General movement

Requirement: Curtain walling must accommodate anticipated building movements as follows: Window manufacturer/ installer to current requirements/ standards. .

332 Appearance and fit

Requirement: *Design curtain walling system:*

To ensure position and alignment of all parts and features as shown on preliminary design drawings.

To accommodate deviations in the primary support structure.

Primary support structure: *Before commencing installation of curtain walling system, carry out survey sufficient to verify that required accuracy of erection can be achieved.*

Give notice: *If the structure will not allow the required accuracy or security of erection.*

Curtain wall envelope zone tolerances

Width: *Window manufacturer/ installer to current requirements/ standards.*

335 Thermal movement – service temperature ranges

Requirement: To CWCT 'Standard for systemised building envelopes' clause 2.7.2 amended and/ or with the addition of the following: Window manufacturer/ installer to current requirements/ standards.

340 Air permeability

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.*

Permeability class to BS EN 12152: *A4*

Peak test pressure: *600 Pa*

345 Air permeability exfiltration

Requirement: The maximum permissible air exfiltration rate through the curtain walling system must not exceed: Window manufacturer/ installer to current requirements/ standards.

350 Water penetration

Watertightness class to BS EN 12154: *R7*

Peak test pressure: *600 Pa*

370 Thermal properties

Method of calculating the thermal transmittance (U-value) of curtain walling/ each zone of curtain walling: *Weighted U-value.*

Average U-value of curtain walling: *Manufacturer/ fabricator to advise whilst achieving e a Ug value of 1. at centre of each glazing unit.*

Curtain wall zone interfaces: *Co-ordinate to achieve required average U-value.*

Method for assessing thermal transmittance (U-value) of assemblies: *Not applicable.*

380 Solar and light control

Total solar energy transmission

Maximum g-value - glazing only: *As for specified glass.*

Maximum effective g-value - *As for specified glass.*

Visible light transmission: *As for specified glass.*

Minimum light transmission - glazing only: *As for specified glass.*

385 Thermal stress in glazing

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

390 Avoidance of condensation

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:*

Notional outdoor psychrometric conditions as BS 5250.

Notional indoor psychrometric conditions

Temperature: *Approx 20°C; subject to confirmation from Window manufacturer/ installer to current requirements/ standards.*

Relative humidity: *Approx 40%; subject to confirmation from Window manufacturer/ installer to current requirements/ standards.*

Vapour pressure: *Approx 0.93 kPa; subject to confirmation from Window manufacturer/ installer to current requirements/ standards.*

420 Fire resistance of curtain walling (for clause 110 only)

Standard: *To BS EN 13501-1.*

430 Fire stopping

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

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.*

435 Opening lights (Windows)

Performance criteria: *To CWCT 'Standard for systemised building envelopes', part 3*

Security

Applicable opening lights: *AWS75 tiptronic at high level.*

Security rating: *N/A.*

Opening lights restrictive catches to CWCT 'Standard for systemised building envelopes' clause 4.2.5: *To all opening lights*

Ventilation requirement: *Not required*

Windows to be cleaned from inside of the building: *No.*

Fasteners: *Concealed multipoint, operated by an internal handle.*

Integral locks: *Suited to differ/match (client to confirm)*

440 Durability

Relevant agents or degradation mechanisms: *Weathering and biological agents.*

Design life of the curtain walling system: *Not less than 25 years*

Secondary components: *Submit details together with required maintenance regime, replacement periods and methods of replacement.*

450 Safety

Finished surfaces of curtain walling: *Accessible internal and external areas must not:*

Have irregularities capable of inflicting personal injury.

Release irritant or staining substances.

460 Structural sealant/ bonded glazing requirements

Structural sealant/ bonded glazing units: *Installable, removable and replaceable without site application of structural bonding sealant.*

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

Requirement: *To CWCT 'Standard for systemised building envelopes', part 8.*

Test results and reports: *Before commencement of curtain walling fabrication and installation, submit proof of compliance with this specification.*

515 Project testing (laboratory)

Test results and reports: *Before commencement of curtain walling fabrication and installation, submit proof of compliance with this specification.*

520 Project testing (site)

Test results and reports: *Before installation of general areas of curtain walling, submit proof of compliance with this specification.*

530 Testing authority

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

535 Testing authority

Requirement: Project testing must be carried out by the curtain walling manufacturer/ contractor.

540 Test specimen

Arrangement and overall dimensions: *One unit, in a position to be agreed on site with the Main Contractor.*

Features: *All major elements of installation.*

635 Site hose test

Requirement: *To CWCT 'Standard for systemised building envelopes' Section 8.16.2, 'Standard test methods for building envelopes' Section 9.*

Joints to be tested: *Location and extent of items to be tested to be agreed with the Main Contractor.*

655 Wind load fatigue test, small specimen

Requirement: *Subject to agreement with the Main Contractor test to CWCT 'Standard for systemised building envelopes', 'Standard test methods for building envelopes' Section 14.*

Test sequence: *As CWCT 'Standard for systemised building envelopes' Table 8.1*

660 Structural sealant/ bonded glazing tests

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.*

Testing: *By sealant manufacturer to determine compatibility and adhesion of structural bonding sealant under specified design loadings.*

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

Standard: *To relevant parts of BS EN 515, BS EN 573, BS EN 755 and BS EN 12020.*

Alloy, temper and thickness: *Suitable for the application and specified finish.*

Structural members: *To BS 8118.*

712 Aluminium alloy sheet

Standards: *To relevant parts of BS EN 485, BS EN 515 and BS EN 573.*

Alloy, temper and thickness: *Suitable for the application and specified finish.*

715 Carbon steel framing sections/ Reinforcement

Standards: *To relevant parts of BS 7668, BS EN 10029, and BS EN 10210.*

Thickness: *Suitable for the application, and for galvanizing or other protective coating.*

717 Carbon steel sheet

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.*

Grade and thickness: *Suitable for the application, and for galvanizing or other protective coating.*

720 Stainless steel sheet

Standards: *To relevant parts of BS EN 10029, BS EN 10048, BS EN 10051, BS EN 10095 and BS EN ISO 9445.*

Grade: *To BS EN 10088-2, austenitic 1.4301 (304) generally, 1.4401 (316) when used externally or in severely corrosive environments.*

Thickness: *Suitable for the application.*

730 Mechanical fixings

Stainless steel: *To BS EN ISO 3506, grade A2 generally, grade A4 when used in severely corrosive environments.*

Carbon steel: *To BS 4190 and suitable for galvanizing or other protective coating.*

Aluminium brackets, rivets and shear pins: *To relevant parts of BS EN 755.*

732 Adhesives

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

735 Fixing anchors

Type and use: *Reviewed and approved by fixing manufacturers. Submit confirmatory information on request.*

Dimensions: *Not less than recommended by their manufacturers.*

Adjustment capability: *Sufficient in three dimensions to accommodate building structure and curtain walling fabrication/ installation tolerances.*

737 Glass generally

Standards: *To BS 952 and relevant parts of:*

BS EN 572 for basic soda lime silicate glass.

BS EN 1096 for coated glass.

BS EN 1748 for borosilicate glass.

BS EN 1863 for heat-strengthened soda lime silicate glass.

BS EN 12150 for thermally toughened soda lime silicate glass.

BS EN 13024 for thermally toughened borosilicate glass.

BS EN ISO 12543 for laminated glass.

Selection of glass type and thickness in accordance with recommendations of CIRIA publication 'Guidance on glazing at height.'

Glass quality: *Clean and free from obvious scratches, bubbles, cracks, ripplings, dimples and other defects.*

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

Measurement of tolerances: *Before any thermal toughening/ heat-strengthening.*

Pane dimensions less than 1500 mm

For 3 to 6 mm-thick glass: *± 1.0 mm.*

For 8 to 12 mm-thick glass: *± 1.5 mm.*

For 15 mm-thick glass: *± 2.0 mm.*

For 19 mm and 25 mm-thick glass: *± 2.5 mm.*

Pane dimensions more than 1500 mm

For 3 to 6 mm-thick glass: *± 1.5 mm.*

For 8 to 12 mm-thick glass: *± 2.0 mm.*

For 15 mm-thick glass: *± 2.5 mm.*

For 19 mm and 25 mm-thick glass: *± 3.0 mm.*

Pane squareness: *Not more than 4 mm difference in diagonal measurements.*

741 Distortional tolerances on glass

Measurement of tolerances: *After any thermal toughening/ heat-strengthening.*

Maximum bow: *0.2% of pane dimension.*

Maximum roller wave

For 3 to 5 mm-thick glass: *0.5 mm.*

For 6 to 10 mm-thick glass: *0.3 mm.*

For 12 mm and thicker glass: *0.15 mm.*

Maximum edge dip

For 3 to 5 mm-thick glass: *0.8 mm.*

For 6 to 10 mm-thick glass: *0.5 mm.*

For 12 mm and thicker glass: *0.25 mm.*

745 Insulating glass units

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

Label: *Each pane.*

Colour of aluminium perimeter spacers: *TBC.*

Perimeter taping: *Not to be used.*

Perimeter seals

Resistant to UV light degradation on exposed edges.

Compatible with structural, assembly and weather sealants.

747 Glass edge condition for structural sealant/ bonded glazing

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

750 Infill panels/ Facings

Tolerances

Deviation in size (maximum): *± 1 mm.*

Deviation in flatness from plane per 2 m length (maximum): *± 1 mm.*

Rigidity: *Adequate to comply with design/ performance requirements.*

760 Gaskets

Material:

- *Noncellular rubber to BS 4255-1.*
- *Cellular rubber to ASTM-C509.*

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.*

Durability: *Resistant to oxidation, ozone and UV degradation.*

765 Weatherstripping of opening units

Material

Noncellular rubber to BS 4255-1.

Cellular rubber to ASTM-C509-06.

Polypropylene woven pile, silicone treated.

Attachment: *Fixed in undercut grooves in framing sections using preformed corners, with any joints in the length.*

770 General sealants

Selection: *In accordance with BS 6213 from:*

- *Silicone.*
- *One part polysulfide.*
- *Two parts polysulfide.*

One or two parts polyurethane.

Classification and requirements: *To BS EN ISO 11600.*

Reaction to contact products and finishes: *Stable and compatible.*

772 Curtain walling joint assembly sealants

Material: *One part, low modulus silicone to BS EN ISO 11600, type F or G. Neutral curing where in contact with or close proximity to other products that may be adversely affected by acetoxy curing.*

Manufacturer: Contractor's choice

775 Bonding sealants for structural sealant/ bonded glazing

Material: *Silicone, neutral curing, designed and manufactured for bonding of structural sealant/ bonded glazing. Compatible with contact and close proximity products and finishes.*

Manufacturer: Contractor's choice

777 Weathersealing for structural sealant/ bonded glazing

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.*

780 Thermal insulation

Material: *Mineral wool.*

Recycled content: *N/A.*

Properties: *Durable, rot and vermin proof and not degradable by moisture or water vapour.*

Fixing: *Attached to or supported within the curtain walling so as not to bulge, sag, delaminate or detach during installation or in situ during the life of the curtain walling.*

785 Air and vapour control layer

Acceptable materials

Aluminium alloy.

Reinforced membranes: *Foil, plastics or rubbers, protected both sides by rigid facings/ linings.*

Location: *Warm side of thermal insulation.*

Integrity: *Continuous, free from gaps and sealed at joints.*

Finishes

810 Protective coating of carbon steel framing sections/ Reinforcement

Treatment: *One of the following to all surfaces:*

Hot dip galvanized to BS EN ISO 1461.

An appropriate equivalent coating to BS EN ISO 12944-5 or BS EN ISO 14713-1, -2 and -3.

820 Protective coating of carbon steel mechanical fixings

Treatment: *One of the following to all surfaces:*

Hot dip galvanized to BS EN ISO 1461.

Sherardized to BS 7371-8, Class 30 coating thickness and passivated.

Zinc plated to BS EN ISO 2081, coating designation Fe//Zn//C for an iridescent (yellow passivate) chromate conversion coating or Fe//Zn//D for an opaque (olive green) chromate conversion coating.

830 Powder-coating

Requirement: *As section Z31.*

Fabrication and installation

910 Generally

Electrolytic corrosion: *Prevent. Submit proposed methods.*

Fixings: *Concealed unless indicated on detailed drawings. Where exposed they must match material and finish of the products fixed.*

Fabrication: *Machine cut and drill products in the workshop wherever possible.*

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

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

915 Glazing

Requirement: *As section L40, unless specified otherwise in this section.*

Directional patterned/ wired glass: *Generally fix parallel to surround and align adjacent panes where seen together at close quarters.*

917 Fixings/ Adhesives application

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

920 Sealant application

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

925 Structural sealant/ bonded glazing

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

930 Assembly

General: *Carry out as much assembly as possible in the workshop.*

Joints (other than movement joints): *Rigidly secured, reinforced where necessary and fixed with hairline abutments.*

Displacement of components in assembled units: *Submit proposals for reassembly on site.*

955 Fixing anchor installation

Site drilling or cutting into structure: *Submit proposals for positions other than shown on detailed drawings.*

Concrete supporting structure

Cast-in inserts: *Provide detailed locational information. Protect cavities in inserts from entry of concrete.*

Edge fixing distances: *Not less than recommended by fixing anchor manufacturers.*

Corrective fabrication: *Minimize. Where necessary, submit proposals.*

965 Preliminary curtain walling installation

Requirement: Complete an area for inspection and approval of appearance as follows: location and extent of area for inspection to be agreed with Main Contractor.

970 Curtain walling installation

Securing to fixing anchors: *Through holes formed during fabrication only.*

Tightening mechanical fasteners: *To manufacturer's recommended torque figures. Do not overtighten fasteners intended to permit differential movement.*

Protective coverings: *Remove only where necessary to facilitate installation and from surfaces that will be inaccessible on completion.*

975 Welding

In situ welding: *No.*

980 Interfaces

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

982 Ironmongery

Assembly and fixing: *Accurately, using fasteners with matching finish supplied by ironmongery manufacturer.*

Completion: *Check, adjust and lubricate as necessary to ensure correct functioning.*

985 Maintenance

Maintenance manual: *Incorporate details within the Building Manual in accordance with CWCT 'Standard for systemised building envelopes' clause 7.6.1.*

Materials certification and test reports to be included:

- *Contact details for 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

General

10 Information to be provided with tender for windows

Submit the following curtain walling particulars

Evidence of compliance: *All windows to be CE marked to the necessary standards. Submit Declaration of Performance (DoP).*

Contractor/designer to provide plans, sections and elevation drawings at suitable scales showing all typical and non-typical details with existing / proposed building fabric, installation, fixing and sealing methods, for all window/door and curtain wall installations.

Typical detailed drawings at large scales: *Technical information and certification demonstrating compliance with specification of proposed incorporated products and finishes.*

Certification, reports and calculations demonstrating compliance with specification of proposed windows and fire rating.

Proposals for connections to and support from the building structure and building components.

Proposals for amendments to primary supporting structure and for secondary supporting structure additional to that shown on preliminary design drawings.

Schedule of builder's work, special provisions and special attendance by others.

Examples of standard documentation from which project quality plan will be prepared.

Preliminary fabrication and installation method statements and programme.

Schedule of products and finishes with a design life expectancy less than that specified in clause 440, with proposals for frequencies and methods of replacement.

Proposals for replacing damaged or failed products.

Areas of non-compliance with the specification.

Details of the Fabricators and Installers – to be on the Schueco supplied recommended list for this project.

11 Fabricator and Installer

The Fabricator and Installer are to be on the Schueco recommended list for this project; those not recommended by Schueco for this project will not be allowed to carry out the works. Details of the Fabricator and Installer are to be advised at the time of tender and at any subsequent time if there is a change.

12 Coordination with others

The contractor/ installer is to coordinate those carrying out works for the Access Control System, Builders Works and make allowance for the future external wall insulation.

Allowance is to be made for programming, detailed design coordination etc.

15 Installation Design

The manufacturer/ fabricator is to determine the combination of elements from sections H11, L10 and L20 to achieve the configurations of curtain wall, windows (fixed and openable) and doors shown on the drawings.

Therefore sections H11, L10 and L20 are to be read together.

The manufacturer/ fabricator is to include any necessary special fixings, couplers, connection pieces between differing elements to achieve the configurations of curtain walling, windows

and doors shown on the drawings such as doors with glazed side/ over panels, curtain walling with doors, coupled runs of windows which could be done as curtain walling etc.

The selection of the different elements by the manufacturer/ fabricator is clearly to be identified during tendering and confirmed in their tender return.

This section is also to coordinate with the future rendered External Wall Insulation system to B383. All frames are to make allowance for, and to accommodate, a min 50mm rendered and insulated reveal returning to them. i.e. face of outer frame is to be wide enough to comfortably accommodate 50mm of External Wall Insulation return at window reveal, head and cill without affecting opening lights, hinges and maintaining visible frame. See detail drawings 001496-ALP-09-01-DR-A-8001 and 001496-ALP-09-02-DR-A-8002 for typical window details – also applies to all curtain walling and doors. See drawing 001496-ALP-09-ZZ-DR-A-8008 for door details.

The programming of the works in this section are to coordinate with that for the future installation of the External Wall Insulation systems for B383.

Fabricator to provide individual u-value calculations for each window / type at design stage (Uw).

All window glazing to be toughened where required under Building Regulations.

90 Glazing Thermal Safety Check

Procedure: *At the time of tendering the fabricator/ installer is to carry out Glazing Thermal Safety checks.*

These are to be assessed using the "Pilkington Technical Advisory Service Check List for Thermal Safety Calculations for Pilkington Single or Multiple Glazing Subjected to Solar Radiation." Completed copies are to be included in the tender return.

Designated items: *All items in this specification section & schedule 001496-ALP-09-XX-SH-A-0002 for:*

- *Each window size*
- *Each glazing combination/ type*
- *Each elevation*

Timing: *Before submission of cost/ tender. Any divergence from this specification, and any necessary consequential changes resulting from the Glazing Safety Check, are to be advised, agreed and costs included, before both acceptance of tender and appointment of the fabricator/ installer. Post appointment changes resulting from Glazing Thermal Safety checks will not be accepted financially.*

110 Evidence of performance

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

120 Pre-construction survey

Procedure: *Before starting work on designated items take site dimensions, record on shop drawings and use to ensure accurate fabrication.*

Designated items: *All items in this specification section*

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

Timing: *Before fabrication.*

140 Control samples

Procedure

Finalize component details.

Fabricate one of each of the following designated items as part of the quantity required for the project.

Obtain approval of appearance and quality before proceeding with manufacturer of the remaining quantity.

Designated items: *All items in this specification*

150 Daylight performance

Daylight calculations: *Not required*

BREEAM requirements

Submit: *Not required*

Calculations showing: *Not required*

155 View out

Windows/ opening sizes and position: *To match existing openings only*

Products

310 Steel window units FR60 fire rated

Standard: *Fire-rated fixed window.*

Dimensions and configuration: *See drawings; site check dimensions to be taken.*

Manufacturer: *Schueco UK Ltd (Jansen AG)*

Contact details

Address: *Whitehall Avenue*
Kingston
Milton Keynes
Buckinghamshire
MK10 0AL

Telephone: *+44 (0)1908 282111*

Web: *www.schueco.co.uk*

Email: *mkinfobox@schueco.com*

Product reference: *Jansen C4 EI60 (60 minutes integrity and insulation). Fixed Frame (Type TBC by fabricator/ installer).*

Material: *Steel.*

Finish / colour as delivered:

- *Polyester powder coated; Split frame colours;*
- *External RAL 7031 matt (30% gloss) - Blue Grey (to match darker grey Permarock render colour);*
- *Internal RAL 7031 matt (30% gloss).*

Glazing details:

- *Double glazed:*
- *External pane – Solar Control 6mm Pilkington Suncool 70/35; Cavity - 20mm; Internal pane - 1 hour fire rated glass (integrity) Pilkington Pyrostop 60-361.*
- *Clear except for toilets which are to be obscure.*

Thermal Insulation: *0.92 —1.4 W/(m²K) to achieve a min Ug value of 1.0.*

Fire: *EI60 (60 minutes integrity and insulation) .*

Beading:

- *Internal;*
- *Dry;*
- *Jansen metal;*
- *Square/ box section*

Ironmongery/ accessories:

- *No trickle vent required;*
- *Non-openable unit;*
- *Matching cills & brackets*
- *Fixings; at abutments as required by manufacturer for certification*
- *Packings; Rockwool pack to abutment*
- *Sealant; Colour matched internal and external to all sides*
- *Air tight Fire rated sheet seals to all sides between window frame and existing masonry/ concrete abutment of reveal.*
- *perimeter framing to allow sufficient face width for minimum 50mm new external wall insulation returns (ie a wide outer frame or an additional knock on frame all around).*
- *Internal cover trim over existing finishes*

Fixing: *Window shall be installed in complete accordance with the information published by Schueco, exclusively by authorised Schueco UK fabricators/ installers.*

330 Aluminium window units Openable & Fixed Non Fire Rated

Manufacturer: *Schueco UK Ltd*

Contact details

Address: *Whitehall Avenue*
Kingston
Milton Keynes
Buckinghamshire
MK10 0AL

Telephone: *+44 (0)1908 282111*

Web: *www.schueco.co.uk*

Email: *mkinfobox@schueco.com*

Product reference: *AWS 75.SI+ (Super Insulation) thermally broken outwards opening/ fixed window system.*

Standard: *Non-fire-rated windows to BS EN 14351-1.*

Dimensions and configuration:

- *See drawings; site check dimensions to be taken;*
- *Combinations of top hung (outwards opening), side hung (outwards opening) and fixed there of (see drawings).*

Product performance

Weather performance

UK exposure category: *To BS6375-1.*

Air permeability: *To EN 12207, class 4.*

Watertightness: *To EN 12208, class 9A.*

Resistance to wind load: *To EN 12210, C5/B5.*

Safety

Security level: *To EN 1627, RC3 and PAS24*

Environmental

Acoustic performance rating: *Up to Rw 48 dB.*

Frame

Finish as delivered

Coating: *Aluminium Polyester powder coated.*

Colour:

- *Split frame colours;*
- *External RAL 7031 matt (30% gloss) - Blue Grey (to match darker grey Permarock render colour);*
- *Internal RAL 7031 matt (30% gloss).*

Film thickness (minimum): *Standard PPC minimum 40-70 Microns depending upon project requirement as Z31 Powder Coatings.*

Ironmongery: *All by Schueco*

- *No trickle vent required;*
- *For openable units only Schueco AvanTec SimplySmart -*
- *Restrictors to all windows*
- *hinges/ friction stays*
- *matt aluminium lockable handles keyed alike.*

Operation

Type: *Manual for openable windows.*

Electrical supply: *N/A.*

Execution: *Fixing of aluminium frames.*

Loading: *Class 4.*

Width: *To manufacturers requirements.*

Thermal insulation: *0.92 —1.4 W/(m²K) to achieve a min Ug value of 1.0.*

Depth: *75 mm.*

Glazing details:

- *Double glazed;*
- *Generally clear, obscure to toilets;*
- *Toughened at low level where below +800mm FFL (W-001-01, W-002-01 & W-003-01)*
- *internal square glazing bead glazed with EPDM gaskets;*
- *Pilkington Suncool 70/35 (6-20-6 min) with low E coating & warm edge spacer.*

Fixing: *Window shall be installed in complete accordance with the information published by Schueco, exclusively by authorised Schueco UK fabricators.*

Accessories:

- *Matching cills & brackets;*
- *Matching coupling pieces;*
- *Air tight EPDM sheet seals to all sides between window frame and existing masonry/ concrete abutment of reveal.*

- *If required matching coupling mullions for multiple unit assemblies (e.g CW.001.02 Window Type M).*
- *Sealant; Colour matched internal and external to all sides*
- *perimeter framing to allow sufficient face width for minimum 50mm new external wall insulation returns (ie a wide outer frame or an additional knock on frame all around).*
- *Matching PPC aluminium Internal cover trim over existing finishes.*

332 Aluminium window units Fixed Non Fire Rated Frame for louvres (read with L10/650)

Manufacturer: *Schueco UK Ltd*

Contact details

Address: *Whitehall Avenue*
Kingston
Milton Keynes
Buckinghamshire
MK10 0AL

Telephone: *+44 (0)1908 282111*

Web: *www.schueco.co.uk*

Email: *mkinfobox@schueco.com*

Product reference: *Super insulated aluminium window system - AWS75.SI+ (AWS75.SI+ Fixed Light)*

Standard: *Non-fire-rated windows to BS EN 14351-1.*

Dimensions and configurations:

See drawings: Site check dimensions to be taken. Fixed.

Product performance

Weather performance

UK exposure category: *To BS6375-1.*

Air permeability: *To EN 12207, class 4.*

Watertightness: *To EN 12208, class 9A.*

Resistance to wind load: *To EN 12210, C5/B5.*

Safety

Security level: *To EN 1627, RC3 and PAS24.*

Environmental

Acoustic performance rating: *Up to Rw 48 dB.*

Frame

Finish as delivered

Coating: *Aluminium Polyester powder coated.*

Colour: *RAL 7031 matt (30%gloss) - Blue Grey (to match darker grey Permarock render colour)*

Film thickness (minimum): *To manufacturer's recommendations.*

Ventilator: *None to frame;*
Fit louvre as L10/ 650 into frame opening.

Ironmongery: *None (fixed unit)*

Operation

Type: *N/A.*

Electrical supply: *N/A.*

Execution: *Fixing of aluminium frames.*

Loading: *Class 4.*

Width: *To manufacturers requirements.*

Thermal insulation: *0.92 —1.4 W/(m²K) to achieve a Ug value of 1.0.*

Depth: *75 mm.*

Thermal performance (U-value maximum): *Frame performance as per L10/330*

Glazing details: *Fit louvres as L10/650 with internal square glazing bead glazed with EPDM gaskets.*

Fixing: *Window shall be installed in complete accordance with the information published by Schueco, exclusively by authorised Schueco UK fabricators.*

Accessories:

- *Matching cills & brackets;*
- *Matching coupling pieces.*
- *Air tight EPDM sheet seals to all sides between window frame and existing masonry/ concrete abutment of reveal.*
- *Sealant; Colour matched internal and external to all sides*
- *perimeter framing to allow sufficient face width for minimum 50mm new external wall insulation returns (i.e. a wide outer frame or an additional knock on frame all to the window perimeter).*
- *Matching PPC aluminium Internal cover trim over existing finishes*

333 Aluminium window units Fire Rated FR30

Manufacturer: *Schueco UK Ltd*

Contact details

Address: *Whitehall Avenue*
Kingston
Milton Keynes
Buckinghamshire
MK10 0AL

Telephone: *+44 (0)1908 282111*

Web: *www.schueco.co.uk*

Email: *mkinfobox@schueco.com*

Product reference: *Aluminium fire-resistant window system - AWS 70 FR 30*

Dimensions and configurations: *See drawings; site check dimensions to be taken. Fixed.*

Product performance

Fire performance

Fire resistance: *To EN 1364 and EN 1634, EW30, EI²30, EI1³0.*

Weather performance

UK exposure category: *To BS6375-1.*

Air permeability: *To EN 1026, Class 4.*

Watertightness: *To EN 1027, Class 9A.*

Resistance to wind load: *To EN 12211, C5/B5.*

Environmental

Acoustic performance rating: *Up to Rw 48 dB.*

Thermal

Whole window U-value: *0.92 —1.4 W/(m²K) to achieve a Ug value of 1.0.*

Frame

Finish as delivered

Coating: *Aluminium Polyester powder coated.*

Colour:

Split frame colours;

- *External RAL 7031 matt (30% gloss) - Blue Grey (to match darker grey Permarock render colour);*
- *Internal RAL 7031 matt (30% gloss).*

Film thickness (minimum): *To manufacturer's recommendations.*

Ventilator: *Fire rated. For non-mechanically ventilated rooms only; MGP to advise during design stage.*

Ironmongery: *None (fixed window)*

Operation; Fixed

Type: *N/A.*

Electrical supply: *N/A.*

Execution: *Fixing of aluminium frames.*

Depth: *TBC.*

Cycles: *≥ 10 000.*

Load: *To EN 1191, Class 1.*

Smoke-resistance: *Smoke-proof at 200°C.*

Thermal insulation: *0.92 —1.4 W/(m²K) to achieve a Ug value of 1.0.*

Depth: *75 mm.*

Glazing details:

- *To achieve fire performance;*
- *Double glazed;*
- *External pane 6mm Pilkington Suncool 70/35; Internal pane 1/2 hour fire rated glass (integrity). Pilkington Pyrostop 30-36 EI30 performance*
- *Generally clear, obscure to toilets;*
- *internal square glazing bead glazed with EPDM gaskets;*
- *To match visually and thermally Pilkington Suncool 70/35 with warm edge spacer.*

Fixing: *Window shall be installed in complete accordance with the information published by Schueco, exclusively by authorised Schueco UK fabricators.*

Accessories:

- *Matching cills & brackets;*
- *Matching coupling pieces.*
- *Air tight fire rated sheet seals to all sides between window frame and existing masonry/ concrete abutment of reveal.*
- *Sealant; Colour matched internal and external to all sides*
- *perimeter framing to allow sufficient face width for minimum 50mm new external wall insulation returns (ie a wide outer frame or an additional knock on frame all around).*

650 Louvres for glazing into window frames (read with L10/332)

Manufacturer: *Renson Fabrications Ltd*

Contact details

Address: *Fairfax Units 1 - 5*
Bircholt Road
Parkwood Industrial Estate
Maidstone
Kent
United Kingdom
ME15 9SF

Telephone: *+44 (0)1622 754123*

Web: *www.rensonuk.net*

Email: *spec@rensonuk.net*

Product reference: *Aluminium Louvre 414 (Powder-Coated) THF*

Size (l x w x d): *See drawing; take site check dimension*

Material: *Aluminium sections (AlMgSi 0.5, according EN 12020-2).*

Finish: *Powder-coated.*

Colour: *RAL 7031 matt (30%gloss) - Blue Grey (to match darker grey Permarock render colour)*

Texture: *30% gloss*

Construction: *32 mm frame thickness.*

Weather performance

Water penetration class (minimum): *To BS EN 13030, Class A.*

Discharge loss coefficient (minimum): *To BS EN 13030, Class 3.*

Louvre configuration

Number of banks: *One.*

Blade orientation: *Horizontal.*

Blade pitch: *33.3 mm.*

Blade angle: *Fixed.*

Accessories:

- *Drainage profile.*
- *Water channel.*
- *Stainless steel 316 insect screen (*6mm x 6mm*).*
- *Colour matching metal faced insulating (0.92 —1.4 W/(m²K) to achieve a Ug value of 1.0 to match performance of door glazing) blanking panels for non active areas of louvres to rear.*
- *Colour matching metal faced insulating (0.92 —1.4 W/(m²K) to achieve a Ug value of 1.0 to match performance of door glazing) infill panels where pipes/ ducts penetrate louvre, with matching pipe/ duct cover flange.*

Integral accessories: *Requires to be glazed into a Schucco window frame L10/332*

Fixing: *To manufacturers recommendations into 32 mm glazing sections.*

Air flow: *K-factor (entry) to EN 13030, 20.47. K-factor (discharge) to EN 13030, 19.58.*

Free area: *Visual free area: 59%. Physical free area: 50%.*

Ingress protection (IP) rating: *IP2XD.*

Execution

710 Protection of components

General: *Do not deliver to site components that cannot be installed immediately or placed in clean, dry floored and covered storage.*

Stored components: *Stack vertical or near vertical on level bearers, separated with spacers to prevent damage by and to projecting ironmongery, beads, etc.*

740 Corrosion protection

Surfaces to be protected: *Surfaces of aluminium components, which will come into contact with mortar, concrete or plaster, or treated timber.*

Protective coating: *Two coats of bitumen solution to BS 6949 or an approved mastic-impregnated tape.*

Timing of application: *Before fixing components.*

750 Building in

General: *Not permitted unless indicated on drawings.*

Brace and protect components to prevent distortion and damage during construction of adjacent structure.

760 Replacement window installation

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

765 Window installation generally

Installation: *Into prepared openings.*

Gap between frame edge and surrounding construction

Minimum: *4 mm.*

Maximum: *10 mm.*

Distortion: *Install windows without twist or diagonal racking.*

766 Location of openable windows in naturally ventilated buildings

Location: *Over 10 m from sources of external pollution.*

770 Damp-proof courses in prepared openings

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

781 Fixing of steel frames

Standard: *As section Z20.*

Fasteners: *To manufacturers requirements*

Spacing: *To manufacturers requirements*

782 Fixing of aluminium frames

Standard: *As section Z20.*

Fasteners: *To manufacturer's recommendations.*

Spacing: *When not predrilled or specified otherwise, position fasteners not more than 100 mm from ends of each jamb, adjacent to each hanging point of opening lights, and at maximum 400 mm centres.*

790 Fire-resisting frames

Gap between back of frame and reveal: Completely fill with tightly packed mineral wool to manufacturers requirements.

810 Sealant joints

Sealant

Manufacturer: *To window manufacturer's recommendations.*

Product reference: *To window manufacturer's recommendations.*

Colour: *To match frame colour.*

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

820 Ironmongery

Fixing: *Assemble and fix carefully and accurately using fasteners with matching finish supplied by ironmongery manufacturer. Do not damage ironmongery and adjacent surfaces.*

Checking/ adjusting/ lubricating: *Carry out at Completion and ensure correct functioning.*

Ω End of Section

L20 DOORS / SHUTTERS / HATCHES

General

10 Information to be provided with tender for all doors

Submit the following curtain walling particulars

Evidence of compliance: *All doors to be CE marked to appropriate standard.*

Contractor/designer to provide plans, sections and elevation drawings at suitable scales showing all typical and non-typical details with existing / proposed building fabric, installation, fixing and sealing methods, for all window/door and curtain wall installations.

Typical detailed drawings at large scales: *Technical information and certification demonstrating compliance with specification of proposed incorporated products and finishes,*

Certification, reports and calculations demonstrating compliance with specification of proposed curtain walling where doors are incorporated.

Proposals for connections to and support from the building structure and building components.

Proposals for amendments to primary supporting structure and for secondary supporting structure additional to that shown on preliminary design drawings.

Schedule of builder's work, special provisions and special attendance.

Allow for investigation, builders work and design where required e.g. removal of ply boxing above door D-016-01, repositioning of door to allow full height insulated over panel to under side of masonry/concrete opening surround, internal and external finishes repair, and existing services penetration through over panel above door.

Examples of standard documentation from which project quality plan will be prepared.

Preliminary fabrication and installation method statements and programme.

Schedule of products and finishes with a design life expectancy less than that specified in clause 440, with proposals for frequencies and methods of replacement.

Proposals for replacing damaged or failed products.

Areas of non-compliance with the specification.

Details of the Fabricators and Installers – to be on the Schueco supplied recommended list for this project.

11 Fabricator and Installer

The Fabricator and Installer are to be on the Schueco recommended list for this project; those not recommended by Schueco for this project will not be allowed to carry out the works. Details of the Fabricator and Installer are to be advised at the time of tender and at any subsequent time if there is a change.

12 Coordination with others

The contractor/ installer is to coordinate others including those carrying out works for the Access Control System, Builders Works and allow for future external wall insulation.

Allowance is to be made for programming, detailed design, coordination etc.

15 Installation Design

The manufacturer/ fabricator is to determine the combination of elements from sections H11, L10 and L20 to achieve the configurations of curtain wall, windows (fixed and openable) and doors shown on the drawings.

Therefore sections H11, L10 and L20 are to be read together.

The manufacturer/ fabricator is to include any necessary special fixings, couplers, connection pieces between differing elements to achieve the configurations of curtain walling, windows and doors shown on the drawings such as doors with glazed side/ over panels, curtain walling with doors, coupled runs of windows which could be done as curtain walling etc.

The selection of the different elements by the manufacturer/ fabricator is clearly to be identified during tendering and confirmed in their tender return.

This section if also to coordinate with the new rendered External Wall Insulation system to B383. All frames are to make allowance for, and to accommodate, a min 50mm rendered and insulated reveal returning to them.

The programming of the works in this section are to coordinate with that for the installation of the External Wall Insulation systems for B383.

All fire exit doors are to achieve minimum 850mm clear opening, including any ironmongery with door at 90 degrees, as SOCOTEC fire report requirements. Note: basement exit door D-015-01 will not achieve this – outer framing will not have EWI returns or wide outer framing, due to opening width and so opening size can be maximised for this door.

Fabricator to provide individual u-value calculations for each door / curtain walling / type at design stage (Uw).
Contractor door design to comply with Building Regulations and DDA access requirements

90 Glazing Thermal Safety Check

Procedure: *At the time of tendering the fabricator/ installer is to carry out Glazing Thermal Safety checks.*

These are to be assessed using the "Pilkington Technical Advisory Service Check List for Thermal Safety Calculations for Pilkington Single or Multiple Glazing Subjected to Solar Radiation." Completed copies are to be included in the tender return.

Designated items: *All items in this specification section & schedule 001496-ALP-09-XX-SH-A-0002 for*

- *Each DGU*
- *Each glazing combination/ type*
- *Each elevation*

Timing: *Before submission of cost/ tender. Any divergence from this specification, and any necessary consequential changes resulting from the Glazing Safety Check, are to be advised, agreed and costs included, before both acceptance of tender and appointment of the fabricator/ installer. Post appointment changes resulting from Glazing Thermal Safety checks will not be accepted financially.*

120 Non-fire-resisting pedestrian doors/ door assemblies/ doorsets

Evidence: *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.*

Components and assemblies: *Marked to the relevant UKCA/ UKNI/ CEI marking European product standard (hEN), national product standard and/ or third-party certification rating.*

150 Site dimensions

Procedure: *Before starting work on designated items take site dimensions, record on shop drawings and use to ensure accurate fabrication.*

170 Control samples

Procedure

Finalize component details.

Fabricate one of each of the following designated items as part of the quantity required for the project.

Obtain approval of appearance and quality before proceeding with manufacture of the remaining quantity.

Products

482 External Grade Aluminium Doorsets; glazed & louvred non fire rated

- Description: *External grade aluminium doorsets that are either stand alone or used in combinations with windows and/or curtain walling.*
- Manufacturer: *Schueco UK Ltd*

Contact details

Address: *Whitehall Avenue*
Kingston
Milton Keynes
Buckinghamshire
MK10 0AL

Telephone: *+44 (0)1908 282111*

Web: *www.schueco.co.uk*

Email: *mkinfobox@schueco.com*

Product reference: *Aluminium Entrance door AD UP 75*

- Standard: *Non-fire rated doors to BS EN 14351-1; Building Regulations and Reading University Light reflectance value requirements.*
- Third party accreditation: *Cradle to Cradle Certified® Silver.*
- Configuration: *Single leaf / double leaf/ asymetric double leaf; with/ without overpanels/ side panels. For inward/ opening see drawings.*
- Doorset size: *To suit site dimensions.*
- *Performance*

Acoustic performance: *N/A*

Strength and durability: *Mechanical strength: Class 3; proof of durability: Class 7, Class 8.*

Thermal: *Frame: ≥1.4 W/m²K; glazing and solid panels approx*

Intruder resistance

Minimum requirement: *TBC.*

- *Frame*

Material: *Aluminium.*

Threshold: *Aluminium. Weather resistant. Flat door threshold for DDA & trolley access.*

Finish

Coating: *Powder coated.*

Texture: *Manufacturer's standard.*

Colour: *Both sides: RAL 7031 (30% gloss)*

Installation fasteners: *To manufacturer's recommendations.*

Threshold: *Weather resistant. Flat door threshold for DDA & trolley access.*

- *Door leaf*

Thickness: *75 mm.*

Core: *Solid; fabricator/ installer to propose*

Panel details: *Fabricator/ installer to propose to achieve a Ug value of 1.0; internal beading.*

Material: *Aluminium.*

Glazing -

- *Double glazed:*
- *Generally clear, except for obscure film/ interlayer where noted in the schedule;*
- *All toughened*
- *internal square glazing bead glazed with EPDM gaskets;*
- *Pilkington Suncool 70/35 (6-20-6 min) with low E coating & warm edge spacer.*
- *Window shall be installed in complete accordance with the information published by Schueco, exclusively by authorised Schueco UK fabricators.*
  Clear double glazed to achieve a minimum Ug value of 1.0 (centre pane) with visual and thermal performance to match Pilkington Suncool 70/35 with low E coating; internal beading.
  All door glazing and side panel glass to be toughened glass for both panes of DGU.

For louvres – see L20/650

Finish

Coating: *Powder coated.*

Texture: *Manufacturer's standard.*

External colour: *RAL 7031 (30% gloss) LRV 13*

Internal colour: *RAL 7031 (30% gloss) LRV 13*

Film thickness (minimum): *Manufacturer's standard.*

Hardware: *All to be by Schueco; Generally*

- *Pull handles/ push plates*
- *Hinges*
- *Flush bolts to in active leafs*
- *Door closers (for auto openers and hold open see door schedule)*
- *Locks for Euro Profile cylinders (generally Sash locks except multipoint locks with roller latch to door D-001-01)*
- *Suited Europrofile cylinders with internal thumb turns*

Accessories: *To manufacturer's recommendations.*

- *Full weather seals*
- *Sealant between frames and opening reveal.*
- *Security door contacts by others*
- *Internal wireways for the access control system and door security contacts.*
- *perimeter framing to allow sufficient face width for minimum 50mm new external wall insulation returns (ie a wide outer frame or an additional knock on frame all around) except for door D-015-01.*

Air permeability: *To EN 12207, Class 3.*

Watertightness: *Fully weather proof to EN 12208, Class 4A.*

Resistance to wind load: *To EN 12210, Class C1/ B1.*

650 Louvres for glazing into doors & door frames

Description: *Direct glazed louvres for use in louvred doors, window ft and overpanels.*

Manufacturer: *Renson Fabrications Ltd*

Contact details

Address: *Fairfax Units 1 - 5*
Bircholt Road
Parkwood Industrial Estate
Maidstone
Kent
ME15 9SF

Telephone: *+44 (0)1622 754123*

Web: *www.rensonuk.net*

Email: *spec@rensonuk.net*

Product reference: *Aluminium Louvre 414 (Powder-Coated) THF 28 thermal break (o/a thickness to match double glazed units.*

Size (l x w x d): *See drawing; take site check dimension*

Material: *Aluminium sections (AlMgSi 0.5, according EN 12020-2).*

Finish: *Powder-coated.*

Colour: *RAL 7031 matt (30%gloss) - Blue Grey (to match darker grey Permarock render colour)*

Texture: *30% gloss*

Construction: *32 mm frame thickness.*

Weather performance

Water penetration class (minimum): *To BS EN 13030, Class A.*

Discharge loss coefficient (minimum): *To BS EN 13030, Class 3.*

Louvre configuration

Number of banks: *One.*

Blade orientation: *Horizontal.*

Blade pitch: *33.3 mm.*

Blade angle: *Fixed.*

Hardware: *All to be by Schueco; Generally*

- *Lever handles on back plates*
- *Hinges*
- *Flush bolts to in active leafs*
- *Door closers (for auto openers and hold open see door schedule)*
- *Sash locks for Euro Profile cylinders*
- *Suited Europrofile cylinders with internal thumb turns*

Accessories:

- *To manufacturer's recommendations.*
- *Full weather seals*
- *Sealant between frames and opening reveal.*
- *Security door contacts by others*
- *Internal wireways for the access control system and door security contacts.*
- *Drainage profile.*
- *Water channel.*
- *Removeable stainless steel 316 insect screen (*6mm x 6mm*).*
- *Colour matching metal faced insulating blanking panels for non active areas of louvres to rear.*
- *Colour matching metal faced insulating infil panels where pipes/ ducts penetrate louvre, with matching pipe/ duct cover flange.*
- *perimeter framing to allow sufficient face width for minimum 50mm new external wall insulation returns.*

Fixing: *To manufacturers recommendations into 32 mm glazing sections.*

Air flow: *K-factor (entry) to EN 13030, 20.47. K-factor (discharge) to EN 13030, 19.58.*

Free area: *Visual free area: 59%. Physical free area: 50%.*

Ingress protection (IP) rating: *IP2XD.*

Execution

710 Protection of components

General: *Do not deliver to site components that cannot be installed immediately or placed in clean, dry, floored and covered storage.*

Stored components: *Stacked on level bearers, separated with spacers to prevent damage by and to projecting ironmongery, beads, etc.*

740 Corrosion protection

Protective coating: *Two coats of bitumen solution to BS 6949*

Timing of application: *Before fixing components.*

750 Fixing doorsets

Timing: *To be to Main Contractors Overall Programme in conjunction with the requirements of the External Wall Insulation Installer.*

760 Building in

General: *All installations are into existing openings.*

780 Damp-proof courses in prepared openings

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

820 Sealant joints to frames

Sealant

Manufacturer: *Contractor's choice to suit location and application.*

Product reference: *Contractor's choice*

Colour: *To match colour of frame.*

Application: *As section Z22 to prepared joints. Triangular fillets finished to a flat or slightly convex profile.*

830 Fixing ironmongery generally

Fasteners: *Supplied by ironmongery manufacturer.*

Finish/ corrosion resistance: *To match ironmongery.*

Holes for components: *No larger than required for satisfactory fit/ operation.*

Adjacent surfaces: *Undamaged.*

Moving parts: *Adjusted, lubricated and functioning correctly at completion.*

840 Fixing ironmongery to fire-resisting door assemblies

General: *All items fixed in accordance with door leaf manufacturer's recommendations ensuring that integrity of the assembly, as established by testing, is not compromised.*

Holes for through fixings and components: *Accurately cut.*

Clearances: *Not more than 8 mm unless protected by intumescent paste or similar.*

Lock/ latch cases for fire doors requiring >60 minutes integrity performance: *Coated with intumescent paint or paste before installation.*

850 Location of hinges

Primary hinges: *Where not specified otherwise or recommended by manufacturer, position hinges with centre lines 250 mm from top and bottom of door leaf.*

Third hinge: where specified, positioned with centre line 250 mm below centre line of top hinge unless recommended otherwise by manufacturer. .

Hinges for fire-resisting doors: *Positioned in accordance with door leaf manufacturer's recommendations.*

860 Installation of emergency and panic exit devices

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

P21 DOOR / WINDOW IRONMONGERY

Pre-tender

10 Quantities and locations

Quantities and locations of ironmongery:

Fixing: As sections L10 / L20 and recommended by manufacturer for framing system and substrate type.

General

121 Ironmongery from single proprietary range (except for auto door opener)

Manufacturer: Schueco

Product references: To be advised by Schueco

Principal material/ finish: Generally stainless steel. Ironmongery to be co-ordinated

Items unavailable within selected range: Submit proposals.

Samples: Submit samples of all ironmongery for comment / approval.

122 Ironmongery from single proprietary range (auto door opener)

Manufacturer: DormaKaba

Product reference: Final automatic door operator specification to be co-ordinated with door weight, Schuco electric locks and door controller panel/system by specialist access control company/Door installer.

Principal material/ finish: Stainless Steel.

Items unavailable within selected range: Submit proposals.

140 Samples

General: before placing orders with suppliers submit labelled samples for all items in this section.

180 Strength class or category of duty for door ironmongery

Requirement: Heavy duty

General: Durability of ironmongery components to be compatible with stated category of duty of each door leaf.

Exclusions: Ironmongery with specific duty or 'category of use' defined elsewhere.

Documentation: Before placing orders with suppliers submit documentation showing product compliance with stated category of duty.

Door hanging devices

320 Door hinges

Description: To all doors

Manufacturer: Schueco.

Product reference: As advised by Schueco.

Type: As advised by Schueco.

Size: As advised by Schueco to suit door

Material/ finish: Stainless steel

Door operating devices

410 Controlled door closers

Description: To all doors, except door D001-01

Standard: To BS EN 1154.

Manufacturer: Geze

Product reference: TS 5000 R-ISM/ECline/E to suit door type / operation

Type: As advised by Schueco Geze for door operation.

Power size: As advised by Schueco Geze for door operation.

Other functions: Hold open where noted on door schedule

Materials and finishes

Bodies: Stainless steel

Arms: Stainless steel

Casings: Stainless steel

Operational adjustment As advised by Schueco Geze for door operation.

Variable power: Matched to size, weight and location of doors.

Latched doors: Override latches and/ or door seals when fitted.

Unlatched doors: Hold shut under normal working conditions.

Closing against smoke seals of fire doors: Positive. No gaps.

411 Auto door opener/ closers

Description: To door D001-01 only

Standard: To BS EN 1154.

Manufacturer: Dormakaba

Product reference: ED 250 A Electromechanical Swing Door Operators.

Type: To suit door, and location.

Power size: To suit door, and location.

Other functions: Linked to fire alarm system

Materials and finishes

Bodies: Stainless Steel

Arms: Stainless Steel

Casings: Stainless Steel

Operational adjustment As advised by Dormakaba/Schueco and fabricator/ installer

Variable power: Matched to size, weight, location of doors and wind loads.

Latched doors: Override latches and/ or door seals when fitted.

Other requirements: To interface with clients access control system, Schuco electric locks and fire alarm system as required. Contractor to provide final design, connection and commissioning of entire door automated operating system and locking; internal tubular pedestrian safety barriers to match.

481 Door coordinators

Description: Where required/ to all double and leaf/ half doors with rebated meeting stiles and fitted with self-closers except D001-01

Standard: To BS EN 1158.

Manufacturer: As advised by Schueco or fabricator/ installer

Product reference: As advised by Schueco or fabricator/ installer

Material/ finish: Brushed aluminium

Door securing devices

515 Door locks

Description: To all doors, except door D001-01

Standard: To BS EN 12209.

Manufacturer: Schueco

Product reference: As advised by Schueco.

Type: Electric Shoot bolt locks for 3 point interlock latch, Electric shoot bolt locks for panic latch and Electric 3 point interlock latch and bolt locks bolt locks for double leaf. Final specification/product reference as advised by Schueco to suit access control system, for door type and operation. Provide/install control unit to interface with clients access control system for each door.

Backset: As advised by Schueco or fabricator/ installer

Material/ finish: Stainless Steel

Keying: Europrofile suited to site requirements

Other requirements: Door operator system to suit electric locks. To interface with clients access control system.. Contractor to provide final design, connection and commissioning of entire door operating system, closing, access control, fire escape and locking.

516 Door locks

Description: To door D001-01 only

Standard: To BS EN 12209.

Manufacturer: Schueco

Product reference: As advised by Schueco/fabricator installer.

Type: Electronic access multipoint roller latch / Electric Shoot bolt lock for 3 point interlock latch and bolt locks, as advised by Schueco or fabricator/ installer. Provide/install control unit to interface with clients access control system and door automation system.

Schuco electric locking and unlocking of both leaves to be paired with Dormakaba automated door opening system, so both leaves automatically open, close and lock with the automated card swipe door access system. Operating system and door locks to suit high frequency inward opening doors and fire escape requirements.

Backset: As advised by Schueco or fabricator/ installer

Material/ finish: Stainless Steel

Keying: Europrofile suited to site requirements

Other requirements: To interface with clients access control system. Contractor to provide connection and commissioning of entire door system; internal tubular pedestrian safety barriers.

518 Access Control system

Description: To all doors fitted with access control/electronic locking.

Standard: To BS EN 12209.

Manufacturer: Specialist subcontractor TBA

Product reference: TBA

Type: As advised by Schueco or fabricator/ installer

Backset: As advised by Schueco or fabricator/ installer

Material/ finish: As advised by Schueco or fabricator/ installer

Other requirements: To include individual door controls/controler for each lock compatible with all Schueco locks, external card readers, internal push button releases, internal emergency release TBA; final wired connections testing and commissioning.

577 Panic exit devices

Description: Push bar, multipoint latching

Standard: To BS EN 1125.

Manufacturer: Schueco

Product reference: As advised by Schueco or fabricator/ installer, to suit doors and access control system

Type: As advised by Schueco or fabricator/ installer

Material/ finish: Stainless Steel

Additional requirements: Escape and operational signage; Easy clean floor sockets and flush head socket plates

582 Door bolts

Description: To all passive leaf of leaf and a half doors

Standard: To BS EN 12051.

Manufacturer: Schueco

Product reference: As advised by Schueco or fabricator/ installer

Type: Flush

Size: As advised by Schueco or fabricator/ installer

Material/ finish: Stainless steel

Additional requirements: Easy clean floor sockets and flush head socket plates

Submittals: provide samples for client comment/approval

Door furniture

641 Pull handles

Description: Pull handles to all doors where required

Standard: To BS 8424.

Manufacturer: Schueco

Product reference: 1400 ST Design

Shape: Angles & straight vertical

Diameter: As advised by Schueco or fabricator/ installer

Distance between centres: As advised by Schueco or fabricator/ installer

Material/ finish: Stainless steel

Mounting: As advised by Schueco or fabricator/ installer

Submittals: Submit sample to client for comment, at design stage.

670 Push plates

Description: To all doors fitted with pull handles

Manufacturer: Schueco

Product reference: As advised by Schueco or fabricator/ installer

Size: As advised by Schueco or fabricator/ installer

Material/ finish: Stainless steel

Mounting: As advised by Schueco or fabricator/ installer

Submittals: Submit sample to client for comment, at design stage.

850 Threshold weatherstrip

Description: To all doors

Manufacturer: As advised by Schueco or fabricator/ installer

Product reference: As advised by Schueco or fabricator/ installer suitable for trolley traffic and disabled access

Type: As advised by Schueco or fabricator/ installer

Size: As advised by Schueco or fabricator/ installer

Material/ finish: To match door

Submittals: Submit sample to client for comment, at design stage

855 Weatherstrip to door head and jambs

Description: To all doors

Manufacturer: Schueco

Product reference: As advised by Schueco or fabricator/ installer

Type: As advised by Schueco or fabricator/ installer

Size: As advised by Schueco or fabricator/ installer

Material/ finish: To match door

Submittals: Submit sample to client for comment, at design stage

860 Door seals at meeting stiles

Description: To all double and leaf/ half doors

Manufacturer: As advised by Schueco or fabricator/ installer

Product reference: As advised by Schueco or fabricator/ installer

Type: As advised by Schueco or fabricator/ installer

Size: As advised by Schueco or fabricator/ installer

Material/ finish: As advised by Schueco or fabricator/ installer

Window furniture

900 Casement handles

Description: To all opening window lights

Manufacturer: Schueco

Product reference: As advised by Schueco or fabricator/ installer

Type: Levers

Material/ finish: Brushed aluminium/ to match already installed Schuco windows

Features: Lockable & all keyed alike.

Submittals: Submit sample to client for comment, at design stage

930 Friction restrictor casement stays

Description: Concealed. To all opening windows.

Manufacturer: Schueco

Product reference: As advised by Schueco or fabricator/ installer, top hung/casement type to suit window operation.

Type: As advised by Schueco or fabricator/ installer

Size: As advised by Schueco or fabricator/ installer

Material/ finish: Stainless Steel

Features: Limits normal opening to 150mm with maintenance release to open wider

Submittals: Submit sample to client for comment, at design stage

Ω End of Section

Z20 FIXINGS & ADHESIVES

Products

310 Fasteners generally

Materials: To manufacturer's recommendations.

Bimetallic corrosion resistance appropriate to items being fixed.

Atmospheric corrosion resistance appropriate to fixing location.

Appearance: Submit samples on request.

320 Packings

Materials: Noncompressible, corrosion proof.

Area of packings: Sufficient to transfer loads.

330 Nailed timber fasteners

Nails

Steel: To BS 1202-1 or BS EN 10230-1.

Copper: To BS EN 1202-2.

Aluminium: To BS 1202-3.

340 Masonry fixings

Light duty: Plugs and screws.

Heavy duty: Expansion anchors or chemical anchors.

350 Plugs

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

360 Anchors

Types

Expansion: For use in substrate strong enough to resist forces generated by expansion of anchor.

Adhesive or chemical

For use in substrate where expansion of anchor would fracture substrate.

For use in irregular substrate where expansion anchors cannot transfer load on anchor.

Cavity: For use where the anchor is retained by toggles of the plug locking onto the inside face of the cavity.

370 Wood screws

Type

Wood screws (traditional pattern).

Standard: To BS 1210.

Wood screws.

Pattern: Parallel, fully threaded shank or twin thread types.

Washers and screw cups: Where required are to be of same material as screw.

380 Miscellaneous screws

Type: To suit the fixing requirement of the components and substrate.

Pattern: Self-tapping, metallic drive screws, or power driven screws.

Washers and screw cups: Where required to be of same material as screw.

390 Adhesives

Standards

Hot-setting phenolic and aminoplastic: To BS 1203.

Thermosetting wood adhesives: To BS EN 12765.

Thermoplastic adhesives: To BS EN 204.

410 Powder actuated fixing systems

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

Execution

610 Fixing generally

Integrity of supported components: Select types, sizes, quantities and spacings of fixings, fasteners and packings to retain supported components without distortion or loss of support.

Components, substrates, fixings and fasteners of dissimilar metals: Isolate with washers/ sleeves to avoid bimetallic corrosion.

Appearance: Fixings to be in straight lines at regular centres.

620 Fixing through finishes

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

630 Fixing packings

Function: To take up tolerances and prevent distortion of materials and components.

Limits: Do not use packings beyond thicknesses recommended by fixings and fasteners manufacturer.

Locations: Not within zones to be filled with sealant.

640 Fixing cramps

Cramp positions: Maximum 150 mm from each end of frame sections and at 600 mm maximum centres.

Fasteners: Fix cramps to frames with screws of same material as cramps.

Fixings in masonry work: Fully bed in mortar.

650 Nailed timber fixing

Penetration: Drive fully in without splitting or crushing timber.

Surfaces visible in completed work: Punch nail heads below wrot surfaces.

Nailed timber joints: Two nails per joint (minimum), opposed skew driven.

660 Screw fixing

Finished level of countersunk screw heads

Exposed: Flush with timber surface.

Concealed (holes filled or stopped): Sink minimum 2 mm below surface.

670 Pelleted countersunk screw fixing

Finished level of countersunk screw heads: Minimum 6 mm below timber surface.

Pellets: Cut from matching timber, match grain and glue in to full depth of hole.

Finished level of pellets: Flush with surface.

680 Plugged countersunk screw fixing

Finished level of countersunk screw heads: Minimum 6 mm below timber surface.

Plugs: Glue in to full depth of hole.

Finished level of plugs: Projecting above surface.

690 Using powder actuated fixing systems

Powder actuated fixing tools: To BS 4078-2 and Kitemark certified.

Operatives: Trained and certified as competent by tool manufacturer.

700 Applying adhesives

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

Support and clamping during setting: Provide as necessary. Do not mark surfaces of or distort components being fixed.

Finished adhesive joints: Fully bonded. Free of surplus adhesive.

Ω End of Section

Z22 SEALANTS

Products

310 Joints

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

Execution

610 Suitability of joints

Presealing checks

Joint dimensions: Within limits specified for the sealant.

Substrate quality: Surfaces regular, undamaged and stable.

Joints not fit to receive sealant: Submit proposals for rectification

620 Preparing joints

Surfaces to which sealant must adhere

Remove temporary coatings, tapes, loosely adhering material, dust, oil, grease, surface water and contaminants that may affect bond.

Clean using materials and methods recommended by sealant manufacturer.

Vulnerable surfaces adjacent to joints: Mask to prevent staining or smearing with primer or sealant.

Backing strip and/ or bond breaker installation: Insert into joint to correct depth, without stretching or twisting, leaving no gaps.

Protection: Keep joints clean and protect from damage until sealant is applied.

630 Applying sealants

Substrate: Dry (unless recommended otherwise) and unaffected by frost, ice or snow.

Environmental conditions: Do not dry or raise temperature of joints by heating.

Sealant application: Fill joints completely and neatly, ensuring firm adhesion to substrates.

Sealant profiles

Butt and lap joints: Slightly concave.

Fillet joints: Flat or slightly convex.

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

Manufacturer: Obtain from only one manufacturer – Contractor to submit proposals.

Selected manufacturer: Submit details before commencement of powder coating including:

Name and contact details.
Details of accreditation schemes.
Technical data of product including current Agrément certificates.

210 Working procedures

Comply with the following standards

Aluminium components: BS EN 12206-1.

Steel components: To BS EN 13438.

Safety standards: British Coatings Federation publication Code of safe practice: Powder coating. Application of coating powders by electrostatic spraying.

Health and safety guidance: Health and Safety Executive publication Reducing risk associated with using coating powders - employers.

220 Powder-coating applicators

Applicator requirements

Approved by powder-coating manufacturer

Currently certified to BS EN ISO 9001

Comply with quality procedures, guarantee conditions, standards and tests required by powder-coating manufacturer

Selected applicator: Submit details before commencement of powder coating, including:

Name and contact details.
Details of accreditation schemes.

225 Guarantees

Powder-coating manufacturer and applicator guarantees

Submit sample copies before commencement of powder-coating

Submit signed project specific copies on completion of work

230 Control samples

Prior to ordering materials for the works, obtain approval of appearance for

Powder-coated samples: Of various grades and forms of background metal to be used, showing any colour, texture and gloss variation.

Fabrication samples: Showing joint assembly, how powder-coating is affected and how any cut metal edges are finished and protected.

Where manual application is required, controlled samples should be coated and inspected for colour and gloss stability.

Samples to include the following information:

Product reference.

Colour.

Reference number.

Name.

Gloss level.

240 QUALICOAT quality assurance system

Requirement: Powder and coating application to the following designated components is to be tested and approved in accordance with the QUALICOAT specification 'QUALICOAT Specifications 2024 Specifications for a quality label for liquid and powder coatings on aluminium for architectural applications Master version (V01b)'.

250 Component design

Condition of components to be powder-coated

To comply with relevant recommendations of BS 4479-1, BS 4479-3 and BS 4479-4

Of suitable size to fit plant capacity

Of suitable thickness to withstand oven curing

310 Pretreatment of aluminium components

Condition of components to be pretreated

Free from corrosion and damage

All welding and jointing completed and finish off as specified

Free from impurities including soil, grease and oil

Suitable for and compatible with the pretreatment process

Conversion coating requirements

Chromate system: BS EN 12206-1.

Chromate-free system: To BS EN 12206-1. Submit details before using.

Rinsing requirements: Use demineralized water. Drain and dry.

320 Pretreatment of steel components

Condition of components to be pretreated

Free from corrosion and damage

All welding and jointing completed and finish off as specified

Free from impurities including soil, grease and oil

Suitable for and compatible with the pretreatment process

Conversion coating requirements: To BS EN 13438.

Rinsing requirements: Use demineralized water. Drain and dry.

330 Pretreatment for protection in aggressive environments

Minimum thickness of 60 micrometres across significant and/ or primary surfaces

All cut edges, drilled holes and mitres to be fully sealed

Cleaning and maintenance: Carried out once every three to 12 months (dependent on proximity to pollutant).

430 Extent of powder coatings

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

Surfaces to receive powder coatings: Free from dust or powder deposits.

Powder colours: Obtain from one batch of one manufacturer.

Commencement of powder-coating: To be continuous from pretreatment.

Components to be installed on site in order of application.

Jig points: Not visible on coated components.

Curing: Controlled to attain metal temperatures and hold periods recommended by powder-coating manufacturer.

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.

Overcoating of components: Not acceptable.

440 Performance and appearance of powder coatings

For aluminium components: BS EN 12206-1

For steel components: BS EN 13438

Visual inspection after powder-coating: Significant surface viewing distances to be as specified in the relevant Standard, unless specified otherwise.

Colour and gloss levels: To conform with approved samples.

450 Aluminium alloy fabrications

Units may be assembled

Before powder-coating

From components powder-coated after cutting to size

Where approved, from components powder-coated before cutting to size

Exposure of uncoated background metal: Not acceptable.

Assembly sealants: Compatible with powder coatings. Obtain approval of colour if sealants are visible after fabrication.

460 Steel fabrications

Unit assembly: Wherever practical, before powder-coating.

Exposure of uncoated background metal: Not acceptable.

Assembly sealants: Compatible with powder coatings. Obtain approval of colour if sealants are visible after fabrication.

470 Fixings

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

Before delivery to site: Check all components for damage to powder coatings. Replace damaged components.

Site damage: Submit proposals for repair or replacement.

510 Protection

Powder-coated surfaces of components: Protect from damage during handling and installation, or by subsequent site operations.

Protective coverings must be

Resistant to weather conditions

Partially removable to suit building in and access to fixing points

Protective tapes in contact with powder coatings must be

Low tack, self adhesive and light in colour

Applied and removed in accordance with tape and powder-coating manufacturers' recommendations. Do not use solvents to remove residues as these are detrimental to the coating

Inspection of protection: Carry out monthly. Promptly repair any deterioration or deficiency.

520 Protection in hazardous locations

Minimum thickness of 60 micrometres across significant and/ or primary surfaces

All cut edges, drilled holes and mitres to be fully sealed

Cleaning: Carried out once every three to twelve months (dependent on proximity to pollutant).

535 Documentation

Submit the following information for each batch of powder-coated components

Supplier.

Trade name.

Colour.

Type of powder.

Method of application.

Batch and reference number.

Statutory requirements.

Test certificates.

Maintenance instructions.

540 Completion

Protection: Remove any protective coverings.

Cleaning and maintenance of powder coatings: Carry out in accordance with procedures detailed in powder-coating manufacturer and applicator guarantees.

Ω End of Section

Specification created using NBS Chorus