# 1737 Abraham Moss School

PLANNING AND
BUILDING CONTROL
24 JUL 2012

**06 July 2012**

**This document includes:**

| Code | Section | Revision | Dated |
|---|---|---|---|
| L10 | Windows/ rooflights/ screens/ louvres | | |

# L
# Windows/Doors/Stairs

# L10
# Windows/ rooflights/ screens/ louvres

## L10 Windows/ rooflights/ screens/ louvres

To be read with Preliminaries/ General conditions.

### GENERAL

110 EVIDENCE OF PERFORMANCE
- Certification: Provide independently certified evidence that all incorporated components comply with specified performance requirements.

110A BREEAM REQUIREMENT
- Global warming potential of insulants used in sandwich panels or other application within window installation;
  Performance: GWP of insulant to be 5 or less.

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

120 SITE DIMENSIONS
- Procedure: Before starting work on designated items take site dimensions, record on shop drawings and use to ensure accurate fabrication.
- Designated items:
  All Window Types.

140 CONTROL SAMPLES
- Procedure:
  - Finalise component details.
  - Fabricate one of each of the following designated items as part of the quantity required for the project.
  - Obtain approval of appearance and quality before proceeding with manufacturer of the remaining quantity.
- Designated items:
  Framing to Integrated window, standard window and curtain wall frame..

## PRODUCTS

330C ALUMINIUM WINDOWS WINDOWS - ALL FLOORS

- Window types; composite fixed light, side hung and top hung opening windows, complete assemblies coupled.
- Manufacturer: Kawneer UK Ltd. Astmoor, Runcorn, Cheshire WA71QQ and fabricated by Kawneer authorised dealers .
- Product reference: AA4001Thermally Broken window system .
- Standards:
  BS 1474 - 1987 Specification for aluminium alloys
  BS EN 12020 Extruded aluminium profiles
  BS 3987 -1991 Specification for anodic coatings
  BS 6496 -1984 Specification for powder organic coatings
  BS 4873 - Specification for Aluminium Alloy Windows
  BS 6375 Part 1 - Classification for Weathertightness
  BS 6375 Part 2 - Classification for Operation and Strength
  BS EN ISO 10077 Part 1-2 - Thermal Performance for Windows, Doors and Shutters. calculation of Thermal Transmittance.
  IFT Guideline WA-01 eng/2 - Uf-Values for thermal break metal profile systems. IFT Rosenheim.
  BS EN 12207:2000 Class 4: Air Permeability
  BS EN 12208:2000 Class 9a: Watertightness
  BS EN 12210:2000 Class C4: Wind Resistance Test
  ISO 9001:2000 - Quality Manageemnt Systems
  BS 7950; Security tested
  Glazing Gaskets compliant with BS 4255 Part 1: 1986 & ASTM C509-94
  The NPL Wall Guarded hot box to European Standard EN 12567-1
- Exposure Category: 2400pa
  Weather Performance:
  BS EN 12207:2000 Class 4; Air permaeability test
  BS EN 12208:2008 Class 9a: watertightness
  BS EN 12210:20000 Class AE2400: wind resistance test

- Finish as delivered: All exposed surfaces shall be polyester powder finish in Kawneer Permacover (colour from full available colour range) to B.S. 6496: 1984. - Kawneer Permacover colour shall be obtained by first giving all aluminium a full 7 stage chromate conversion coating to achieve maximum exterior durability and carry a 30 year guarantee .
  - Colour 1: Window frames to be RAL 7012 (Dark Grey), matt finish (Syntha Pulvin colour swatch
  - Colour 2: N/A
  - Inside Section Colour: RAL colour 7012
  - Minimum Film Thickness: 40 micron
- Glazing details: All as clause L40. Extruded clip-in bead with EPDM extruded gaskets, internally glazed, 4 edge cover .
  Window Performance: The completed window project shall be capable of meeting the proposed requirements of Part L2 of the Building Regulations achieving 1.67 W/m2K area weighted average for the whole building). The performance of the window assembly is to be a minimum as stated below when testing to BS 5368 part 2 : 1986. Security Standard – BS7950 where applicable.
  - Beading: Internal .
- Ironmongery/ Accessories: All ironmongery must comply with the specification and meet the requirements of the end user.
  **All floors with opening window vents lower than 2000mm** ;
  Top hung and side-hung vents to be hung on friction stays, multi-point locking system with locking handles and fixed restrictor stays (maximum 100mm clear opening), with

| | |
|---|---|
| Espagnolett Locking Handle | Part Number – 8000-433 / 8000-434 |
| Security Espagnolette Locking Gear- | Part Number - Dependent upon vent size |
| Standard Shoot Bolt Locking Gear - | Part Number – 8000-471/8000-472 |
| Security Shoot Bolt Locking Gear - | Part Number – 8000-471/8000-472 |
| Corner Driven Locking Gear - | Part Number – 8000-413 |
| Heavy Duty Friction Stays - | Part Numbers – Various –Dependent vent size. |
| Fixed restrictor stays. | Part Number – 690-549 (maximum 100mm clear opening) |

  **These windows must comply with security standard – BS7950** .
  Trickle Ventilation only as required by Mechanical Engineer; if required to be located within the window head. Fixed restrictor stays.

**All floors with opening window vents higher than 2000mm;** Top hung and side hung vents to be hung on friction hinges and folding cam stays opened by means of a pole (widest possible opening required). .

- General requirements for Ironmongery/ Accessories:
  - Friction stays, sliding tracks, hinges and handles must be sourced from one single manufacturer and/or must have been developed and engineered specifically with the proposed window system in mind.
  - Opening handles are to be single handle incorporating a multipoint locking mechanism (espagnolette mechanism) fully concealed within the sash with only one handle permitted per window: to be located at bottom of sash on side opening lights. - Push trickle vent fitted in side frame on hinge side to opening lights in naturally ventilated occupied rooms .
- Tamper-proof restrictor stays: To acheive 100mm clear casement opening. Wiindow restrictors shall be fitted with anti tamper fixings or designed to avoid the possibility of unauthorised disassembly and deactivation. Hook type flip off fittings / brackets on a restrictor slider are not acceptable. For maintenance access only, the anti tamper fixings may be removed to allow the casement to open fully. Windows that do not require restrictors as above include any that form part of an emergency escape, Velux type roof lights or inward opening, bottom hung hopper types (MCC DIN 087) .
- Security:
  - Window-sets to be security enhanced to BS7950 or LPS 1175 SR2 or 3 and shall generally conform to BS 4873 for aluminium; also to comply with BSI PAS 23, manufacturer to have ISO 9001:2000 accreditation - Hardware to be from a SBD (Secured by Design) accredited ironmongery supplier
- Construction: Mechanical corner cleats, crimped and bonded with 2 part bonding agent together with stainless steel corner brace
- Airtightness; as clause 695
- Fixing: As recommended by the manufacturer .

510 GLAZED WOOD SCREENS

- Location: Internal - Non Fire rated.
- Timber: Generally to BS EN 942.
  - Species: Softwood as table NA1.
  - Appearance class: J10.
  - Moisture content on delivery: 9-13%.
- Panels: N/A.
- Assembly adhesive: PVAC to BS EN 204, Class D4 .
- Joinery workmanship: As section Z10.
- Finish as delivered: Prepared and primed as section M60.
- Glazing details: fix as directed in appropriate L40 specification relevant to the glazing to the particular screen.
- Special features/ Other requirements: None.
- Fixing: Screw fixed and pelleted as clause 780.

510A GLAZED WOOD SCREENS

- Location: Internal - 30 minute Fire rated.
- Timber: Generally to BS EN 942.
  - Species: Hardwood as table NA2 min density 660kg/m3.
  - Appearance class: J10.
  - Moisture content on delivery: 9-13%.
- Panels: N/A.
- Assembly adhesive: PVAC to BS EN 204, Class D4 .
- Joinery workmanship: As section Z10.
- Finish as delivered: Prepared and primed as section M60.
- Glazing details: fix as directed in appropriate L40 specification relevant to the glazing to the particular screen.
- Special features/ Other requirements: None.
- Fixing: Screw fixed and pelleted as clause 780.

510B GLAZED WOOD SCREENS

- Location: Internal - 60 minute Fire rated.
- Timber: Generally to BS EN 942.
  - Species: Hardwood as table NA2 min density 660kg/m3.
  - Appearance class: J10.
  - Moisture content on delivery: 9-13%.
- Panels: N/A.
- Assembly adhesive: PVAC to BS EN 204, Class D4 .
- Joinery workmanship: As section Z10.
- Finish as delivered: Prepared and primed as section M60.
- Glazing details: fix as directed in appropriate L40 specification relevant to the glazing to the particular screen.
- Special features/ Other requirements: None.
- Fixing: Screw fixed and pelleted as clause 780.

650A METAL LOUVRES INTEGRATED INTO WINDOW FRAME, HIGH WEATHERABILITY

- Manufacturer: RENSON Fabrications LTD, Fairfax Unit 1-3, Bircholt Road, Parkwood Industrial Estate, Kent ME15 9SF
  Tel. 01622 754123 Fax 01622 689478 01622 689479 info@rensonuk.net www.renson.net.
  - Product reference: GLAZED IN LOUVRE NR. 424.
- Material: Aluminium.
  - Finish as delivered: Powder coated.
  - Colour: To match surrounding window (RAL 7012)
- Fire resistance rating: 30 minutes where shown on elevations and fire plans.
- Number of louvre banks: Refer to window elevation drawings.
- Louvre blade pitch and angle: 33.3 pitch, 43% physical free area, K-factor 66.1 (with mesh).
- Watertightness testing; Class A to EN 13030
- Blanking panels: Insulated blanking panels as required.
- Accessories/ Other requirements: stainless steel 304 insect screen (2.3mm x 2.3mm), water channel at base..
- Fixing: As double glazing, EXTERNALLY BEADED into frame, as recommended by manufacturer.

695 AIRTIGHTNESS EPDM FACADE MEMBRANE SEALING TO ALL WINDOWS

- Manufacturer: Adshead Ratcliffe, Adshead Ratcliffe & Co. Ltd. Derby Road, Belper, Derbyshire, DE56 1WJ, Adshead Ratcliffe & Co. Ltd. UK Tel: 01773 826661, Web: www.arbo.co.uk.
  - Product reference: ARBO EPDM Systems, 0.75mm thickness; Arbo EPDM Facade Membrane or Arbo Facade Membrane BS-1 with addition of Butyl strip for easy application to frame, .
- Type: epdm rubber flashing to full perimeter of windows, factory bonded to aluminium frame extrusion, all as manufacturer's current technical detail recommendations.
- Application sequence; cill, jambs, head
- Minimum overlap; minimum recommended overlap to window - 20mm, minimum recommended overlap to substrate - 100mm
- Finish as delivered: n/a.
  - Colour: as standard.
- Accessories/ Special features: solvent free adhesives; Arbo SA adhesive, Arbo membrane Adhesive, Arbo Primer 2650 for porous sub-strates.
- Fixing: sealant gun and ARBO roller to improve contact and eliminate air pockets, lap and patch corners where necessary.

## 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.

730 PRIMING/ SEALING

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

740 CORROSION PROTECTION
- Surfaces to be protected: aluminium alloy components in direct contact with preservative 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: To BS 8213-4.

765 WINDOW INSTALLATION GENERALLY
- Installation: Into prepared openings.
- Gap between frame edge and surrounding construction:
  - Minimum: 8mm.
  - Maximum: 10mm.
- Distortion: Install windows without twist or diagonal racking.

770 DAMP PROOF COURSES IN PREPARED OPENINGS
- Location: Ensure correct positioning in relation to window frames. Do not displace during fixing operations.

780 FIXING OF WOOD FRAMES
- Standard: As section Z20.
- Fasteners: Stainless steel wood screws to penetrate minimum 25mm into substrate .
  - Spacing: When not predrilled or specified otherwise, position fasteners not more than 150 mm from ends of each jamb, adjacent to each hanging point of opening lights, and at maximum 450 mm centres.

782 FIXING OF ALUMINIUM FRAMES
- Standard: As section Z20.
- Fasteners: Stainless steel screws and lugs in accordance with the detail working drawings.
  - Spacing: When not predrilled or specified otherwise, position fasteners not more than 250 mm from ends of each jamb, adjacent to each hanging point of opening lights, and at maximum 600 mm centres.

790 FIRE RESISTING FRAMES
- Gap between back of frame and reveal: Completely fill with tightly packed mineral wool and seal with intumescent mastic.

810 SEALANT JOINTS
- Sealant:
  - Manufacturer: Adshead Ratcliffe.
    Product reference: Arbosil 1096 low modulus silicone sealant.
  - Colour: to match window aluminium coating.
  - 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.