

## 14 ALUMINIUM DOORS AND WINDOWS

### 14.1 Aluminium Doors and Windows

14.1.1 All windows and doors are to be constructed by approved specialist suppliers of medium section to the particular requirements noted on the drawings as to weight and profile. All sections shall generally conform to relevant British Standard Specifications.

14.1.2 All frames should be made to fit the actual openings with a 3 mm clearance all around. Discrepancies in overall width or height exceeding 3 mm will not be allowed and the frames will be rejected in such cases. Any small discrepancies shall have the gaps suitably backed and filled with gun-applied water repellent mastic sealant

14.1.3 All sealants used in the assembly of, and in the fixing of cladding and window framing, shall be non-setting to allow thermal movement without detriment to those joint sealants used for peripheral caulking and shall be one part silicone sealant and shall conform to BS 4245. All spliced joints between mullions should be sealed with an approved silicone product, compatible with other sealants and packing used.

14.1.4 The auxiliary components in sashes as locks, pivots, sliding gear etc. shall comprise of stainless steel or resisting materials.

14.1.5 The tolerance is to be as follows:

- |                                   |              |
|-----------------------------------|--------------|
| a) Inside width of frame          | 3 mm Maximum |
| b) Inside height of frame         | 3 mm Maximum |
| c) Depth of frame                 | 2 mm Maximum |
| d) Opposite side, Inside distance | 2 mm Maximum |

14.1.6 The performance - associated requirements are

- (1) Strength (resistance to wind pressure and other forces applied in use)
- (2) Air tightness or ability to cut out drafts.
- (3) Water - tightness against rain or dew.
- (4) Sound arresting effect to (shut off noise from outside as well as inside).

14.1.7 All surfaces shall have an anodized protective surface layer of minimum 25 Micron thickness.

14.1.8 Glazing shall be done as specified by the Consultant. Glass shall be tinted, or as specified in the drawings. Thickness shall be according to the size of panels as given hereunder.

Not exceeding 1 sq. ft.	2mm
Exceeding 1 sq. ft. but not exceeding 2 sq. ft.	3mm
Exceeding 2 sq. ft. but not exceeding 4 sq. ft.	4mm
Exceeding 4 sq. ft. but not exceeding 6 sq. ft.	5mm
Exceeding 6 sq. ft.	6mm

- 14.1.9 Prior to import and / or purchase of the Aluminium Doors and Windows, the relevant specification of the manufacturer, along with samples has to be submitted to the Consultant for approval. This clause shall not be contravened on any account.
- 14.1.10 The fitting shall be done with utmost care not to spoil the finishes given by the manufactures, and any cleaning done shall be done with cleaners etc. as specified by the Manufactures.
- 14.1.11 The Contractor shall provide all items, articles, materials, operations, mentioned, or scheduled on the drawings, including all the labour materials, including fixing devices, equipment and incidentals necessary as required for their completion.
- 14.1.12 The Contractor shall submit shop drawings and/or samples of each type of doors, windows, railings and other items of metal work to the Consultant for approval. The shop drawings shall show full size sections of doors and windows etc. thickness of metal, details of construction hardware as well as connection of windows, doors and other metal work to adjacent work.
- 14.1.13 Aluminium doors and shutters shall be manufactured by an approved manufacturer and shall be of sections, sizes combination and details shown on the drawings. The frame member shall be one piece, corners shall be electrically welded, ground smooth and true and glazing bare shall be threaded or interlocked as approved by the Consultant.
- 14.1.14 Glazing for doors and windows shall be of specified thickness and of approved quality and shall conform to specification of glazing. Fixing for glazing shall be done with aluminium Snap-On beading as per detail drawing and instructions. Necessary continuous rubber gaskets of approved make shall be provided.
- 14.1.15 Colour for doors and windows shall be approved by the Consultant.

## 14.2 Aluminium louvers

- 14.2.1 Samples shall be submitted for approval.
- 14.2.2 All metal louvers shall be installed according to manufacturer's instructions.
- 14.2.3 All units shall be installed plum, well fitted and securely attached to supporting frames.

## 14.3 Top hung windows, ventilators and side hung doors

- 14.3.1 All windows and doors should be weather stripped. The weather protection should be achieved by a positive compressive action against the section and should not depend on external contact. At every contact between two profiles two weather stripping sections should be provided to complete weather protection.
- 14.3.2 The bottom section for hinges must be capable of being adjusted vertically if necessary. The gap between section and the floor should be covered with a pair of special splay-tube sections.
- 14.3.3 The shutter sections for both windows as well as doors shall be hollow section type and shall be overall size 57 x 45 mm and the door sections shall be overall size 81 x 45 mm (including flanges).
- 14.3.4 The shutters of the windows and doors should be assembled with stainless steel pins and nylon washers. Handles shall be anodised aluminium finished to match the aluminium sections and mounted with self lubricating nylon washers.
- 14.3.5 A mortice cylinder rim automatic deadlock of high quality with double pin tumbler shall be used.

14.3.6 Windows shall have anodised aluminium handles, colour as framing and a latching mechanism securing the shutter to the frame both at the top and bottom.

14.3.7 Required fittings;

14.3.7.1 Single action door closer concealed in the head bar of the outer frame and mounted on an adjacent pivot at the threshold and deadlock fitted.

14.3.7.2 The left hand leaf of double doors with flush bolts at head and sill with deadlock fitted to the right hand leaf.

14.3.7.3 Escape doors to have panic bolts assembly with vertical elements concealed in the sill and door closer as in 13.3.7.1.

#### 14.4 Installation

14.4.1 Aluminium work shall be installed adjusted and glazed by experienced workmen all in accordance with the manufacturer's installation instructions and in full conformity with the approved shop drawings, samples and other submitted data. Under no circumstances shall materials be installed on surfaces that contain condensation, dirt, grease or other foreign encountered materials that would hinder or prevent proper installation and functioning for the use intended.

14.4.2 Aluminium work shall be carefully and accurately assembled with proper and approved provision for contraction and expansion and set in correct locations as per approved detailed shop drawings, all level, square, plumb and aligned with other work. All joints between framing and structural building shall be sealed in order to be watertight and weatherproof and to satisfy all other requirements of the Consultant.

14.4.3 Frames shall be designed and manufactured with a maximum 2.5mm tolerance around the opening in the structure. These joints are to be finished by applying an approved sealant into a polystyrene foam backing strip.

14.4.4 All aluminium works are to be fully protected for the duration of the contract from damage by other trades. The Consultant shall approve the method of protection.

14.4.5 If for any reason final finishes become scratched, abraded or damaged during transport, delivery, storage or erection, it shall be the Contractor's responsibility to remove or repair those defective areas or components as directed and to the complete satisfaction of the Consultant.

14.4.6 Repair work shall be identical to the manufacturer's applied finish with regard to gloss, finish and visual appearance. Field touch up of painted aluminium is permitted only with the written permission of the Consultant. Where touch up is not an authorised means of repair the damaged materials must be replaced by new.

14.4.7 Upon completion of work all protective coverings from all exposed surfaces shall be removed. All surfaces shall be cleaned using soap or detergents as recommended by the aluminium manufacturers to remove sealants, discolouration and any other foreign material. Defection of any type determined by the Consultant shall be repaired at the Contractor's expense.

14.4.8 Extreme care shall be taken when cleaning the exterior portion to protect all other adjacent works.

#### 14.5 Sealing joints

14.5.1 The Contractor shall ensure that joints are dry and remove all loose material, dust and grease.

14.5.2 Joints shall be prepared in accordance with sealant manufacturer's recommendations using recommended solvents and primers where necessary.

- 14.5.3 Adjoining surfaces which would be impossible to clean if smeared with sealant shall be masked.
- 14.5.4 Backing strips shall be inserted in all joints to be pointed with sealant. When using backing strips, the Contractor shall not leave gaps and shall not reduce depth of joint for sealant to less than the minimum recommended by the manufacturer.
- 14.5.5 Cavities shall be filled and jointed with sealant in accordance with the manufacturer's recommendations. Sealant shall be tooled to form a smooth flat bead.
- 14.5.6 Excess sealant shall be removed from adjoining surfaces using cleaning materials recommended by the sealant manufacturer, and shall be left clean.

#### 14.6 Glass installation

- 14.6.1 Workmanship shall generally be in accordance with CP 152 and respective British Standards.
- 14.6.2 The glass is to be delivered to the site with adequate protection to prevent damage and where possible it is to be fixed in position immediately after delivery. When fixed the Contractor is to take all necessary precautions to prevent damage during succeeding building operations and will be entirely responsible for the replacement of any broken or damaged glass at contractor's own cost.
- 14.6.3 The Contractor is to be solely responsible for determining the exact sizes of glass required, including a tolerance of 2 mm to each edge and he is recommended to check the necessary dimensions on site.
- 14.6.4 No glazing is to be carried out until rebates have been painted with primer. Glazing beads as applicable are also to be primed before fixing.
- 14.6.5 All mastic is to be neatly struck off to agree exactly with site lines inside and out.
- 14.6.6 Rates are to include for all necessary springs, clips, setting blocks, location blocks and distance pieces and for taking off and later re-fixing loose beads
- 14.6.7 Glass apertures in timber doors are to be bedded in chamois leather glazing strip, black ribbon velvet or P.V.C. glazing strip to the approval of the Consultant.