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## 11.00 Doors & Hardware

### 11.01 Aluminium Framed & Glazed Doors

External and internal aluminium framed glazed doors shall be in accordance with GU Standard Detail Drawing No. GSD-401 unless agreed otherwise in writing by CLF.

Door leaves shall have a mid rail not less than 200mm wide, and shall be glazed with safety glass.

Framing shall have an anodised finish not less than 20 microns thick to both doors and frames.

All building entry doors shall be glazed doors.

Doors leaves exceeding standard sizes must be fitted with appropriate hinges, closers, etc. to accommodate the door weight and to prevent movement and misalignment. Preference is for a single door leaf with a side light rather than a pair of doors.

Double action swing doors shall **not** be permitted.

Sliding doors shall be used for all main exit/entry doors fitted with an automatic opening/closing mechanism.

At least one external door to each building should be fitted with an approved automatic opening and closing device. This door or doors shall also be linked into the Electronic Access Control system.

The jambs and heads of aluminium door frames shall be reinforced to avoid twisting and misalignment of the door leaf which will prevent locking, where door leaves exceed standard sizes and where door closers or magnetic locking devices are fitted to the door head.

Frameless hinged and sliding doors are permitted in certain circumstances, however any proposal to use this type of door must be presented to CLF for approval, particularly where access control is an issue. Any such doors must have a solid and non transparent contrasting line full width of the door panel/s as previously outlined in **Section 9 Clause 9.05**.

### 11.02 External Doors

All doors in the external building façade other than entry doors, such as to plant rooms, service ducts, fire egress etc. shall be aluminium framed with aluminium faced plywood or aluminium louvre infill panels as appropriate for the application. All aluminium shall have an anodised finish.

Timber doors shall not be used unless they are fully protected from the weather by building overhangs and the like. Any timber doors shall be solid core with marine grade plywood facing both sides, edge stripped all round with hardwood. Glue used in timber doors shall be Type A bond 'waterproof' glue, **not** 'water resistant' glue.

Timber doors shall be finished with an approved full gloss enamel paint system.

All external doors shall be fitted with seals as necessary to prevent ingress of water, dust and insects to the building.

Louvre panels in external doors shall be fully insect screened.

### 11.03 Internal Doors

Internal doors other than aluminium glazed doors, shall be 40mm minimum thick plywood faced solid core doors, finished in Tasmanian Oak Veneer with 12mm thick matching mitred edge strips all round. Doors shall have an approved 'clear' polyurethane finish.

Doors in high traffic areas and to lecture theatres, seminar rooms and other teaching spaces, and where allowed by fire regulations, shall have a viewing panel in accordance with the GU Standard Detail Drawing No. GSD-400. Provide a viewing panel to all laboratory doors, including fire doors, to comply with the requirements of AS 2982.

Viewing panels in laboratory doors shall have '3M Ultra 400 Series' security film applied as previously described in Clause 10.09 of **Section 10 - Internal Walls & Partitions**.

Air grilles may be installed in doors only where their installation does not affect acoustic and physical security. Where installed, air grilles shall be fixed with concealed screw fixings on the inside face. (**Note:** Doors to Disabled toilets and doors which provide access to laboratories, are not to be fitted with an air grille).

Door sizes shall generally be of a standard size not less than 2040 x 920mm wide, unless nominated otherwise or required to be larger for particular purposes or to meet statutory requirements.

All doors to plant rooms, seminar rooms and laboratories, and other doors as required by the Space Description Forms, shall generally be single leaf of 1000mm minimum width, and shall open outwards taking care not to swing across traffic paths. Where pairs of doors are required, one leaf shall be of the minimum width nominated.

Doors to cleaners' rooms, service ducts and small storage cupboards shall also open outwards.

Doors to fully enclosed sanitary compartments for people with disabilities shall comply with AS 1428.1 and shall open outward.

#### **11.04 Fire Doors**

Fire doors shall be provided to satisfy the requirements of the BCA, and shall be finished as previously nominated for either internal or external timber doors.

The use of fire doors in lieu of standard timber doors to provide access to and from spaces which experience high levels of traffic, shall be avoided wherever possible, however if this cannot be avoided then doors shall be held open by magnetic hold-open devices interlinked with the Fire Alarm system.

#### **11.05 Frames**

All doors other than aluminium framed glazed doors and timber doors installed in glazed internal screens and partitions, shall be hung in a one piece fully welded metal door frame which shall fully wrap around sheet wall linings to both stud framed partitions and masonry walls. Frames to doors installed in in-situ concrete walls shall not wrap around the opening reveals.

All metal frames shall be securely fixed into the wall or partition opening, and fully grouted where in masonry walls or acoustically sealed to the partition framing.

Aluminium door frames shall be sufficiently rigid to avoid distortion by the door weight or the twisting action of the door closer.

Generally all door frames shall have three hinges per leaf with the middle hinge approximately 200mm below the top hinge. Doors with leaves 1000mm or greater in width shall have four hinges.

#### **11.06 Hinges**

Except for aluminium doors, all hinges shall be stainless steel, **screw-fixed** to door leaves and frames with stainless steel screws. Hinges shall be left unpainted.

Hinges generally shall be 'Lane', loose pin butt hinges, Catalogue No. 8580SS.

Outward opening doors shall have fixed pins and shall be 'Lane', Catalogue No. 8588SS.

Hinges for aluminium doors shall be 'McAllum A104' aluminium hinges.

### 11.07 Locks

Except where otherwise scheduled, the requirements for door locking are as follows;

- Mechanical locks/latches shall be 'Dorma ST9600' or 'Lockwood 3P70' dead latching series. All locks must be of the same manufacture, and mixing lock brands within the same building is not desirable. In refurbishment projects, the lock brand used must match the existing lock brand throughout the building;
- Locks shall be mounted such that the strike is 1000mm above finished floor level except where an indicator bolt is fitted to toilet entry doors.
- No locks are to be mounted in the bottom rails of doors.
- All locks shall have cams which prevent over 90° key rotation wherever possible.
- Doors to fire isolated stairs are to be fitted with 'Boyd Roller Bolts No. RB1/1' (stainless steel roller) to the top edge of -/120/30 fire doors in accordance with CSIRO Certificate of approval No. 192.

Electric locks shall be:

- Electric locks shall be '*Fail Safe*' or '*Fail Secure*' if on an external door and activated by the building Fire Alarm System, as determined by CLF. If the internal and external handles are secure, a key override must be installed on both sides, however if the inside handle is free and the outside handle is secure, a key override is to be installed on the outside only unless otherwise advised by the Security & Traffic Manager.
- Mortice locks and magnetic locks shall be as nominated in Appendix 1 of the '*Griffith University Electronic Security Systems Specifications & Installation Guidelines*'.

**Note:** Drop Bolts are not to be installed in the mid rails of aluminium doors.

Where electronic locks are installed, any required card readers shall be located so as to be accessible to people with disabilities, and where possible installed on a solid or sheeted walls and not on glass walls with thin (less than 75mm wide) aluminium mullions.

When installing electronic or magnetic locks, the Contractor shall provide the following for connection to the EAC system by an approved specialist Sub-Contractor;

- Conduit access to from the card reader position to an access point in the ceiling space.
- Conduit access from door frame head to ceiling space for magnetic locking devices.
- Conduit access from the electric locking power transfer device to an access point in the ceiling space.
- Conduit access from the hinge side to the lock side in all doors fitted with electric locking devices.
- Install suitable power transfer devices equivalent to 'Abloy 8810' at time of hanging the doors.
- Provide horizontal separation where a card reader is installed externally and internally on the same door to prevent electronic interference.

### 11.08 Door Furniture

Door furniture shall be Lockwood 1800/1900/70 Series' with SCP finish and 'Dalco 1353-04' offset D handles surface mounted to aluminium doors.

Push/pull plates and handles shall be stainless steel to GU Standard Detail Drawing No. GSD-400. All plates are to be glued and screwed with stainless steel countersunk head screws.

Fire egress doors from buildings and entry doors to laboratories, shall be fitted with approved strike shields to inhibit unauthorised access.

Door furniture for electronic doors shall have an LED indicator light to indicate status of lock i.e. Green – unlocked, Red – locked.

### **11.09 Door Closers**

Surface Mounted door closers shall be provided to entrance doors, external doors, internal doors from general office space to public corridors, lecture theatre doors and doors to all teaching spaces, plant rooms, toilets, air-locks and fire doors. Closers shall not be mounted on the outside face of the door leaf.

Closer type shall be 'Dorma TS 73' with hold open and delayed action controls for disabled access as directed. Non hold open door closers shall be provided between all air conditioned spaces and non-air conditioned spaces, except for individual staff offices. Non hold open door closers shall be provided for all electronically locked doors, unless specified otherwise by the Security & Traffic Manager. A mounting plate is to be used when mounting door closers on aluminium doors.

Care shall be taken to ensure that closers do not puncture wall linings when the door is opened.

When mounting door closers in conjunction with acoustic seals, provide suitable mounting packers to keep the arm of the door closer clear of the seal. In all cases screws are not to penetrate glazing beads or acoustic seals.

**Note:** All outward opening doors shall have parallel arms and inward opening doors shall be regular arms.

### **11.10 Electro Magnetic Hold-Open Devices**

Electro magnetic hold-open devices (EMHODs) as required shall be 'Dorma' type and be provided to all fire doors in high traffic areas and all fire isolated stairs used for circulation. These shall be activated by the Building Fire Alarm System, and be mounted at 1800mm above finished floor level near the leading edge of the door.

Where fitted to external doors, Electro magnetic hold-open devices will be linked to the EAC system for time controlled lock down of the building.

### **11.11 Kick Plates**

Kick plates, where required, e.g. toilets, shall be 0.9mm satin stainless steel, screw fixed with countersunk head screws. Where timber doors are subject to excessive damage from trolleys etc, the stainless steel kick plates shall be provided and shall extend to the top of the door furniture.

### **11.12 Door Stops**

To any door where the door may strike a wall, provide an aluminium and rubber door stop, floor/or wall mounted, in a position that will allow full access clear of door furniture.

### **11.13 Cabin Hooks**

Cabin Hooks shall be provided as required to doors without door closers.

### **11.14 Security Door Viewer**

Doors to meeting rooms, video conferencing rooms and other specialist spaces shall be fitted with a security door viewer reverse mounted for viewing into the space at 1500mm above the finished floor level.

### 11.15 Acoustic Seals

Where acoustic seals are required to doors to achieve the acoustic performance of the wall in which they are installed, these seals shall be fitted as follows;

- Seals to the bottom edge of the door shall be surface mounted and not rebated into the face of the door
- Where heavy duty acoustic seals are required to the door perimeter, the door frames shall have plain jamb and head sections and the seals shall be planted on the frame to form the door stops

Acoustic seals shall not be fitted to the bottom edge of doors to offices.

### 11.16 Automatic & Special Door Operating Systems

Automatic doors shall comply with the requirements of AS 5007-2007 Powered Doors for Pedestrian Access & Egress.

The manufacturer and installer shall supply documentation for the installation, technical data, acceptance tests, commissioning, operation, use and maintenance, including servicing and trouble shooting instructions in case of failure.

The operating mechanism shall be able to interface with electronic access and fire control systems. The door shall be compatible with a manual Request to Exit (REX) button and also have the provision for a dual input door override from both the REX button and the access control system. The rechargeable battery back-up module shall be self monitoring and capable of sustaining full operation of the door for a minimum of two (2) hours.

Proposed operating mechanisms shall be submitted to CLF for examination and approval.

Refer to Section 2.00 Clause 2.05 for details of the special electric operating system required to the PWD toilet on the main entry level of each building.

### 11.17 Keying System & Keys

Only master keying shall be used. Maison keying will not be approved.

The lock/hardware schedule will be prepared by the architect in consultation with the Superintendent as per the GU Key Control Policy.

Construction cylinders will be used during construction of any new buildings or alteration works.

At practical completion of the construction and before handover to GU, the construction cylinders shall be removed and replaced with barrels and keys to one of the following University Restricted series:-

<b>Nathan</b>	Abloy Pro-tec profile
<b>Mt Gravatt</b>	Abloy Pro-tec profile
<b>Logan</b>	Abloy Disc Pro profile
<b>Qld Conservatorium Griffith University</b>	Abloy Pro-tec profile
<b>Queensland College of Art South Bank</b>	Abloy Pro-tec profile
<b>Gold Coast</b>	Abloy Pro-tec profile

The Contractor shall source all final keys and barrels from the University's Locksmith, John Barnes & Co.

The standard number of keys to be cut is to be set out in the Lock Schedule.

All keys shall be stamped with a continuous numbering system for that campus by the lock cylinder supplier. These numbers are to be entered on to the Lock Schedule.