

0455P ASSA ABLOY DOOR HARDWARE

Branded worksection

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The *Template* has been incorporated into the ASSA ABLOY Openings Studio Program. Projects with door hardware schedules documented by ASSA ABLOY specifiers will include a modified version of this *Template* and provide a project specific specification and detailed door-by-door hardware schedules, based on the project's specific drawings and requirements. For projects not documented by ASSA ABLOY, the designer may edit the *Template* by filling out the required schedules directly.

Worksection abstract

This worksection *Template* is applicable to hardware associated with doors, including products branded ABLOY, ASSA ABLOY, Lockwood, Henderson and Yale.

Guidance text

All text within these boxes is provided as guidance for developing this worksection and should not form part of the final specification. This *Guidancetext* may be hidden or deleted from the document using the NATSPEC Toolbar or the hidden text *Hide* and *Delete* functions of your word processing system. For additional information visit FAQs at www.natspec.com.au.

Optional style text

Text in this font (blue with a grey background) covers items specified less frequently. It is provided for incorporation into *Normal* style text where it is applicable to a project.

Related material located elsewhere in NATSPEC

If a listed worksection is not part of your subscription package and you wish to purchase it, contact NATSPEC.

Related material may be found in other worksections. See for example:

- *0194p RAVEN door seals and window seals.*
- *0453 Doors and access panels.*
- *0454 Overhead doors.*
- *0527 Room dividers* for operable walls and folding doors.
- *0981 Electronic security.*

Documenting this and related work

You may document this and related work as follows:

- The selection schedules can be used to specify the quality and performance requirements of door hardware on the basis of room function so that a specialist door hardware consultant can prepare a complete door-by-door schedule listing each proprietary item for every door.
- Alternatively, the door-by-door schedule provided in **SELECTIONS** can be used to directly specify selected proprietary items with inherent quality or performance characteristics matching your requirements. Regardless of who prepares the door-by-door schedule, it should be read in conjunction with this worksection.
- Overhead doors often come supplied with their own standard proprietary hardware and this is specified in *0454 Overhead doors*. Any non-standard hardware should be specified here and listed in the *0454 Overhead doors*.
- **SELECTIONS.**
- Door seals are specified in *0453 Doors and access panels*.
- ASSA ABLOY partner with RAVEN and will include RAVEN door seals in project specific schedules.
- Consider detailing recesses for floor springs.
- Coordinate with electrical worksections for card key systems, electronic door or lock activating systems including door contacts, electric door strikes, and security hardware generally.
- In refurbishing or alteration work, existing hardware recovered from the premises may be suitable for re-use subject to certain conditions. Specify the conditions including testing, repairing, replacing damaged parts with matching or compatible components, cleaning and so on.

The Normal style text of this worksection may refer to items as being documented elsewhere in the contract documentation. Make sure they are documented.

Search acumen.architecture.com.au, the Australian Institute of Architects' practice advisory subscription service, for notes on the following:

Guarantees and warranties.

Specifying ESD

The following may be specified by retaining default text:

- Re-use of recovered hardware.

The following may be specified by including additional text:

- Recycled material content, e.g. steel, brass, aluminium.
- Selecting products, if chrome plated, using the trivalent instead of hexavalent process.
- Door closers for self-closing doors to minimise air leakage.
- Selecting durable products for low maintenance and to extend material/product life cycle.
- Selecting electronic access control products using reduced energy in operation.

The following ASSA ABLOY products have Environmental Product Declarations (EPD):

- 1801/70SC Brass Furniture Plate with Lever.
- 1904/70SC Brass Furniture Plate with Lever.
- 1905/70SC Brass Furniture Plate with Lever.
- 3772SS Mortice Lockset.
- 2615DASIL Delayed Action Closer.

Refer to the NATSPEC TECHreport TR 01 on specifying ESD.

1 GENERAL

ASSA ABLOY is the global leader in door opening solutions, dedicated to satisfying end-user needs for security, safety and convenience. Under the iconic brands such as Interlock, Lockwood, Whitco and Yale, ASSA ABLOY Australia has long been developing innovative products. In the growing electromechanical security sector, the Group has a leading position in access control, identification technology, automatic doors and security.

1.1 RESPONSIBILITIES

General

Requirement: Provide door hardware, as documented.

Documented is defined in 0171 General requirements as meaning contained in the contract documents.

1.2 COMPANY CONTACTS

ASSA ABLOY technical contact

Website: www.assaabloy.com.au/en/local/au/contact/

1.3 CROSS REFERENCES

General

Requirement: Conform to the following:

- 0171 General requirements.

0171 General requirements contains umbrella requirements for all building and services worksections.

List the worksections cross referenced by this worksection. 0171 General requirements references the 018 Common requirements subgroup of worksections. It is not necessary to repeat them here. However, you may also wish to direct the contractor to other worksections where there may be work that is closely associated with this work.

NATSPEC uses generic worksection titles, whether or not there are branded equivalents. If you use a branded worksection, change the cross reference here.

- ASSA ABLOY door hardware schedule.

Delete if a schedule is not provided by ASSA ABLOY.

1.4 INTERPRETATION

Abbreviations

General: For the purposes of this worksection, the abbreviations given in AS 4145.1 Appendix D apply.

Edit the **Abbreviations** subclause to suit the project or delete if not required. List alphabetically.

Definitions

General: For the purposes of this worksection, the general definitions given in AS 4145.1 Section 2 apply.

Edit the **Definitions** subclause to suit the project or delete if not required. List alphabetically.

1.5 MANUFACTURERS DOCUMENTS**Technical manuals**

Materials and installation manuals: www.assaabloy.com.au/en/local/au/

1.6 SUBMISSIONS**Execution details**

Door hardware schedule: Submit a door hardware schedule, prepared by ASSA ABLOY Australia.

- Information sources: This worksection and the contract drawings.

This is applicable to projects where a **Door hardware selection schedule** has been completed by the specifier as an aid to the preparation of a door schedule by a specialist consultant. If door hardware is selected directly by the specifier and documented in the **Door schedule**, delete this requirement.

Re-use of recovered hardware: Submit a proposal describing the standard of cleaning, repair and testing of recovered items and the location where each is to be reused.

Document recovered items for re-use in the works in *0201 Demolition*, if applicable. Delete if not applicable.

Key control system:

- New works: Submit details of the proprietary key control security system proposed by the lock manufacturer for locks required to accept a group key (master, grandmaster).
- Alterations and additions: Submit details to extend the existing key control security system for locks required to accept a group key.

Operation and maintenance manuals

Automatic door operators: Submit the installer's proposal for continuing maintenance after completion on an annual renewal basis.

Manual: Submit the manufacturer's published recommendations for use, care and maintenance of the hardware provided.

Records

Door hardware schedule: Submit an amended schedule, prepared by ASSA ABLOY Australia or their designated door hardware supplier, showing changes to the contract door hardware schedule resulting from the following:

- Approval of a hardware sample.
- Acceptance of an ASSA ABLOY alternative to the specification.
- A contract variation to a door hardware requirement.

Key coding system: Submit the lock manufacturer's record of the key coding system showing each lock type, number and type of key supplied, key number for re-ordering, and name of supplier.

Samples

Generic items: Submit samples of nominated hardware items.

Particular samples required:

Note items that are the subject of the client sign-off.

Reconditioned items: Submit samples of hardware items offered as meeting the standard of cleaning, repair and testing of recovered items.

Particular samples required:

Identify items that are the subject of the client sign-off.

Subcontractors

Automatic door operators: Submit names and contact details of proposed supplier and installer.

Delete if supplier/installer details are not required.

Warranties

General: Submit warranties, as documented.

Describe the requirements of warranties in **PRODUCTS** or **EXECUTION**, as appropriate, and list the submissions required here.

2 PRODUCTS

2.1 GENERAL

Product substitution

Other products: Conform to PRODUCTS, **GENERAL, Substitutions** in *0171 General requirements*.

The *0171 General requirements* clause sets out the submissions required if the contractor proposes alternative products. Refer also to NATSPEC TECHnote GEN 006 for more information on proprietary specification.

Product identification

General: Marked to show the following:

- Manufacturer's identification.
- Product brand name.
- Product type.
- Quantity.
- Product reference code and batch number.
- Date of manufacture.

Edit the list to suit the project or delete if not required.

Supply

Delivery: Deliver door hardware items, ready for installation, in individual complete sets for each door, as follows:

- Clearly labelled to show the intended location.
- In a separate dust and moisture proof package.
- Including the necessary templates, accessories fixings and fixing instructions.

Hardware specified generically: Hardware of the required strength and quality to perform its function, appropriate to the intended conditions of use, suitable for use with associated hardware, and fabricated with fixed parts firmly joined.

Replacement items

Door hardware: Match items being replaced with the existing, or as documented. Upgrade hinges as necessary to conform to **Hinges for timber doors table** and **Hinges for aluminium doors table**.

2.2 LOCKS AND LATCHES

Standard

General: To AS 4145.2.

Padlocks

Standard: To AS 4145.4.

Lock and latch classification

Rating systems: To AS 4145.1 Section 3.

Performance requirements: To AS 4145.2 Section 3.

Commercial Project requirements:

- Key Latch Retraction
- Universal Functionality
- Australian Made

Multi-Residential Project requirements:

- Rating systems: To AS 4145.1 Section 3.

Guidance is given in AS 4145.1 Appendix A on selecting the appropriate classification.

2.3 HINGES

Butt hinge materials

Timber doors in timber or steel frames:

- Material: [complete/delete]

Steel or stainless steel. If bronze is required nominate a proprietary item.

- Product: Lockwood series.

Aluminium framed doors in aluminium frames:

- Material: [complete/delete]

Stainless steel or high tensile aluminium with fixed stainless steel pins in nylon bushes and with nylon washers to each knuckle joint.

- Product: Interfold stainless steel or high tensile aluminium with fixed stainless steel pins in nylon bushes, and with nylon washers to each knuckle joint.

Heavy Duty doors: Provide severe duty hinges with phosphorus bronze bushings.

Doors fitted with closers: Provide low friction ball bearing hinges.

Fire-resisting doors: To AS 1905.1.

Power transfer hinges: Do not load and install with other compatible hinges.

Lift-off doors: If toilet cubicles require lift-off doors, provide lift-off hinges and allow for door panel with sufficient clearance at the head allow door removal.

Timber solid core doors

Number of hinges: Determine the number of hinges required based on the nominated door leaf size and weight only. For other door leaf sizes or for doors with applied finishes, use the weight of the door to determine the number of hinges required. For doors fitted with door closers with backcheck, add 20 kg to door weight.

Applied finishes could include stainless steel cladding, lead lining or stone facing.

For a door leaf over 80 kg, consider pivot hinges.

Size of hinges: Determine the size of the hinge based on the door leaf thickness:

- 35 to 43 mm thick door: 100 x 75 mm butt hinges with a minimum thickness of 2.5 mm.
- 44 to 55 mm thick door: 100 x 100 mm butt hinges with a minimum thickness of 2.5 mm.
- > 55 mm thick door: To the door hardware schedule.
- For alternative hinge calculations, use ASSA ABLOY [hinge calculator](#).

[Click on the above link to go to the Hinge Adjusted Weight Calculator.](#)

Hinge pin: Supply fixed pins to hinges of doors opening out or designated as a security doors. For all other doors, provide loose pins.

Wide throw: If necessary, use wide throw hinges to achieve the required door swings in the presence of obstacles such as nibs, deep reveals and architraves.

It is not recommended that wide throw hinges be used. Consider detailing doors to avoid wide throw hinges by ensuring the skirting is behind the plane of the hinge knuckles.

Different types of doors may require different hinge types and numbers. Evaluate each door type for its performance requirements and specify appropriate hinge configuration.

Hinges for timber doors table

Nominal door leaf size (L x W x T) (mm)	Door leaf weight (kg)	Number of hinges
2040 x 400 x 35	≤ 19	2
2040 x 600 x 35	≤ 29	2
2040 x 720 x 35	≤ 35	3
2040 x 820 x 35	≤ 39	3
2040 x 920 x 35	≤ 44	3
2040 x 1020 x 35	≤ 49	4
2040 x 720 x 40	≤ 37	3
2040 x 820 x 40	≤ 42	3
2040 x 920 x 40	≤ 48	3
2040 x 1020 x 40	≤ 52	4
2040 x 720 x 50	≤ 45	3
2040 x 820 x 50	≤ 50	3
2040 x 920 x 50	≤ 57	3
2040 x 1020 x 50	≤ 68	4

Nominal door leaf size (L x W x T) (mm)	Door leaf weight (kg)	Number of hinges
2400 x 720 x 40	≤ 50	4
2400 x 820 x 40	≤ 52	4
2400 x 920 x 40	≤ 55	4
2400 x 1020 x 40	≤ 60	4
2400 x 1220 x 50	≤ 72	5
2040 x 920 x 70	≤ 88	Pivot hinges

Length (L) is the dimension along the knuckles, not including hinge tips, if any, and width (W) is the dimension across both hinge leaves when opened flat.

Aluminium doors

Application: Aluminium hinges for aluminium doors, or for doors of other materials in aluminium frames of a weight of 40 kg or less.

Hinges for aluminium doors table

Nominal hinge size (L x W x T) (mm)	Door leaf weight (kg)	Knuckles (minimum)	Screws/hinge leaf (minimum)
100 x 70 x 3	≤ 30	3	3
100 x 80 x 3.5	≤ 50	5	4
130 x 50 x 3.4	≤ 75	Interfold	3

Length (L) is the dimension along the knuckles, not including hinge tips, if any, and width (W) is the dimension across both hinge leaves when opened flat.

2.4 DOOR HANGING SYSTEMS

General

Requirement: Provide sliding door tracks and guides, as documented.

2.5 ANCILLARIES

Bolts

General: Barrel bolts, flush bolts and tower bolts with keepers, including lock plates, staples, ferrules or floor sockets.

Strike plates

General: For steel door frame installations, provide strike plates designed to allow the full extension of the lock tongue or similar devices and the correct operation of the locking mechanism.

The use of universal strike plates can cause malfunction of door hardware items such as door closers.

Rebated doors

General: For mortice locks or latches to rebated doors, provide purpose-made rebated pattern items.

2.6 DOOR CONTROLLERS

AS 1428.1, at clause 11.1.1(c) specifies the maximum force required to operate doors other than fire and smoke doors with closers. The BCA also cites AS 1428.1-2001. For class 9A buildings, BCA D2.19 provides for maximum manual operating forces for doorways as required exits and in patient care areas, these correspond to the requirements of AS/NZS 1668.1 clause 4.7 but not (in part) to AS 1428.1.

Preferably specify all door closers with backcheck. This feature (standard on most models) cushions or slows the opening movement of the door before reaching final opening position. This helps to protect the door & hardware from coming into sudden contact with a wall or other surface. (Mandatory on all fire doors). Delayed action closers should be considered with doors for entry and disabled access.

Standard

General: To AS 4145.5.

Performance

Requirement: Door controllers, pivots, floor or overhead door closers, and automatic door operators, suitable for the door type, size, weight, sliding action and swings required and the operating conditions, including wind and air conditioning pressure.

General

Performance: Provide door controllers, pivots, floor or overhead door closers and automatic door operators, which are suitable for the door type, size, weight and swings required and the operating conditions, including wind pressure.

Auto doors

Glazed sliding:

- Proprietary item: ASSA ABLOY Entrance Systems.

Glazed revolving:

- Proprietary item: ASSA ABLOY Entrance Systems.

Glazed swinging:

- Proprietary item: ASSA ABLOY Entrance Systems.

Automatic door operators

Coordinate the specification for automatic door operators with the requirements for automatic sliding or revolving doorsets in *0453 Doors and access panels*.

General: Complete automatic door operators for opening and closing doors, including door hanging (hinges, pivots or sliding gear) and electrical connection to distribution board.

Requirement: Conform to the following:

- Access key switch: [complete/delete]

Required or delete. Nominate arrangements for high security restricted keying.

- Automatic activation options: [complete/delete]

For example:

- Button: Push button.
- Mat: Pressure floor mat or underfloor induction mat.
- Microwave detector.
- Passive infra-red beam.
- Radar: Radar or radio inflector.
- Safety light beam: Photo-electric cells, one at 200 mm maximum height above finished floor, and one between 600 and 1000 mm above finished floor.
- Switch: Proximity or touch switch on door.
- Ultrasonic detector.

- Manually adjustable function: [complete/delete]

For example:

- Angle: Opening angle of pivoted and hinged doors.
- Dampening: Dampening of opening and closing action.
- Speed: Opening and closing speeds.
- Time: Holding (stay open) time. With mats, holding time is normally limited to the duration of contact.
- Width: Opening width of sliding doors.

- Operation mode: [complete/delete]

For example:

- Automatic: Normal automatic operation.
- Exit only: Automatic opening from inside only. Doors held closed against entry from outside.
- Hold closed: Hold doors closed with power or braking device.
- Hold open: Open doors and hold open without damage to motor.
- Switch off: Doors return to closed position for locking.
- Delayed action

- Power failure: [complete/delete]

For example:

- Auto backup: A system to provide a minimum of 100 normal operations during mains power failure and automatic reset upon resumption of supply.
- Manual: Doors may be opened and closed manually with an operating force of not more than 110 N.

- Spring closed: Doors may be opened manually but spring closed.
- Stay open: Doors open automatically and stay open.

Installation: Provide necessary recesses and core-holes, grout in components where required, and repair any damage. Provide cover plates for access to units in door heads, frames or transoms.

Automatic adjustable function: If the door opening angle or width is manually set below the maximum possible, under conditions of continuous traffic the doors must automatically creep to full opening, returning to reduced opening on the next cycle.

Radio remote door controllers: Provide a device, comprising a radio receiver and separate transmitter, for activating a motorised door operator so as to open and close the door by remote radio signal.

Key switch: If there is no separate access to the enclosure, provide a key switch mounted externally for opening and closing the door from outside the enclosure without the transmitter. Provide two keys.

Light: Provide an internal light that is on for not less than 2 minutes before switching off automatically.

Receiver: House within a wall unit incorporating a push-button switch permanently illuminated. Mount within the enclosure and connect to power.

Transmitter: Portable battery-powered unit sending a coded signal effective up to not less than 12 m from the receiver.

Pressure floor mats: Automatic door activating system consisting of a mat which when deflected by foot pressure operates a switch which activates the door or doors.

Floor mat mounting: [complete/delete]

For example:

- Flush: Set in recess to finish flush with finished floor, with fixing trim and sealant.
- Surface: Set on finished floor with fixing trim and sealant.
- Under carpet: Under carpet in place of underfelt.
- Under paving: Set in floor recess before laying finished paving.

Closers

Hinged and pivot doors:

- Fire-resisting doors: Closers tested and certified for use as components of fire-resisting door assemblies:
 - . Standard: To AS 1905.1.

AS 1905.1 is cited in the BCA for installation of hold-open electromagnetic devices for sliding fire doors, and for required fire doors.

2.7 ELECTRONIC CONTROL DEVICES

Schedule the individual doors together with the method of releasing or securing them. Take into account fire safety regulations, including fail safe operation, for means of egress from controlled doors.

General

Requirement: Electric strikes, electric locks, drop bolts and/or similar devices to suit door construction and hardware.

Also magnetic holders for glass doors etc. State whether or not strikes are to incorporate microswitches.

Electromagnetic hold-open devices: To AS 1905.1 and AS 1670.1.

Fail-safe: Connect door control devices in a fail-safe mode to permit egress in the event of power failure.

Fail-secure: Connect door control devices in a fail-secure mode to permit egress in the event of power failure.

Delete either or both clauses if not required.

Glass doors: Tumbler, drop bolts or magnetic holders.

Double leaf doors (solid frame): Electric strike or lock on the inactive leaf, connected to the door frame by concealed flexible wiring.

Distinguish double leaf doors from single leaf doors and state whether the wiring to double leaf doors is to be concealed or not.

Activation

Activation device: Keypads, card readers or other activation devices located next to entry points.

Specify the particular method of obtaining entry for each door, typically:

- Magnetic readers, proximity, card or key. For cards or keys, specify the type of card or key to be supplied and the quantity, including the quantity of pre-programmed cards or keys to be supplied for future issue.
- Key pads, with PIN programming.
- Punched cards.
- Remote, generally combined with an intercom.

Indicate whether local readers or key pads are to operate as stand-alone units in the event of failure in the main processor system.

When installing a new system to operate as an extension of an existing system, there may be compatibility problems when using existing cards or keys with a different brand of reader.

State whether flush or surface mounted.

External: Weatherproof (IP56) hoods or housings for external units.

Mounting height: 900 to 1100 mm from floor level and not less than 500 mm from internal corners.

2.8 PANIC DEVICES

General

Standard: To EN 1125.

Requirements:

- Field sizable.

Panic exit devices are supplied in both 900 mm and 1200 mm wide variations. The bar can be cut down to 350 mm making it highly adaptable to a range of door widths

- Keyed dogging.

Dogging is a simple mechanism designed to hold the push bar in the open position. The Dogging option does not change the state of the latch, as latches are always retained behind their strike plate, providing a positive latched state to the door at all times. Engaging and disengaging the dogging is achieved via a key cylinder.

2.9 KEYING

Keying requirements

Standard: To AS 4145.2 for keying security

Requirement: Provide door hardware and keys, as documented.

Temporary construction keys and cylinders

Requirement: Provide one of the following:

- Loan cylinder, if specified: Install for construction locks and replace at practical completion.
- Construction keyed master key cylinder: Keep up-to-date records of keys issued including recipient's name, company and contact details, date issued and date returned.

Loan cylinders are usually lent to the contractor by the door hardware subcontractor. Loan cylinders and construction keys (sometimes called project keys) are a means of providing security during the construction period without compromising the building's security after completion and occupation. Construction keyed master key cylinders, or the use of cylinders incorporating a mechanism that disable operation by a construction key once the owner's key has been inserted, serve the same purpose but do not offer the same level of security as loan cylinders. This option is more suitable for key-in-lever locksets and those in which cylinder replacement is more difficult.

Delivery of keys

Great grandmaster, grandmaster and master keys: Arrange for delivery direct to the principal.

For locks keyed to differ and locks keyed alike: Check the quantity against key records, and deliver keys to the contract administrator at practical completion.

Group keying

Keying system: As documented.

Existing system extension: Obtain the details of existing group or master key systems of the system to be extended.

Extensions to existing system: [complete/delete]

Delete if not required.

Future extensions: Provide master and grandmaster group keying systems capable of accommodating future extensions.

Proprietary keying control security system: Provide for cylinder or pin-tumbler locks that accept a group key (e.g. master key, maison key).

The security of a locking system depends on two aspects:

- The degree of restriction on the duplication of keys (keying control security).
- How difficult it is to pick the cylinder (cylinder security).

To have any restriction on key duplication, a proprietary keying control security system must be specified (preferably patented and/or with design registration). Each manufacturer has varying levels of keying control security. Tenderers must be given this information as it can greatly affect the cost of door hardware.

The number of pins left available in a cylinder is the major factor restricting picking. The more keys that a cylinder has to accept, the less pins left in action. For this reason six pins should be specified as a minimum, this will increase security and the number of combinations available for coding.

Having a master or grandmaster keying arrangement without a proprietary keying control security system has two effects:

- There will be no restriction on the duplication of keys.
- The cylinder security is reduced in direct proportion to the level of multiple key use, due to the multiple shear lines created for picking.

Stamping: Stamp keys and lock cylinders to show the key codes and/or door number as scheduled.

Identification

Labelling: Supply each key with a purpose-made plastic or stamped metal label legibly marked to identify the key, attached to the key by a metal ring.

Key material

Lever locks: Malleable cast iron or mild steel.

Pin tumbler locks: Nickel alloy, not brass.

Number of keys table

Key code	Key type	Minimum number of keys
GGMK	Great grandmaster keys	2
GMK	Grandmaster keys	2
MK	Master keys	2 per code group
KD	Locks keyed to differ	2 per lock
KA	Locks keyed alike:	
	- 2 locks in code group	4
	- 3 to 10 locks in code group	6
	- 11 to 40 locks in code group	10
	- 41 and over locks in code group	1 per 4 locks or part thereof

3 EXECUTION

3.1 INSTALLATION

General

Handing: Before supply, verify on site, the correct handing of hardware items.

Operation: Make sure working parts are accurately fitted to smooth close bearings, without binding or sticking, free from rattle or excessive play, lubricated where appropriate.

Mounting height

Locks and latches: Centreline of the door knob or lever spindle above finished floor:

BCA D2.21: 900 mm to 1100 mm, (with exceptions). Check requirements for early childhood centres.

Locks

Cylinders: Fix vertically and with consistent key alignment.

Door stops

Fixing: Fix on the floor, skirting or wall, as appropriate, to prevent the door or door furniture striking the wall or other surface.

Fasteners

Materials: Provide materials compatible with the item being fixed, and of sufficient strength, size and quality to perform their function.

- Concealed fixings: Provide a corrosion resistant finish to concealed fixings.
- Exposed fixings: Match exposed fixings to the material being fixed.

For corrosion resistance guidance, refer to 0171 General requirements and 0185 Timber products, finishes and treatment.

Security: Locate exposed fixings to lock furniture on the inside faces of external doors and on the inside faces of internal doors to lockable rooms.

Check the specific requirements for individual building classification usage.

Support: Provide appropriate back support (for example lock stiles, blocking, wall noggings and backing plates) for hardware fixings.

- Hollow metal sections: Provide backing plates drilled and tapped for screw fixing, or provide rivet nuts with machine thread screws. Do not use self-tapping screws or blind rivets.

Floor springs

General: Form a recess in the floor slab for the floor spring box, securely fix and grout the box in place so that the cover plate is flush with the finished floor.

Hinges

Metal frames: Fix hinges using metal thread screws.

Timber doorsets: Install butt hinges in housings equal in depth to the thickness of the hinge leaf (except for hinges designed for mounting without housing), and fix with countersunk screws.

3.2 COMPLETION**Adjustment**

General: Leave the hardware properly adjusted with working parts in working order, and clean, undamaged, properly adjusted, and lubricated where appropriate.

Automatic door operators: Maintain and adjust the system throughout the defects liability period.

Keys

Contractor's keys: Immediately before practical completion, replace or reset cylinders to which the contractor has had key access during construction to exclude the contractor's keys.

Replacement may be waived only if written approval is given to an alternative method of rendering the contractor's keys inoperative.

Warranties

Automatic door operator's warranty (or interlocking warranties): By the supplier and installer for the system and its installation, for a period of at least twelve months from the date of practical completion.

Mechanical Products: 25 Years

- Exception, Yale Mechanical Products: 10 Years.

Form of warranty: [complete/delete]

List the requirements of the action to be warranted. The submission of warranties is covered in **SUBMISSION**.

4 SELECTIONS

Schedules are a way of documenting a selection of proprietary or generic products or systems by their properties. Indicate their locations here and/or on the drawings. Refer to NATSPEC TECHnote GEN 024 for guidance on using and editing schedules.

How to use the schedules

The following schedules provide for specifying door hardware by two alternative methods. Use only one, not both, for a project. *Guidance* is provided for each method.

4.1 PRODUCT FINISHES

General

Requirement: All hardware finishes to be "Satin Chrome", or like finish depending on the availability and base material of the specified items.

Satin Chrome finishes: Plated using trivalent process.

- Exceptions for approval: Lockwood Velocity Series.

If a non-Standard finish is required for individual projects, modify "Satin Chrome" to read as required finish. e.g. Polished Brass, Chrome Plate, Florentine Bronze etc.

Hardware locations

Door hardware schedule: The following schedules describe the selected hardware item but do not indicate the locations or quantities. A door hardware schedule is required.

4.2 LOCK AND LATCH CLASSIFICATION

Durability rating

Door type	Durability designation to AS 4145.2 Table 3.2

Door type: e.g. entry, office, service cupboard.

Durability designation: Select from D1 to D10.

Keying security

Door type	Keying security designation to AS 4145.2 Table 3.6

Door type: e.g. entry, office, service cupboard.

Keying security designation: Select from K1 to K10.

Cylinder security

Door type	Cylinder security designation to AS 4145.2 Table 3.3

Door type: e.g. entry, office, service cupboard.

Cylinder security designation: Select from Sc1 to Sc10.

Physical security of locks

Door type	Physical security designation of locks to AS 4145.2 Table 3.4

Door type: e.g. entry, office, service cupboard.

Physical security designation of locks: Select from S1 to S10.

Physical security of locksets

Door type	Physical security designation of locksets to AS 4145.2 Table 3.5

Door type: e.g. entry, office, service cupboard.

Physical security designation of locksets: Select from S_L1 to S_L10.

Corrosion classification

Door type	Corrosion category to AS 4145.2 Table 3.7

Door type: e.g. entry, office, service cupboard.

Corrosion category: Select from C1 to C10.

4.3 ASSA ABLOY LOCKS AND LATCHES

Selection options:

- The Brand/Product series only as required generally for the project. The Door Types noted in column 1 are referenced to this general selection.
- A separate Brand/Product series for the door Types in column 1, as appropriate for the project.

Locks and latches schedule

Door type	Brand / Product series	Comments
Generally		
Or		
Solid core	Lockwood Selector 3770 Series Selector Mortice Lock Lockwood Synergy 3570 Series Synergy Mortice Lock Lockwood Synergy 3579 Series Synergy Mortice Lock	
Fire rated	Lockwood Selector 3772 Selector Mortice Lock Lockwood Synergy 3572 Synergy Mortice Lock	
Aluminium framed glass	Lockwood Selector 3780 Series Selector Short Backset Mortice Lock Lockwood Selector 3770 Series Selector Mortice Lock Lockwood Synergy 3570 Series Synergy Mortice Lock	
Timber framed glass	Lockwood Selector 3780 Series Selector Short Backset Mortice Lock Lockwood Selector 3770 Series Selector Mortice Lock Lockwood Synergy 3570 Series Synergy Mortice Lock	
Or		

Door type	Brand / Product series	Comments
Other		

4.4 ASSA ABLOY FURNITURE

Furniture schedule

Backplate Type	Brand/Product series	Comments
Rose	Lockwood Robert Watson Series Rose Door Furniture Lockwood Symphony 1220 Round Rose Door Furniture Lockwood Symphony 1420 Square Rose Door Furniture Lockwood 1360 Round Rose Brass Door Furniture Lockwood 1370 Round Rose Brass Door Furniture Lockwood 260 Round Rose Door Furniture Lockwood 260SQ Square Rose Door Furniture Lockwood Velocity Small Round Rose Door Furniture Lockwood Velocity Small Square Rose Door Furniture Yale Simplicity Round Rose Door Furniture	
Plate	Lockwood 1800 Series Plate Brass Door Furniture Lockwood 2800 Series Plate Brass Door Furniture Lockwood 4800 Series Narrow Stile Plate Brass Door Furniture Lockwood 5800 Series Narrow Stile Plate Plate Brass Door Furniture Lockwood Artefact 200 Series Plate Door Furniture Lockwood Artefact 202 Series Plate Door Furniture Lockwood Artefact 212 Series Plate Door Furniture Lockwood Artefact 224 Series Plate Door Furniture	
Detention	Lockwood Detention 220D Wide Plate Door Furniture Lockwood Detention 222D Narrow Plate Door Furniture	
Other		

Handles and plates schedule

A D-Handle should be selected in conjunction with the Push / Pull Plate. Advice should be sought from an ASSA ABLOY representative as to the compatibility of Push / Pull Plates and D-Handles.

Plate/Pull Type	Brand/Product series	Comments
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Plate/Pull Type	Brand/Product series	Comments
Push/Pull Plate D-Handle	Lockwood Artefact 200 Series Plate Door Furniture Lockwood Artefact 202 Series Plate Door Furniture Lockwood Artefact 206 Series Plate Door Furniture Lockwood Artefact 208 Series Plate Door Furniture Lockwood Artefact 212 Series Plate Door Furniture Lockwood Artefact 214 Series Plate Door Furniture Lockwood Artefact 216 Series Plate Door Furniture Lockwood Artefact 218 Series Plate Door Furniture Lockwood Artefact 224 Series Plate Door Furniture	
Back to Back	Lockwood 231 Series Entrance Handles Lockwood 151 Series Entrance Handles Lockwood 192 Series Entrance Handles Lockwood 140 Series Entrance Handles	
D-Handle	Lockwood 184 Offset pull handle Lockwood 185 Offset pull handle Lockwood B Series Lockwood P Series	
Joinery		
Other		

4.5 ASSA ABLOY PANIC EXIT DEVICES

ASSA ABLOY panic devices allow for dogging in fire rated conditions. Consideration of mid rail requirements for glazed doors should be accounted for when selecting door types and exit devices.

Panic exit device schedule

Door Type	Brand/Product series	Comments
Solid core	Lockwood Fluid Series Panic Exit Devices	
Fire rated	Lockwood Fluid Series Panic Exit Devices	
Other	or	

4.6 ASSA ABLOY ACCESS CONTROL

Access control lock schedule

Refer to 0981 Electronic security for Door control devices or visit ASSA ABLOY at <http://www.assaabloy.com.au>.

Type	Brand/Product series	Comments
Electric strike	Lockwood Padde Series ES9000 Preload Electric Strike Lockwood Padde Series ES2100 Electric Strike	

Type	Brand/Product series	Comments
	Lockwood Padde Series ES2000 Electric Strike	
Drop bolt	Lockwood Padde Series TB25 Drop Bolt Lockwood Padde Series ES8000 V-Lock	
Electric mortice lock	Lockwood Synergy 3570EL Series Electric Mortice Lock Lockwood Synergy 3579EL Series Electric Mortice Lock Lockwood Synergy 3579HSEL Series Electric Mortice Lock Lockwood Synergy 3580EL Series Short Backset Electric Mortice Lock Lockwood Padde Series ES8200 Technilock	
Magnetic lock	Lockwood Padde Series Z4 Electromagnetic Locks Lockwood Padde Series Z8 Electromagnetic Locks	
Shear lock	Lockwood Padde Series ES6000 Hook Lock	
Panic exit device	Lockwood 9000 Series Electromechanical Panic Exit Devices	
Other	ASSA ABLOY Aperio Wireless Access Control Lockwood Cortex Digital Door Lock	

4.7 ASSA ABLOY DOOR CONTROLLERS

Note 1: Allow for sufficient sized top rail (depth) to allow for correct mounting of specified closers.

Note 2: Make sure there is sufficient nib room available for door closers when mounted on pull side of door.

Door closers schedule

Type	Brand / Product series	Comments
Generally		
Or		
Type A	Lockwood 2616 Cam Action Door Closer Lockwood 2615 Cam Action Door Closer Lockwood 8014 Concealed Door Closer Lockwood 8015 Concealed Door Closer Lockwood 7726 Door Closer Lockwood 7714 Door Closer	
Type B	Lockwood 726 Door Closer Lockwood 714 Door Closer Yale Y2600 Series Door Closer	
Type C	Lockwood 2000 Series Door Closer	

Type	Brand / Product series	Comments
	Yale Y2400 Series Door Closer	
And		
Floor springs	Lockwood ST8011 Floor Spring Lockwood 8800 Series Floor Springs	
Transom closer	Lockwood 9800 Series Transom Closers	
Electro-magnetic	Lockwood 2616EMC Hold Open Door Closer System Lockwood 2616EMCD Hold Open Coordinating Door Closer System Lockwood 2616CO Coordinating Door System Lockwood FD480 Concealed Hold Open Door Closer System Lockwood FD484 Concealed Hold Open Coordinating Door Closer System Lockwood FD481 Coordinating Door System	
Door stays	Lockwood 8001 Door Stay	
Other		

Select Door closers – generally if different levels of usage are not required.

Select door closers by type if different levels of usage is required.

Door closer type:

- A: High performance.
- B: Medium performance.
- C: Low performance.

Door closer Type A location: [complete/delete]

e.g. external or security areas.

Door closer Type B location: [complete/delete]

e.g. offices, toilets, staff facilities.

Door closer Type C location: [complete/delete]

e.g. plant rooms, services cupboards.

Automatic door operators schedule

Brand	Item	Comments
ASSA ABLOY Entrance Systems		

4.8 ASSA ABLOY ANCILLARY HARDWARE

Bolts schedule

Type	Brand/ Product series	Size
Barrel		To suit door height
Flush timber		To suit door height
Flush aluminium		To suit door height

Type	Brand/ Product series	Size
Skeleton		To suit door height
Auto		
Top latch		To suit door height

4.9 ASSA ABLOY DOOR HANGING SYSTEMS

Sliding track schedule

Type	Brand	Product series	Description	Finish

Contact your states ASSA ABLOY branch for assistance.

Door seal schedule

Function	Brand	Product series	Description	Finish

Contact your states ASSA ABLOY branch for assistance on selection of a suitable system.

Function: Select:

- Acoustic seals.
- Fire and smoke seals.
- Cold draught, dust and ember seals.
- Light seals.
- Insect and vermin seals.

Door stop schedule

Type	Brand	Product series	Description	Finish

Contact your states ASSA ABLOY branch for assistance.

Coat hook schedule

Type	Brand	Product series	Description	Finish

Contact your states ASSA ABLOY branch for assistance.

Door protection schedule

Type	Brand	Material	Finish	Size (mm x mm)

Contact your ASSA ABLOY state branch for assistance.

4.10 PADLOCKS

Padlock schedule

Property	Room or space group 1	Room or space group 2	Room or space group 3
Room or space type			
Security			
Keying security			
Durability			
Corrosion resistance			

Room or space type: A descriptive name based on the function of the group of rooms or spaces. Align names on the drawings as much as possible, e.g. front gates, roof access ladder, tool store, pump house.

Security: Select from SP1 to SP10 (Refer to AS 4145.4 Table 3.1).

Keying security: Select from K1 to K6. (Refer to AS 4145.2). Match the mechanical lockset selection.

Durability: Select from D1 to D3 (Refer to AS 4145.4 Table 3.1).

Corrosion resistance: Select from C1 to C5 (Refer to AS 4145.4 Table 1.1).

The preferred format for padlock classification codes described in AS 4145.4 Appendix A (normative) is:

Security – Keying security – Durability – Corrosion resistance.

For example, the code SP7K6D2C3 denotes a padlock with highly physical and keying security, relatively high corrosion resistance but maximum durability, perhaps used in an exterior application of a storage area where valuable goods must be protected and the frequency of operation is small.

4.11 KEYING

Key codes schedule

Group	Requirement	Number
KD		
KA		
MK		
GMK		
GGMK		
Maison		

Requirement: Indicate required or not required.

For pricing purposes at the time of tendering the tenderers should at least be given a schedule showing which groups will apply to the project, and the number of locks in each group.

KA: For a suite of doors.

MK: For a simple building or department.

GMK: For a building with a number of departments. There can be more than one GMK group, whether or not there is also a GGMK group.

GGMK: For a campus with a number of buildings each with a number of departments.

Maison keyed: Used for common areas such as laundries used by occupants of individual flats. It reduces cylinder security of six pin cylinders due to the additional shear lines created.

REFERENCED DOCUMENTS

The following documents are incorporated into this worksection by reference:

AS 1670		Fire detection, warning control and intercom systems - System, design, installation and commissioning
AS 1670.1	2015	Fire
AS 1905		Components for the protection of openings in fire-resistant walls
AS 1905.1	2015	Fire-resistant doorsets
AS 4145		Locksets and hardware for doors and windows
AS 4145.1	2008	Glossary of terms and rating system
AS 4145.2	2008	Mechanical locksets for doors and windows in buildings

AS 4145.4	2002	Padlocks
AS 4145.5	2011	Controlled door closing devices (EN 1154:1997, MOD)
EN 1125	2008	Building Hardware - Panic Exit Devices Operated by a Horizontal Bar, for use on Escape Routes - Requirements and Test Methods

The following documents are mentioned only in the *Guidance* text:

AS 1428		Design for access and mobility
AS 1428.1	2009	General requirements for access - New building work
AS 1668		The use of ventilation and air conditioning in buildings
AS/NZS 1668.1	2015	Fire and smoke control in multi-compartment buildings
BCA D2.19	2016	Access and egress - Construction of exits - Doorways and doors
BCA D2.21	2016	Access and egress - Construction of exits - Operation of latch
NATSPEC GEN 006	2007	Product specifying and substitution
NATSPEC GEN 024	2015	Using NATSPEC selections schedules
NATSPEC TR 01	2018	Specifying ESD