



AWS
ARCHITECTURAL WINDOW SYSTEMS

AGED CARE FACILITIES



/ MAXIMISE EFFICIENCY & COMFORT



AUSTRALIA
HAS SEEN AN
INCREASED
DEMAND FOR
AGED CARE
FACILITIES DUE TO
RISING AGEING
POPULATION
NATIONWIDE.

DISCLAIMER

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Australia has seen an increased demand for Aged Care Facilities due to the rise in our ageing population nationwide.

Aged Care Facilities are built to meet stringent requirements, and to ensure comfortable living spaces for all variations of retired living. It is important to consider functional and operational building needs as there are a number of concerns which need to be addressed in designing specialist buildings for the care and accommodation of the elderly community.

We all hope to be comfortable in our older years a well-insulated building to control heat and cold, along with good acoustic insulation are important elements of good Aged Care Facility design. Similarly consideration to accessibility, slips, trips and falls is critical.



Estia Health - The Poplars. Architect Morrison Design Windows by: Superior Windows. Photography: Urban Angels Photography.

BUILDING STANDARDS

The BCA categorises Aged Care Facilities under Class 3, 9a or 9c depending on the degree of nursing or medical facilities offered, these building classes are outlined below:

- Class 3: This class refers to a resident building, other than a Class 1 or 2, which is typical of long-term or transient living for a number of unrelated persons. Class 3 is defined as a 'low care hostel' which is accommodation for the aged, children or people with disabilities.
- Class 9a: This class refers to an aged care building that is a high care level facility. Often labelled a nursing home.
- Class 9c: This class refers to an aged care building, which is defined by the BCA as being a building "for residential accommodation for aged persons". These persons generally require personalised care. Residents of Class 9c buildings generally have varying degrees of incapacity and as a result, 24 hour personal care services are provided by staff to assist residents in an emergency evacuation.

The BCA requires that buildings of these classes' among other requirements comply with the requirements prescribed by Australian Standard AS 1428.1 'Design for Access and Mobility'

AS1428.1 2009: REQUIREMENTS AFFECTING WINDOW AND DOOR SPECIFICATION

Design for access and mobility Part 1: General requirements for access—New building work

This Standard specifies the design requirements for new building work, as required by the Building Code of Australia (BCA) and the Disability (Access to Premises—Buildings) Standards (Premises Standards), to provide access for people with disabilities. Particular attention is given to— continuous accessible paths of travel and circulation spaces for people who use wheelchairs; access and facilities for people with ambulatory disabilities; and access for people with sensory disabilities. There are a number of requirements stipulated within this standard which directly affect decision making for window selection and specification in Aged Care Facilities. These requirements can be identified as follows:

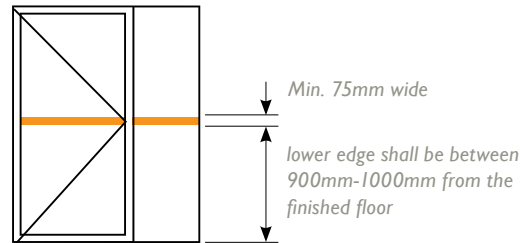
6.6 Visual indicators on glazing

Where there is no chair rail, handrail or transom, all frameless or fully glazed doors, sidelights, including any glazing capable of being mistaken for a doorway or opening, shall be clearly marked for their full width with a solid contrasting line. The contrasting line shall be not less than 75 mm wide and shall extend across the full width of the glazing panel. The lower edge of the contrasting line shall be located between 900 mm and 1000 mm above the plane of the finished floor level. Any contrasting line on the glazing shall provide a minimum of 30% luminance contrast when viewed against the floor surface or surfaces within 2 m of the glazing on the opposite side.

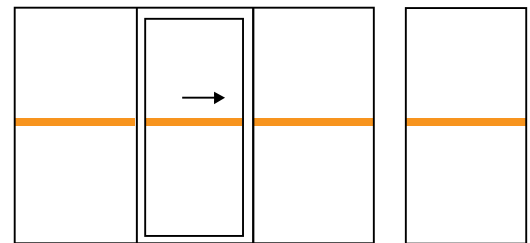
This clause highlights the requirement for manifestation to be applied to any glazed area capable of being mistaken for a door way. The identification of a minimum of 30% luminance contrast is difficult to measure in practice, although the standard sets out the requirements for determining luminance in Appendix B of AS 1428.1:2009.

Given the potential ambiguity of this requirement, the Australian Window Association sought legal opinion to clarify the onus of responsibility for the luminance contrast requirements of this Australian Standard. That opinion is that it should not be the responsibility of the window supplier to decide what contrasting colour is to be applied, compliance with AS1428 is the responsibility of the purchaser. Therefore AWS recommends consideration to manifestation should be made during the design and specification stage.

Additionally requirements for manifestation are outlined by the NCC Clause 3.6.4.6 and AS 1288:2006, Clause 5.19.



Hinged door & Sidelite



Sliding Door

capable of being mistaken as doorway

7. Floor or ground surfaces on continuous accessible paths of travel and circulation spaces

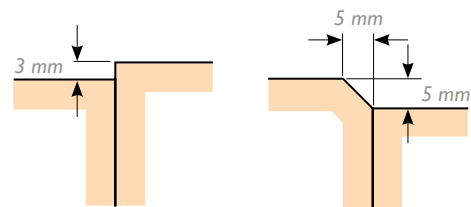
7.1 General

A continuous accessible path of travel and any circulation spaces shall have a slip-resistant surface. The texture of the surface shall be traversable by people who use a wheelchair and those with an ambulant or sensory disability.

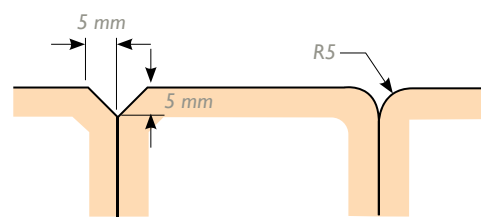
7.2 Construction tolerances for abutment of surfaces Abutment of surfaces shall have a smooth transition. Design transition shall be 0 mm. Construction tolerances shall be as follows:

- (a) 0 ± 3 mm vertical, as shown in Figure 6(a).
- (b) 0 ± 5 mm, provided the edges have a bevelled or rounded edge to reduce the likelihood of tripping, as shown in Figure 6(b).

This clause highlights the requirement seamless transition between surfaces. This is of particular relevance to the selection and installation of door sills. Whilst not specifically addressed by this standard AWS believes consideration should be given to this criteria when seeking disability access compliance.



(a) Change in level



(b) Continuous paving units - flush - jointed with level surfaces

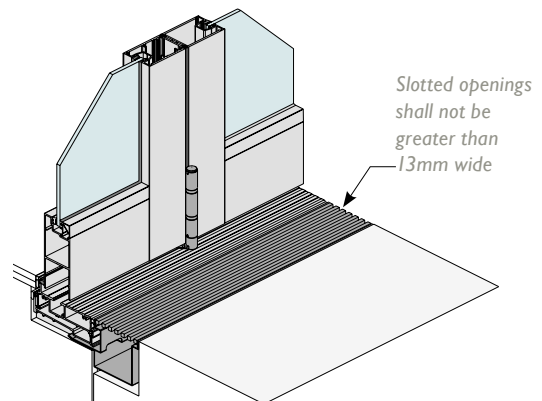
7.5 Grates

Grates shall comply with the following:

- (a) Circular openings shall be not greater than 13 mm in diameter.
- (b) Slotted openings shall be not greater than 13 mm wide and be oriented so that the long dimension is transverse to the dominant direction of travel.

NOTE: Where slotted openings are less than 8 mm, the length of the slots may continue across the width of paths of travel.

This clause is of particular relevance where a recessed door sill is being used in conjunction with a lineal drain. The maximum width of slotted openings may also be interpreted to apply to the channel width of sliding or bi-fold door tracks or sills, though not formally stipulated or covered by the standard.

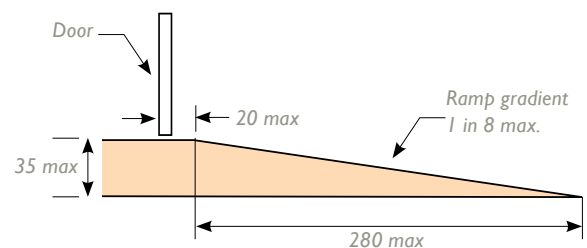


10.5 Threshold ramps

Threshold ramps at doorways on a continuous path of travel shall have—

- (a) a maximum rise of 35 mm;
- (b) a maximum length of 280 mm;
- (c) a maximum gradient of 1:8; and
- (d) be located within 20 mm of the door leaf which it serves, as shown in Figure 21.

The edges of the threshold ramp shall be tapered or splayed at a minimum of 45° where the ramp does not abut a wall.



13 Doorways, doors and circulation space at doorways

13.1 Luminance contrast

All doorways shall have a minimum luminance contrast of 30% provided between—

- (a) door leaf and door jamb;
- (b) door leaf and adjacent wall;
- (c) architrave and wall;
- (d) door leaf and architrave; or
- (e) door jamb and adjacent wall.

The minimum width of the area of luminance contrast shall be 50 mm.

13.2 Clear opening of doorways

The minimum clear opening of a doorway on a continuous accessible path of travel shall be 850 mm when measured from the face of the opened door to the doorstop. Where double doors are used, the 850 mm minimum clear opening shall apply to the active leaf.

NOTE: For door controls, see Clause 13.5.

13.5 Door controls

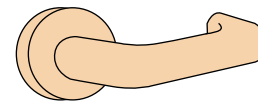
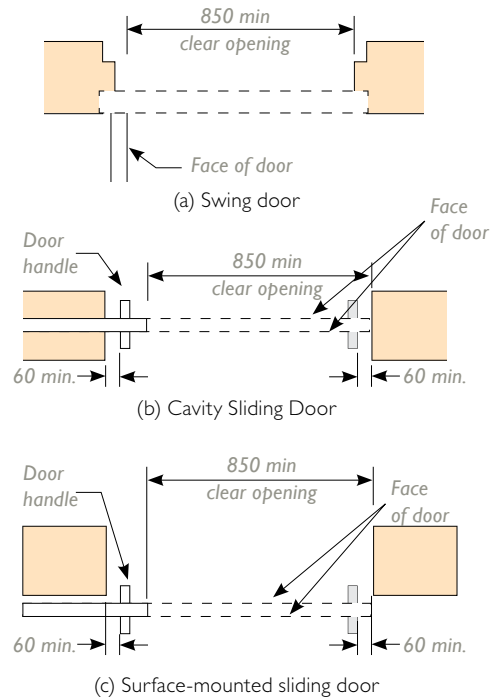
13.5.1 General

Door controls in, or forming part of, the continuous accessible path of travel shall comply with the requirements of this Clause.

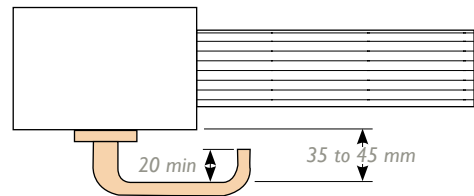
13.5.2 Design and performance

Door handles and related hardware and accessories shall comply with the following:

- (a) The door handle and related hardware shall be of the type that allows the door to be unlocked and opened with one hand. The handle shall be such that the hand of a person who cannot grip will not slip from the handle during the operation of the latch.
- (b) The clearance between the handle and the back plate or door face at the centre grip section of the handle shall be not less than 35 mm and not more than 45 mm.
- (c) 'D' type handles shall be provided on sliding doors.
- (d) Where snibs are installed, they shall have a lever handle of a minimum length of 45 mm from the centre of the spindle.
- (e) For doors other than fire doors and smoke doors where a door closer is fitted, the force required at the door handle to operate the door shall not exceed the following:
 - (i) To initially open the door..... 20 N
 - (ii) To swing or slide the door 20 N
 - (iii) To hold the door open between 60° and 90° 20 N
- (f) Where an outward opening door is not self-closing, a horizontal handrail or pull bar shall be fixed on the closing face of a side-hung door.

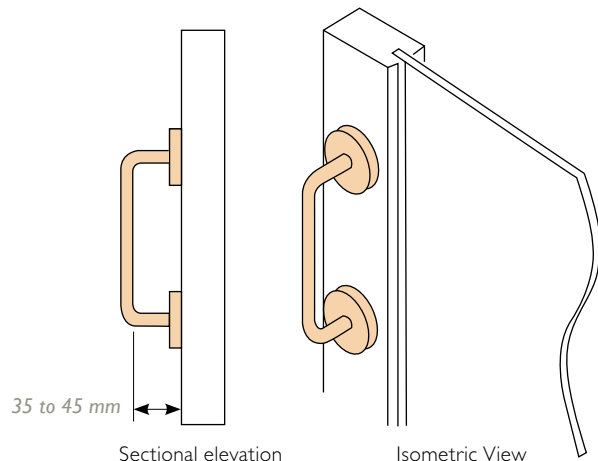


(a) Isometric view



(b) Plan view

Example of a suitable hinged door handle.



Example of a suitable door handle for sliding doors

13.5.3 Location

Except in early childhood centres, swimming pool barriers or similar situations where the location of the opening and locking controls is prescribed by the relevant statutory authority, the location of the controls for doors and gates shall be above a level surface and as follows:

(a) Controls that need to be grasped or turned shall be not less than 900 mm and not more than 1100 mm above the plane of the finished floor, as shown in Figure 36.

(b) Controls that only need to be pushed, such as panic bars on egress routes, shall be not less than 900 mm, and not greater than 1200 mm above the plane of the finished floor.

(c) Controls that only need to be touched shall be not less than 900 mm, and not greater than 1250 mm above the plane of the finished floor, and not less than 500 mm from an internal corner except as specified in AS 1735.12.

(d) Handles on sliding doors shall be not less than 60 mm from the door jamb or doorstep when in the open or closed position.

(e) Manual controls to power-operated doors shall be located on the continuous accessible path of travel no closer than 500 mm from an internal corner and between 1000 mm to 2000 mm from the hinged door leaf in any position or clear of a surface-mounted sliding door in the open position.

13.5.4 Power-operated door controls

Push-button controls shall have a minimum dimension of 25 mm diameter and be proud of the surface and shall activate the door before the button becomes level with the surrounding surface.

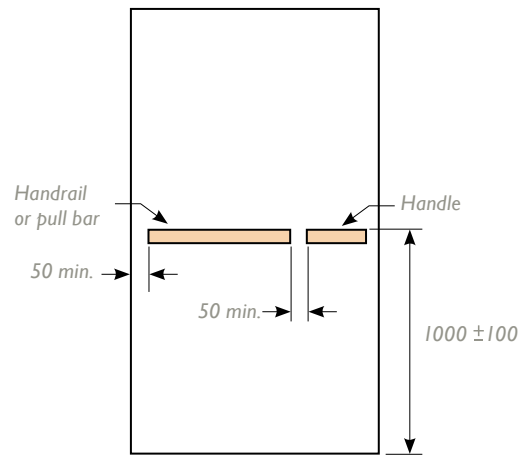


Figure 36





Estia Health - The Poplars. Architect Morrison Design Windows by: Superior Windows. Photography: Urban Angels Photography.

AS1428.1 2009: REQUIREMENTS AFFECTING WINDOW AND DOOR SPECIFICATION

Design Considerations Impacting Window Selection

It is important to maintain a thorough structural approach to the design process of aged care living projects. At Architectural Window Systems (AWS), we are focused on ensuring you can meet functional and operational design requirements. There are a number of considerations impacting on the selection of window and door systems for designing aged care facility buildings, including:

- » Continuous accessible paths of travel
- » Maintenance & longevity
- » Operational force
- » Flyscreens
- » Energy ratings
- » Acoustics ratings
- » Bushfire ratings

Continuous Accessible Paths of Travel

It is important to provide an uninterrupted path of travel to and within Aged Care Facilities. Where possible thresholds at doorways should be eliminated. Where external doorways are concerned this has implications for weather resistance. AWS offers a range of sliding and bi-fold door systems which can be installed as part of zero-threshold solution. In such applications water can be controlled through the use of lineal drains. Hinged and pivot doors can be installed without thresholds, canopies for weather protection at entry doors may also enable thresholds to be eliminated. This is not always possible and, where thresholds do occur, a compliant threshold ramp should be used to overcome the change of level.

Bushfire Ratings

Under the Aged Care Facility requirements set out by the BCA, windows with a bushfire rating must comply. AWS offers Australia's largest range of BAL-40 rated of aluminium and thermally broken windows and doors.

Maintenance & Longevity

Aluminium windows and doors require minimal maintenance, and retain structural integrity over time making them an ideal choice for use in Aged Care Facilities. The entire AWS range of windows and doors are designed to stand the test of time; with simple routine care and maintenance the window and door systems are able to keep looking and operating at their best.

Operational Force

Windows and doors must be easily operated to allow for ventilation and also in case of an emergency. All windows and doors should be easily operable by either residents or staff.

AWS's range of windows and doors have heavy duty carriers, rollers, pivots and hinges to allow ease of operation, despite the size of a product. In particular, our range of top hung bi-fold doors and sliding doors provide a good solution when there is a necessity for easy-to-operate windows and doors in a project.

Flyscreens

It is important to maximise natural light and ventilation throughout Aged Care Facilities, to promote natural air flow. This entails permanent openings throughout the residence, being windows, doors or other devices which can be opened. Under the BCA requirements, operable windows must have insect screens.

AWS window systems are designed to accept flyscreens without the need for unsightly turn buckles, screens are rebated into the frame providing a seamless appearance.

Energy Ratings

The BCA outlines energy rating requirements for Aged Care Facilities for buildings in Class 2 to Class 9. These requirements are in place to ensure the temperature is able to be controlled with minimal artificial assistance.

The AWS range of ThermalHEART™, thermally broken windows and doors offer substantially improved insulation properties for the building envelope and are particularly well suited to Aged Care applications. In addition the majority of AWS window and door systems accept a full range of glass options including double glazing giving architects and designers considerable flexibility in meeting the energy requirements prescribed under the BCA.

Acoustics Ratings

The BCA outlines provisions for the sound insulation of aged care buildings, as well as consideration for potential noise entering the facility to disturb residents and staff.

AWS has tested the acoustic performance of a number of glass and frame combinations to ensure they are suitable for the minimisation of sound transfer in Aged Care Facilities, to ensure compliance with the BCA.

SLIP RESISTANCE

Slip resistance is a growing concern for the Australian design community and of particular importance for aged care applications. Slip resistant standards must be adhered to maintain public safety, increase accessibility and reduce compensation claims. Australian slip resistant Standards: AS 4586 (Slip resistance classification of new pedestrian surface materials) and the accompanying HB 198 (Guide to the specification and testing of slip resistance of pedestrian surfaces) provide the necessary guidance for Architects and designers to make informed and appropriate decisions regarding slip resistance in their projects. AS 4586 classifies pedestrian surface materials according to their frictional characteristics. When assessing slip resistance there are a number of test methods which can be used.

For building thresholds, Wet Pendulum and Wet-Barefoot tests are most suitable.

AWS recommend the use of a flush thresholds in aged care facilities where accessibility is a priority. In considering the correct specification of flush thresholds, it is necessary to incorporate a threshold drain with an appropriate level of slip resistance in accordance with HB198 ACO and AWS recommend threshold drains achieve a minimum of:

- P4 Wet Pendulum test
- C Wet-barefoot inclining platform
- R11 Oil-wet inclining platform

CASE STUDY: BI-FOLDS FOR ACCESSIBILITY

The Arrunga Aged care facility caters for residents requiring low care in hostel style residential accommodation. The environment is contemporary and relaxed, welcoming and open. Clusters of accommodation are positioned around four landscaped internal courtyards and gardens creating a series of connected internal and external lifestyle spaces.

"The external environment is a key element in the facilities design, the open plan concept and connection to outdoor living spaces gives residents the freedom they need to move about the complex and enjoy the outdoors" To maximise the impact of the carefully landscaped gardens each of the residential clusters incorporates large expanses of glazing facing out onto the courtyards.

On the lower level, large Bi-Fold doors were specified to enable the lower living areas to be opened up completely to the outdoors creating a truly seamless transition between the interior and exterior.

Superior Windows were engaged by builder Denham Constructions to tender on the project. "On seeing the specification it was clear to us that the Elevate™ Aluminium Systems Series 411 Bi-Fold Door would be ideal for this application. This system is top hung which has a number of benefits in a project like this, the weight of the four panels are supported at the head ensuring they run smoothly over their lifespan and because the load is supported from above a flush

sill can be achieved at the threshold which is ideal for applications where accessibility is a consideration."

Using the Elevate™ Aluminium Systems Series 411 Bi-Fold Door systems, Superior Windows achieved a flush threshold eliminating any trip hazard and creating a smooth transition between the interior and exterior environments. Customised draining tubes were developed by Superior Windows and fitted into the sills to drain any water directly into storm water tanks.

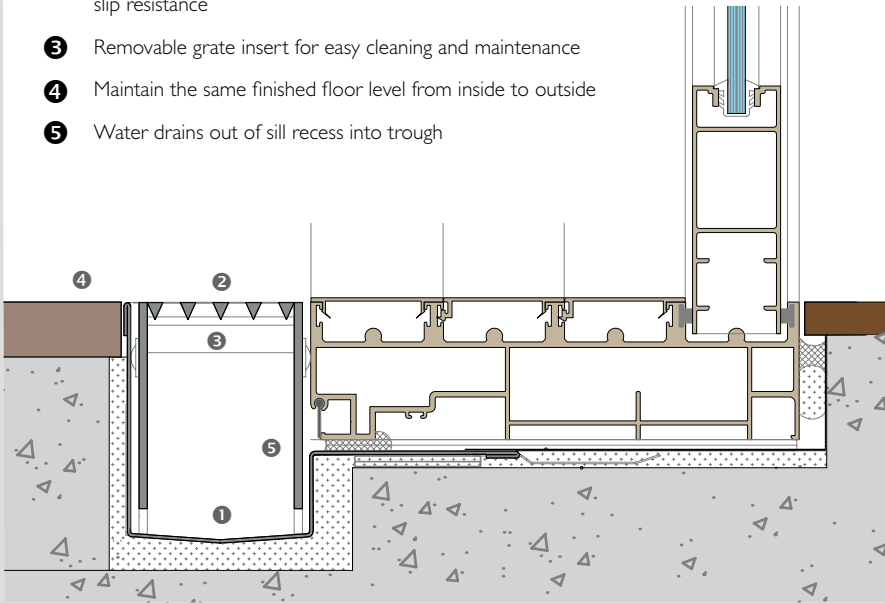
In addition to the Series 411 Bi-Fold Superior Windows utilised Elevate™ Commercial Framing throughout the project with a combination of Elevate™ and Vantage residential Double-Hung and Awning window systems.



Arrunga Aged Care Facility. Windows by: Superior Windows.

DOOR SYSTEM RECOMMENDATIONS

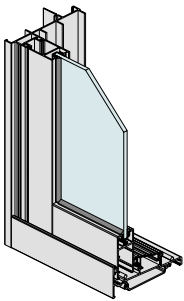
- ❶ Stainless steel trough accepts sliding and bi-fold door threshold
- ❷ Heelsafe® Anti-Slip surface tested and classified under AS 4586 for slip resistance
- ❸ Removable grate insert for easy cleaning and maintenance
- ❹ Maintain the same finished floor level from inside to outside
- ❺ Water drains out of sill recess into trough



In order to achieve full disabled access compliance the door sill must have a maximum gap of 13mm and maximum gradient of 1:8 to cater for wheelchair compliance. An example of a compliant door sill is illustrated left. In most instances these products offer no independent water performance and should be coupled with an external lineal drain, as shown, in exposed locations. These products are marked below with the wheelchair symbol.

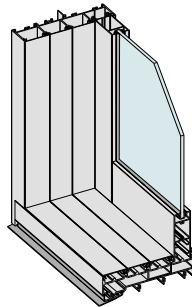
In addition AWS offers a number of door systems which are flat when rebated to floor level and used in conjunction with external draining systems however may incorporate a gap greater than 13mm. These products are suitable for use in some aged care applications BUT not if wheelchair compliance is required.

This flat recessed sill complies with AS1428.1-2009.



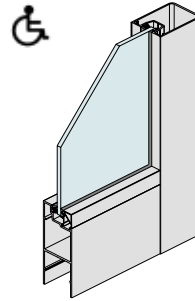
SERIES 541

Residential Sliding Door



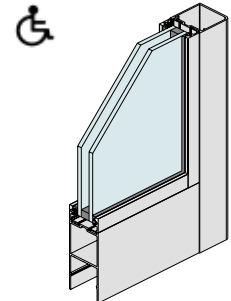
SERIES 618

MAGNUM™ Sliding Door



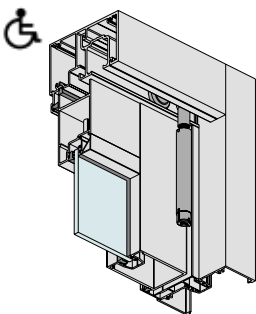
SERIES 50

Commercial Door – SG
(Sliding, Hinged or Pivot)



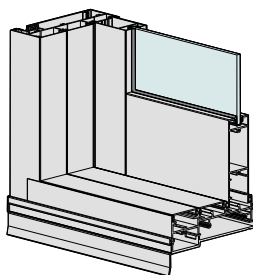
SERIES 52

Commercial Door – DG
(Sliding, Hinged or Pivot)



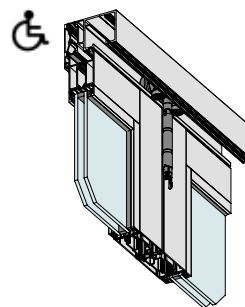
SERIES 411

ViewMASTER™ Bi-Fold
Door (Top Hung)



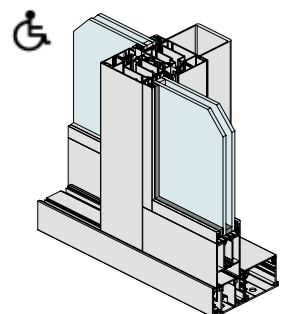
SERIES 704

SlideMASTER™ Sliding
Door (Internal Sliding)



SERIES 831

Thermally Broken Bi-fold
Door (Top Hung)



SERIES 852S

Thermally Broken Door
System (50mm thick)



When selecting window systems for aged care applications the most important consideration is operability. Most window systems will be suitable for use as part of a aged care facility design solution. AWS recommends that consideration be given to the hardware selection on window systems to ensure ease of operation. AWS would not recommend systems with small window catches for aged care facilities.

Products such as double-hung window systems may be less suitable as residents may have difficulty operating the window.

The majority of AWS window systems can be configured to comply with BCA requirements for windows in elevated applications, incorporating opening restrictors. Look for products featuring a SAFE4KIDS symbol when opening restrictions are required.

HARDWARE RECOMMENDATIONS



ICON D'PULL

Stainless Steel ICON D'Pull



ANDO D'PULL

ANDO D'Pull



MIRO D'PULL

MIRO D'Pull

The Sliding door handles illustrated left comply with the requirements of AS 1428.1 for D'Pull handles, the standard stipulates the clearance between the handle and the back plate or door face at the centre grip section of the handle shall be not less than 35 mm and not more than 45 mm.

FLOWTHRU™ INTEGRATED THRESHOLD DRAIN



A flush threshold between internal and external environments is an essential feature in achieving disability access compliance. In addition to creating seamless transition between spaces, the inclusion of a flush threshold minimises the risk of trips and falls and ensures ease of accessibility.

When specifying a flush threshold it is essential to consider drainage, particularly if the doorway is likely to be exposed in any way. Failure to specify a secondary drainage or alternate solution may lead to failure of the door, causing leakage and potential damage to internal floor surfaces.

The AWS FlowTHRU™ drain is the only fully tested threshold drainage solution available for Vantage® and Elevate™ door systems.



Want to find out more about these products?
Click a product to view online



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