History of Dowell

Dowell has a history in the fabrication and supply of windows and doors to the Australian residential housing market dating back many generations.

With the recognition of aluminium as a manufacturing material in the post war era, Dowell was quick to develop the technology to use aluminium in the fabrication of windows in Australia.

Through acquisition Dowell has become an integral part of the Boral building products offer to the market. Dowell is now a leading supplier of aluminium windows and doors to the residential housing market throughout Australia.

Holding true to its name, Dowell has added 5 new energy efficient windows into its ThermaLine™ Range - the Awning, Multi-Transom Awning, Sliding and Fixed Light windows and sliding doors. These windows and doors herald a new era in affordable, energy efficient design.

ThermaLine™ Windows have been rated as among the most energy efficient aluminium windows in the Australian residential market today*

*As verified by the Window Energy Rating Scheme (WERS) - 2012.
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Care and Maintenance

The durable and proven design elements found in every Dowell Aluminium Window mean that you are assured of smooth, trouble-free operation.

To ensure your Dowell Windows continue to look and perform as intended, some simple care and maintenance guidelines should be followed:

**All Aluminium Windows and Doors**

External aluminium surfaces of windows and doors should be washed with clean water and a mild detergent at least every three months. A soft sponge or similar should be used to avoid scratching the glass or aluminium.

In coastal or industrial areas where the environmental conditions are more demanding, the cleaning program should be carried out on a monthly basis.

Abrasive, chemical cleaners or steel wool should not be used as such methods may result in damage to the glass or aluminium surfaces.

Flyscreens can be cleaned by vacuuming or washing thoroughly using a soft brush.

Opening sashes should be operated on a regular basis to ensure the sash hardware continues to move smoothly.

**Sliding Windows and Sliding Doors**

Sill recesses should be regularly cleaned and kept clear of dust and foreign matter. A brush and vacuum within the track area may be used to do this.

Drainage slots should be checked on a regular basis to ensure they have not become blocked with residual dirt or grime, to allow maximum drainage.

After cleaning, a light silicon spray may be applied to the track and woolpile seals to ensure quiet and smooth operation of the sash.

Door locks should be checked from time to time for satisfactory operation and may require adjustment to compensate for building settlement.

Door rollers are factory set and should not require any adjustment. If however, due to building settlement an adjustment needs to be made, the door panel must first be lifted to relieve weight from the roller assembly. Adjustment should be made using a cross recess head screwdriver.
» Care and Maintenance

Awning Windows, Casement Windows and French Doors
With sashes open, the sash and opening perimeter should be cleaned regularly and kept clear of dust and foreign matter.

Drainage holes should be checked regularly to ensure they have not become blocked.

All door and window operating hardware should be cleaned and operated regularly to ensure smooth operation.

Lubricants should not be used on casement stays, as this will affect their operation.

Double Hung Windows
Window jamb tracks should be cleaned regularly and kept clear of dust and foreign matter. Window operating hardware should be cleaned and operated regularly to ensure smooth operation.

Glass
It is recommended that all glass surfaces be kept clean by prompt removal of all dirt or other contaminants. Clean water and in some instances the addition of a small amount of mild detergent should be used.

After washing, any detergent residue must be thoroughly rinsed away with clean water. Under no circumstances is any form of abrasive cleaner to be used. Stubborn dirt or residue should be lightly sponged off to avoid scratching of the glass.

The frequency of cleaning required will depend on environmental conditions such as proximity to the ocean or industrial areas.

As a general guide, glass should be cleaned at least quarterly.
Windows and Doors Product Range

Dowell Standard Product Range

Dowell are able to manufacture a range of products to suit your requirements. Noted below is the standard range we manufacture.

Sliding Window
Awning Window
Casement Window
Double Hung
Fixed Window

Fixed Window with Transom
Fixed Window with Mullion
Permanent
Lauree Window
Sliding Door

Box Bay Configurations
Windows and Doors
135º Bay Configurations
Windows and Doors
Alfresco Sliding Doors
Bi-Fold Door

French Door

Custom Windows

Circles
Arches
Rakes

Note:
Not all standard products are offered at every location and in some locations semi commercial or commercial style frame options can be offered.
Please consult your nearest sales office for options available.
» Windows and Doors Product Range

Colonial Bar Grid Options

Dowell offers a range of Grid Options. The grids are designed to enhance the appearance of your Dowell Windows and Doors. We are able to produce this range to match with building Architecture.

Note:
Various grid options available. In some locations semi commercial or commercial style frame options can be offered. Dowell can offer a wide range of other grid options please consult your nearest sales office for further information. Size limitations apply. Please consult your nearest sales office for further information.
Energy Efficiency

Why is it critical to consider the energy performance factors for the windows being installed into your home? Importantly the inclusion of energy efficient windows in the design of your home may increase your comfort level in both summer and winter.

In an average home it has been estimated 79-86% of the heat gain and 46-61% of the heat loss can be attributed to poor performing windows (source: SWA Project 2012*).

Little wonder that energy efficiency requirements now form part of the design requirements included in the ‘Building Code of Australia’.

For the purpose of determining the varying housing energy requirements the Building Code of Australia has divided Australia up into 8 climate zones.

* The SWA project has run over 4000 simulations in all 8 BCA climate zones in 3 house types with a wide range of windows to show the impact of high performance windows on the energy efficiency or star rating of the home.

Fig 1: Climate Zones in Australia

<table>
<thead>
<tr>
<th>Zone</th>
<th>Predominantly climates requiring cooling</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zone 1</td>
<td></td>
</tr>
<tr>
<td>Zone 2</td>
<td></td>
</tr>
<tr>
<td>Zone 3</td>
<td></td>
</tr>
<tr>
<td>Zone 4</td>
<td></td>
</tr>
<tr>
<td>Zone 5</td>
<td></td>
</tr>
<tr>
<td>Zone 6</td>
<td></td>
</tr>
<tr>
<td>Zone 7</td>
<td></td>
</tr>
<tr>
<td>Zone 8</td>
<td></td>
</tr>
</tbody>
</table>

**Note:**
Second generation house energy rating programmes now coming on line, in particular ‘AccuRate’ will work on a much refined zoning process based on postcode.
Energy Efficiency

Fundamentally window energy performance is based on the following criteria:

- **U value of the window** – this figure indicates the amount of thermal transmittance through the window based on $\text{W/m}^2\cdot\text{K}$ as a rule the lower the figure the better.
- **Solar Heat Gain Coefficient (SHGC)** – this figure as a % indicates the amount of solar heat that will pass through the window unit.

Depending on the climate zone solar heat gain can be an advantage or disadvantage.

As a rule cooling climates require low SHGC windows while heating climates may require high SHGC windows particularly on the North facing windows which provide free heating by the winter sun.

Dowell is able to produce a range of products designed to meet the increasing impact of today’s environment. A solution is available to satisfy nearly all requirements.

Dowell options to improve the overall thermal performance of the window include a full range of single and double glazed energy efficient window and door products configured to suit the particular climate zone and glass orientation.

Dowell also offers its ThermaLine™ thermally broken products which significantly improve the overall thermal performance of the window.

Dowell is a member of the Australian Window Association and WERS (Window Energy Rating Scheme).

Dowell window and door performance data can be found on the WERS web page on www.wers.net

The energy efficiency of any particular building is the end result of all the factors contributing to the performance, ie roof type, wall construction method, floor construction method, glazing type area – orientation, efficient sealing of the building, installation of insulation in the walls and roof cavity and the R’ value of the insulation, are some of the factors.

### Table 5: Glazing Options for various Climate Zones and Glazing Orientation (guide only)

<table>
<thead>
<tr>
<th></th>
<th>North Elevation - Shaded</th>
<th>North Elevation - Unshaded</th>
<th>West Elevation</th>
<th>South Elevation</th>
<th>East Elevation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cooling Zones 1, 2 and 3</strong></td>
<td>Good</td>
<td>Clear Float</td>
<td>ComforTone</td>
<td>ComforTone</td>
<td>ComforTone</td>
</tr>
<tr>
<td></td>
<td>Better</td>
<td>Neutral or Tinted Low E</td>
<td>Neutral or Tinted Low E</td>
<td>ComforTone</td>
<td>ComforTone</td>
</tr>
<tr>
<td></td>
<td>Best</td>
<td>Clear IGU</td>
<td>Toned IGU</td>
<td>Low E</td>
<td>Low E</td>
</tr>
<tr>
<td><strong>Cooling/Heating Zones 4 and 5</strong></td>
<td>Good</td>
<td>Clear Float</td>
<td>ComforTone</td>
<td>Clear Low E</td>
<td>ComforTone</td>
</tr>
<tr>
<td></td>
<td>Better</td>
<td>Clear Low E</td>
<td>Clear Low E</td>
<td>Toned Low E</td>
<td>Clear IGU</td>
</tr>
<tr>
<td></td>
<td>Best</td>
<td>Clear IGU</td>
<td>Low E Toned</td>
<td>Toned Low E IGU</td>
<td>Clear Low E IGU</td>
</tr>
<tr>
<td><strong>Heating Zones 6, 7 and 8</strong></td>
<td>Good</td>
<td>Clear Low E</td>
<td>Clear Low E</td>
<td>Clear Low E</td>
<td>Clear Low E</td>
</tr>
<tr>
<td></td>
<td>Better</td>
<td>Clear IGU</td>
<td>Clear IGU</td>
<td>Clear IGU</td>
<td>Clear IGU</td>
</tr>
<tr>
<td></td>
<td>Best</td>
<td>Clear Low E IGU</td>
<td>Clear Low E IGU</td>
<td>Clear Low E IGU</td>
<td>Clear Low E IGU</td>
</tr>
</tbody>
</table>

**Note:**
This table is a guide only and is not meant to be the Dowell recommended glazing options.

Window options and glazing specifications are determined by the building specifier when determining the energy rating for the building.
Many people underestimate the role of the window frame in energy efficient home design. In fact the most energy efficient windows result from a combination of both an insulated frame and the right glass to achieve superior energy performance.

The ThermaLine™ frame is made with aluminium – a uniquely strong, lightweight, ductile, corrosion-resistant material that can also be recycled – with insulation properties added into the frame to ensure minimal transfer of heat.

The thermal break technology in ThermaLine™ is created using a highly engineered polymide (plastic) strip that acts as a thermal barrier between the outer and inner aluminium components of the window frame. This minimises the transfer of heat and cold through the window frame, resulting in improved energy efficiency.

Refer to Dowell ThermaLine™ product brochure for more details.
Noise Control

Unwanted noise whether it comes from traffic, aircraft, trains or just noisy neighbours is an annoyance that affects our daily lives. In extreme situations unwanted noise becomes a critical issue for consideration in maintaining good health and wellbeing.

Windows and glass play an important role in the effort to reduce unwanted noise in our home or work environment.

Dowell have an extensive range of products available, designed and acoustically tested through approved testing laboratories, aimed at controlling unwanted noise passing through the windows and doors in the building.

Accurately determining the noise level reduction requirements for a particular situation requires the involvement of an acoustic engineer. The acoustic engineer will assess the levels and types of noise affecting the building and specify the acoustic performance requirements for all elements of the building. In the case of windows the acoustic performance requirements are normally specified as STC (sound transmission class) or (weighted sound reduction index) Rw values. The STC and Rw values for windows are usually within a 1dB variation.

The objective of noise control in a building is to ensure the barrier between inside and out, roof, walls or glazing, etc. is able to reduce the noise penetrating the inside of the building, to an acceptable level. As a general rule the heavier and denser the barrier the better the noise reduction.

A reduction of 10dB in noise levels is a halving of noise levels, further, the CSIRO has determined that the human ear requires a change of 3dB in noise levels to detect a difference (source: CSIRO Report Feb 2000).

Windows and glazing being of light construction are not the best sound barrier, however, by utilising various glazing options and combinations, significant sound reduction can be achieved.

Thicker heavier glass performs better than thin glass. Laminated glass performs slightly better than the same thickness monolithic glass. Double glazing small air gap performs better than single glazing but not as good as a piece of monolithic glass of the same thickness.

The best result is achieved with double glazing large air gap (100 to 200mm).

A doubling in glass thickness 3 to 6mm gives a 3dB sound reduction (barely noticeable).

The following table gives an indicative noise reduction rating for windows glazed in a number of glazing options.

<table>
<thead>
<tr>
<th>Table 4: Noise Reduction Rating for Glazed Windows</th>
</tr>
</thead>
<tbody>
<tr>
<td>Window Glazing Option</td>
</tr>
<tr>
<td>------------------------</td>
</tr>
<tr>
<td>3mm float glass</td>
</tr>
<tr>
<td>4mm float glass</td>
</tr>
<tr>
<td>6mm float glass</td>
</tr>
<tr>
<td>6.38mm laminated glass</td>
</tr>
<tr>
<td>10.38mm laminated glass</td>
</tr>
<tr>
<td>Double glazed sash 4-8-4</td>
</tr>
</tbody>
</table>

Note: Refer to Boral acoustic test reports for more details.

To enable a window or door to be specified with an Acoustic Rating the assembly must be tested in an acoustic test chamber.

Glass STC or Rw ratings quoted in the glass manufacturers brochure indicate the performance of the glass only NOT THE WINDOW ASSEMBLY.
Glass in Buildings (AS 1288 - 2006)

A new Australian Standard determining the minimum requirements for glass to be used in buildings throughout Australia was released in January 2006.

The new standard incorporates changes in 2 areas:

1) Glass Thickness Limitations

- Glass thickness limitations – 3mm glass is limited to 0.85 square metres in size.
- The shape of the glass is now considered when determining the thickness required for a particular application instead of only the square metres as in the previous standard.

2) Human Impact Requirements

The requirements in the human impact part of the standard are designed to minimise injury to the occupants of the building caused by the glazing.

These requirements vary depending on where the glazing is located in the building and thus must be determined as a result of plan review by the sales person or estimator.

Please take special care in plan review to reference this part of the code when making decisions on glass selection.

The points for consideration regarding the human impact requirements in the standard are as follows:

- **Doors**
  All doors including hinged, sliding, folding and stacking are to be glazed in Grade ‘A’ safety glazing (Toughened Glass or Laminated Glass).

- **Door Side Panels**
  Side panels with their vertical sight line less than 300mm away from the door and positioned 1200mm or less above the floor level are to be glazed in Grade ‘A’ safety glazing except that 5mm ordinary glass can be used up to a maximum of 0.3 square metres.

**Glazing Capable of Being Mistaken for a Doorway or Opening**

If a glazed opening in the building has a glass sight line that is 500mm or greater in width, 1000mm or greater in height, or 500mm or less above the floor level it is considered capable of being mistaken as a doorway and is to be glazed in Grade ‘A’ safety glazing. Further, the glass must be made visible with the application of a motif.

Exceptions to the above are:

- The glazing is opaque or has a decorative finish to make it visible.
- The glass is protected with a crash/chair rail, handrail or transom.
- There is 1000mm or greater difference in floor level either side of the glass.
» Glass in Buildings (AS 1288 - 2006)

**Low Level Glazing**

Where the lowest sight line in the glazing is less than 500mm from the floor, the window is to be glazed in Grade 'A' safety glazing except a minimum of 5mm thick ordinary glass may be used up to a maximum area of 1.2 square metres.

**Bathrooms**

All glazing in a bathroom up to 2000mm above the floor is to be Grade 'A' safety glazing.

**Schools and Child Care Centres**

All glazing in schools and child care centres up to 1000mm above the floor is to be Grade 'A' safety glazing.

**Aged Care Buildings and Nursing Homes**

All glazing in aged care buildings and Nursing Homes up to 1500mm above the floor is to be Grade 'A' safety glazing.

**Stairway Glazing**

All glazing surrounding a stairway for a distance of 2000mm away from the bottom of the stairs and a distance of 1000mm either side of the stairs must be Grade 'A' safety glazing.

**Double Glazing**

The human impact requirements for double glazing applies only to the sides of the window accessible by human traffic.

**Areas Subject to High Risk of Breakage**

In all those parts of a building where the planned activity can generate a high risk of breakage from human impact, such as gymnasiaums, swimming pools and spa pools and enclosures, parts of schools, halls, public viewing galleries, stadiums and the like, Grade ‘A’ safety glazing is to be used.

**Note:**

Parts of schools referred to in this section include glazing situated within 5000mm of areas where activities such as those in relation to playgrounds, courts or marked out playing fields occur, unless otherwise protected by a permanent barrier. Ref: www.agga.org.au

---

**Table 6: Maximum Areas of Safety Glass for Human Impact Considerations**

<table>
<thead>
<tr>
<th>Type of glazing</th>
<th>Normal thickness (mm)</th>
<th>Maximum area (m²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal</td>
<td>3</td>
<td>1.0</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>2.2</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>3.0</td>
</tr>
<tr>
<td>Toughened and toughened laminated glass</td>
<td>6</td>
<td>4.0</td>
</tr>
<tr>
<td></td>
<td>8</td>
<td>6.0</td>
</tr>
<tr>
<td></td>
<td>10</td>
<td>8.0</td>
</tr>
<tr>
<td></td>
<td>12</td>
<td>10.0†</td>
</tr>
<tr>
<td></td>
<td>&gt;12</td>
<td>Extrapolate</td>
</tr>
<tr>
<td>Laminated glass†</td>
<td>5</td>
<td>2.2</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>3.0</td>
</tr>
<tr>
<td></td>
<td>8</td>
<td>5.0</td>
</tr>
<tr>
<td>Grade ‘A’ safety glass*</td>
<td>10</td>
<td>7.0</td>
</tr>
<tr>
<td></td>
<td>12</td>
<td>9.0†</td>
</tr>
<tr>
<td></td>
<td>&gt;12</td>
<td>Extrapolate</td>
</tr>
<tr>
<td>Safety organic-coated mirror (vinyl backed)</td>
<td>4</td>
<td>3.0</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>3.5</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>4.0</td>
</tr>
<tr>
<td>Safety organic-coated glass</td>
<td>3</td>
<td>2.0</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>2.0</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>2.2</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>3.0</td>
</tr>
<tr>
<td></td>
<td>8</td>
<td>5.0</td>
</tr>
<tr>
<td></td>
<td>10</td>
<td>7.0</td>
</tr>
<tr>
<td></td>
<td>12</td>
<td>9.0</td>
</tr>
<tr>
<td>Grade ‘B’ safety glass*</td>
<td>Wired glass</td>
<td>≥6</td>
</tr>
</tbody>
</table>

* Safety glazing material Grade A or Grade B to AS/NZS 2208.
† Based on total glass thickness only (interlayer thickness not included and should be added).
‡ This area may not be readily available.

---

Fig 4: Stairway Glazing
Construction in Bushfire Prone Areas (AS 3959 - 2009)

In response to the latest Australian Standard for Bushfire Risk requirements - Dowell has developed a range of products to meet the requirements of the Bushfire Attack Levels (BAL’s) as nominated in AS3959 - 2009 ranging from BAL - LOW through to BAL - 40.

Table 7: Dowell Requirements for Aluminium Windows and Doors

<table>
<thead>
<tr>
<th>Bushfire Attack Level</th>
<th>BAL - LOW</th>
<th>BAL - 12.5</th>
<th>BAL - 19</th>
<th>BAL - 29</th>
<th>BAL - 40</th>
<th>BAL - FZ</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>External Screen</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Option A</td>
<td>External</td>
<td>No special</td>
<td>All windows and doors</td>
<td>All windows and doors</td>
<td>Screening externally to</td>
<td>Screening externally</td>
</tr>
<tr>
<td></td>
<td>Screen</td>
<td>requirements</td>
<td>completely protected externally by screens with a mesh with a maximum aperture of 2mm, made of corrosion resistant steel, bronze or aluminium.</td>
<td>completely protected externally by screens with a mesh with a maximum aperture of 2mm, made of corrosion resistant steel, bronze or aluminium.</td>
<td>Windows is not a single option solution at this BAL however it is for Doors.</td>
<td>is not a single option solution at this BAL.</td>
</tr>
<tr>
<td>OR</td>
<td>OR</td>
<td>OR</td>
<td>OR</td>
<td>OR</td>
<td>OR</td>
<td>OR</td>
</tr>
<tr>
<td><strong>Aluminium Windows</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Framing</td>
<td>No special</td>
<td>Aluminium</td>
<td>Aluminium</td>
<td>Aluminium</td>
<td>Aluminium</td>
<td></td>
</tr>
<tr>
<td></td>
<td>requirements</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Windows not available at this BAL, testing required. Use roller shutters.</td>
</tr>
<tr>
<td>Glazing</td>
<td>As above</td>
<td>Windows with sills less than 400mm from the ground, deck/verandah, roof or awning structure below shall be glazed in 4mm minimum safety glass.</td>
<td>All windows glazed in 5mm minimum toughened glass.</td>
<td>All windows glazed in 6mm minimum toughened glass.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hardware</td>
<td>As above</td>
<td>Externally fitted hardware that supports the sash in opening and closing shall be metal.</td>
<td>Externally fitted hardware that supports the sash in opening and closing shall be metal.</td>
<td>All hardware to be metal.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seals</td>
<td>As above</td>
<td>Standard</td>
<td>Standard</td>
<td>Standard</td>
<td>Seals (including glazing rubbers) to stiles, head and sills or thresholds shall be manufactured from materials having a flammability index no greater than 5. Seals with a flammability index of less than 5 as for Windows.</td>
<td></td>
</tr>
<tr>
<td>Screening</td>
<td>As above</td>
<td>Sashes shall be screened internally or externally with mesh with a maximum aperture of 2mm, made of corrosion resistant steel, bronze or aluminium.</td>
<td>Sashes shall be screened internally or externally with mesh with a maximum aperture of 2mm, made of corrosion resistant steel, bronze or aluminium.</td>
<td>Sashes shall be screened internally or externally with mesh with a maximum aperture of 2mm, made of corrosion resistant steel, bronze or aluminium.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>AND</td>
<td></td>
<td></td>
<td>AND</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Where glazing is less than 400mm from ground, deck/verandah, roof or awning structure then these glass panel will require screening with a mesh with a maximum aperture of 2mm, made of corrosion-resistance steel, bronze or aluminium.</td>
<td>Screens to be external.</td>
<td>Screens to be external.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Detailed below are the various Dowell Window and Door inclusions to meet that specific BAL Level requirement.

Please note these inclusions are Dowell recommendations only and where any doubt arises in respect of compliance with the Bushfire Code AS 3959-2009, you should consult your local building assessor or council for clarification.

Continues next page
### Construction in Bushfire Prone Areas (AS 3959 - 2009)

<table>
<thead>
<tr>
<th>Bushfire Attack Level</th>
<th>BAL - LOW</th>
<th>BAL - 12.5</th>
<th>BAL - 19</th>
<th>BAL - 29</th>
<th>BAL - 40</th>
<th>BAL - FZ</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Aluminium Doors</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Framing</td>
<td>No special requirements at this level</td>
<td>Aluminium</td>
<td>Aluminium</td>
<td>Aluminium</td>
<td>Aluminium</td>
<td>Doors not available at this BAL testing required. Use roller shutters.</td>
</tr>
<tr>
<td>Glazing</td>
<td>As above</td>
<td>4mm safety glass as a minimum</td>
<td>5mm toughened glass as a minimum</td>
<td>6mm toughened glass as a minimum</td>
<td>6mm toughened glass as a minimum</td>
<td>As above</td>
</tr>
<tr>
<td>Hardware</td>
<td>As above</td>
<td>Standard</td>
<td>Standard</td>
<td>Externally fitted hardware that supports the panel in its functions of opening and closing shall be metal.</td>
<td>All hardware to be metal.</td>
<td>As above</td>
</tr>
<tr>
<td>Seals</td>
<td>As above</td>
<td>Standard</td>
<td>Standard</td>
<td>Standard</td>
<td>Seals with a flammability index of less than 5 as for Windows.</td>
<td>As above</td>
</tr>
<tr>
<td>Screening</td>
<td>As above</td>
<td>There is no bushfire requirement to screen to openable doors. However, if screened, the screens shall be a mesh made of corrosion-resistant steel, bronze or aluminium.</td>
<td>There is no bushfire requirement to screen to openable doors. However, if screened, the screens shall be a mesh made of corrosion-resistant steel, bronze or aluminium.</td>
<td>Where glazing is less than 400mm from ground, deck/verandah, roof or awning structure then that portion of the glass panels will require screening with a mesh with a maximum aperture of 2mm, made of corrosion-resistant steel, bronze or aluminium. Screen to be external. <strong>Note:</strong> For sliding doors, no screening or solid panel to 400mm required.</td>
<td>For Hinged and Sliding Doors both the fixed and openable portions of doors are to be screened by a mesh with a maximum aperture of 2mm made of corrosion-resistant steel or bronze. Screen to be external.</td>
<td>As above</td>
</tr>
</tbody>
</table>
Australian Building Standards

To comply with the Building Code of Australia (BCA) which is a document produced and maintained by the Australian Building Codes Board (ABCB) on behalf of the Australian Government and each State and Territory Government, windows sold into residential applications must comply with a number of Australian Standards.

The major Australian Standards influencing window design include:

- AS 2047 Windows in Buildings – Selection and Installation
- AS 4055 Wind Loads for Housing
- AS 1288 Glass in Buildings – Selection and Installation

Windows complying to AS 2047 must be labelled by the manufacturer identifying the design performance of the window, N1 to N6, also the water resistance rating.

Example of the Dowell Performance Label:

Note:
For residential buildings it is the responsibility of the purchaser (building designer or builder) to nominate the design performance requirements for the building when ordering or requesting a quote for the windows from the window supplier.

It is important that the correct design performance requirements are received by Dowell prior to quotation being submitted.

### Table 1: Window Performance Criteria - Regions A and B

<table>
<thead>
<tr>
<th>Description</th>
<th>Design Gust Wind Speed (Permissible Stress) (m/sec)</th>
<th>Permissible Stress Pressure Pa's</th>
<th>Water Penetration Pa's</th>
<th>Serviceability Limit State Design Pa's</th>
<th>Ultimate Limit State Design Pa's</th>
<th>Design Gust Wind Speed Ultimate State (m/sec)</th>
<th>Water Penetration Pa's</th>
</tr>
</thead>
<tbody>
<tr>
<td>N1</td>
<td>W28</td>
<td>500</td>
<td>150</td>
<td>400</td>
<td>700</td>
<td>34</td>
<td>150</td>
</tr>
<tr>
<td>N2</td>
<td>W33</td>
<td>700</td>
<td>150</td>
<td>400</td>
<td>1000</td>
<td>40</td>
<td>150</td>
</tr>
<tr>
<td>N3</td>
<td>W41</td>
<td>1000</td>
<td>150</td>
<td>600</td>
<td>1500</td>
<td>50</td>
<td>150</td>
</tr>
<tr>
<td>N4</td>
<td>W50</td>
<td>1500</td>
<td>200</td>
<td>900</td>
<td>2200</td>
<td>61</td>
<td>200</td>
</tr>
<tr>
<td>N5</td>
<td>W60</td>
<td>2200</td>
<td>300</td>
<td>1300</td>
<td>3300</td>
<td>74</td>
<td>300</td>
</tr>
<tr>
<td>N6</td>
<td>W70</td>
<td>3000</td>
<td>450</td>
<td>1800</td>
<td>4400</td>
<td>86</td>
<td>450</td>
</tr>
</tbody>
</table>

### Table 2: Window Performance Criteria - Regions C and D

<table>
<thead>
<tr>
<th>Description</th>
<th>Design Wind Pressure (Pa) Serviceability</th>
<th>Permissible Stress Pressure Pa's</th>
<th>Design Wind Pressure (Pa) Ultimate</th>
<th>Water Penetration Resistance (Pa)</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1</td>
<td>800</td>
<td>1400</td>
<td>2000</td>
<td>150</td>
</tr>
<tr>
<td>C2</td>
<td>1200</td>
<td>2000</td>
<td>3000</td>
<td>200</td>
</tr>
<tr>
<td>C3</td>
<td>1800</td>
<td>2900</td>
<td>4400</td>
<td>300</td>
</tr>
<tr>
<td>C4</td>
<td>2500</td>
<td>4000</td>
<td>6000</td>
<td>450</td>
</tr>
</tbody>
</table>

Note:
For cyclonic regions, ie regions C and D, the design wind pressure shall be in accordance with AS 1170.2.
Permissible stress pressures are the design pressures we are familiar with and have used up until the revised standards AS 4055 – 2006 ‘wind load for housing’ and AS 1288 – 2006 glass in building were released in early 2006. The builder or designer is within rights to quote any one of the values listed above.
If it is not specified in the N1 to N6 or C1 to C4 bands we need to qualify which category the Pa rating refers to, Permissible, Serviceability or Ultimate Limit State. ALWAYS ASK IF YOU ARE NOT SURE.
Doors and Windows
Technical Details
Sliding Windows

Dowell Aluminium Sliding Windows give you excellent ventilation and an elegant appearance, offering the perfect combination of style, function and value for money.

**Features**
- Durable low-maintenance, easy-clean aluminium profiles.
- Self lubricating stainless steel ball bearing roller system for smooth sash operation.
- Sill drainage system designed for optimum performance.
- Slimline profiles for wide uninterrupted views.
- Anti-lift sash for added security.
- Full perimeter reveal flashing fin for superior reveal lining protection.
- Full perimeter sash weather seals for optimum performance.
- Moulded end gaskets at all frame joints.
- Height adjustable mullion latch.
- Full length under-sill flap for neat finish and allowance for building settlement.
- Easy coupling to the Dowell range of windows and doors.
- Products available in Double Glazed configurations in some states.*

**Hardware**
- Mullion Lock fitted as standard.
- Optional Keyed jamb latch available.

**Size Range**

**(N1-N5) Standard Brick**

<table>
<thead>
<tr>
<th>STUD OPENING</th>
<th>(670-3070)</th>
<th>WINDOW</th>
</tr>
</thead>
<tbody>
<tr>
<td>660 7 600</td>
<td>DS0606</td>
<td>DS0606</td>
</tr>
<tr>
<td>920 19 857</td>
<td>DS0906</td>
<td>DS0906</td>
</tr>
<tr>
<td>1090 12 1029</td>
<td>DS1006</td>
<td>DS1006</td>
</tr>
<tr>
<td>1260 14 1200</td>
<td>DS1200</td>
<td>DS1200</td>
</tr>
<tr>
<td>1435 16 1372</td>
<td>DS1406</td>
<td>DS1406</td>
</tr>
<tr>
<td>1520 17 1457</td>
<td>DS1506</td>
<td>DS1506</td>
</tr>
<tr>
<td>1660 21 1800</td>
<td>DS1806</td>
<td>DS1806</td>
</tr>
<tr>
<td>2120 24 2057</td>
<td>DS2106</td>
<td>DS2106</td>
</tr>
</tbody>
</table>

Note: For higher wind ratings, wind load graphs must be consulted.

**Optional Alternatives**

- Reverse Sash
- Bottom Sash
- Colonial C1
- Colonial C2
- All Fixed
- Flyscreens
« Sliding Windows

Head (wall above)

Jamb (typical)

Section A

2 Light (XO) Window

Note:
Some standard sizes, configurations and options
may vary from state to state please consult your
nearest sales office for further clarification.
Awning Windows

Every aspect of a Dowell Awning Window is manufactured to our exacting performance and style standards, from its smooth operation to elegantly-styled sashes.

Size Range (N1-N5) Standard Brick

<table>
<thead>
<tr>
<th>STUD OPENING</th>
<th>BRICKS</th>
<th>WINDOW</th>
</tr>
</thead>
<tbody>
<tr>
<td>660</td>
<td>7</td>
<td>600</td>
</tr>
<tr>
<td>920</td>
<td>10</td>
<td>857</td>
</tr>
<tr>
<td>1090</td>
<td>12</td>
<td>1029</td>
</tr>
<tr>
<td>1260</td>
<td>14</td>
<td>1200</td>
</tr>
<tr>
<td>1435</td>
<td>16</td>
<td>1372</td>
</tr>
<tr>
<td>1520</td>
<td>17</td>
<td>1457</td>
</tr>
<tr>
<td>1860</td>
<td>21</td>
<td>1800</td>
</tr>
<tr>
<td>1860</td>
<td>21</td>
<td>1800</td>
</tr>
<tr>
<td>2120</td>
<td>24</td>
<td>2057</td>
</tr>
<tr>
<td>2120</td>
<td>24</td>
<td>2057</td>
</tr>
</tbody>
</table>

Note: Cam handles required to all 2057 high FH sashes.

Key: ★ = NOT FOR N5; # = NOT FOR N4 and N5; M = Midrail; 4 = 4mm thick glass; 5 = 5mm thick glass; † = Not available in Double Glazing; ◊ = Not Available in Full Height

Optional Alternatives

- Other options include double glazed windows for enhanced thermal performance.
- In some locations alternative awning window frames are also available please consult your nearest sales office for further information.
» Awning Windows

**Features**
- Durable low-maintenance, easy-clean aluminium profiles.
- Integrated tubular mullions and transoms with concealed fixings for superior strength.
- Full width winder support for improved aesthetics.
- Solid extruded aluminium sash corner stakes.
- Patented continuous anti-rattle hook hinge system.
- Full perimeter sash seals for positive sealing.
- Moulded end gaskets at frame joints.
- Full length under-sill flap for neat finish and allowance for building settlement.
- Easy coupling to the Dowell range of windows and doors.
- Products available in Double Glazed configurations in some states.*
- Fully integrated flyscreen support.

**Hardware**
- Optional Key Lockable Winder available.

---

**Note:**
Some standard sizes, configurations and options may vary from state to state, please consult your nearest sales office for further clarification.
Sectional details are based on the Dowell Elite Awning with continuous chain winder support section. In some locations these sectional details may vary or our 9000 Series Awning window may be offered as standard. Please consult your nearest sales office for clarification. For further installation details on the Dowell Awning Window please refer to our website www.dowell.com.au
Double Hung Windows

The Double Hung Window has played an integral role in Australian architecture for generations, combining classic appearance with simple, reliable functionality.

Features
- Durable low-maintenance, easy-clean aluminium profiles.
- High quality sash suspension systems for smooth operation.
- Frame corner gaskets for superior sealing.
- Full length under-sill flap for neat finish and allowance for building settlement.

Hardware
- Cam locks fitted as standard.
- Optional keyed cam locks available.

The Double Hung Window has played an integral role in Australian architecture for generations, combining classic appearance with simple, reliable functionality.

Sizing Chart (N1-N4) Standard Brick

<table>
<thead>
<tr>
<th>STUD OPENING</th>
<th>670</th>
<th>910</th>
<th>1150</th>
<th>1510</th>
<th>1870</th>
<th>2110</th>
<th>2470</th>
<th>2710</th>
</tr>
</thead>
<tbody>
<tr>
<td>BRICKS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2½</td>
<td>3½</td>
<td>4½</td>
<td>6</td>
<td>7½</td>
<td>8½</td>
<td>10</td>
<td>11</td>
</tr>
<tr>
<td>WINDOW</td>
<td>610</td>
<td>850</td>
<td>1090</td>
<td>1400</td>
<td>1810</td>
<td>2050</td>
<td>2410</td>
<td>2650</td>
</tr>
<tr>
<td>920</td>
<td>10</td>
<td>857</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1090</td>
<td>12</td>
<td>1029</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1029</td>
<td>14</td>
<td>1200</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1435</td>
<td>16</td>
<td>1372</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1520</td>
<td>17</td>
<td>1457</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1860</td>
<td>21</td>
<td>1800</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2120</td>
<td>24</td>
<td>2057</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Some standard sizes, configurations and options may vary from state to state, please consult your nearest sales office for further clarification.

Key: M = Midrail 4 = 4mm thick glass 5 = 5mm thick glass

Optional Alternatives
- Other midrail options may be available please consult your nearest sales office for further details.
- Optional single hung configuration bottom opening available at some locations please consult your nearest sales office for further clarification.
» Double Hung Windows

- **Head Flashing** by builder
- **Architrave** by builder
- **Lintels**
- **Plasterboard**
- **Weather pile**
- **Head and sill**
- **Top rail**
- **Top sash**
- **Bottom rail**
- **Bottom sash**
- **Spring balance**
- **Concealed coupler**
- **Fixed light adapter**
- **Sash stile**
- **Jamb**
- **External sill flap**

**Section B**

**Section A**

**Elevation** (Not to scale) DFD

10mm nom

**Plan**

**Head (Wall Above)**

- **Aluminium window frame**
- **Open perpend**
- **Caulking by builder**
- **8 mm**

**Jamb (Typical)**

- **Stud Opening Width** = Window Width + 60mm nom
- **Stud Opening** = Window Height + 60mm nom

**Packing at fixing points**

- **Pre fitted timber reveal**

**Sealant by Builder**

- **Brickwork**

**Clinch**

- **Head flashing by builder**
- **Architrave by builder**
- **Lintels**
- **Plasterboard**
- **Weather pile**
- **Top sash**
- **Top rail**
- **Bottom rail**
- **Bottom sash**
- **Spring balance**
- **Concealed coupler**
- **Fixed light adapter**
- **Sash stile**
- **Jamb**

**External sill flap**

10mm nom

**Packing at fixing points**

- **Pre fitted timber reveal**

**Sealant by Builder**

- **Brickwork**

**Clinch**
# Casement Windows

## Size Range (N1-N5, C1-C2)

<table>
<thead>
<tr>
<th>STUD OPENING</th>
<th>670</th>
<th>910</th>
<th>1270</th>
<th>1270</th>
<th>1510</th>
<th>1510</th>
<th>1870</th>
<th>2110</th>
<th>2470</th>
<th>2710</th>
</tr>
</thead>
<tbody>
<tr>
<td>WINDOW</td>
<td>610</td>
<td>850</td>
<td>1210</td>
<td>1210</td>
<td>1450</td>
<td>1450</td>
<td>1810</td>
<td>2050</td>
<td>2410</td>
<td>2650</td>
</tr>
<tr>
<td>BRICKS</td>
<td>2½</td>
<td>3½</td>
<td>5</td>
<td>5</td>
<td>6</td>
<td>6</td>
<td>7½</td>
<td>8½</td>
<td>10</td>
<td>11</td>
</tr>
</tbody>
</table>

### Optional Alternatives

- Casement
- Fixed Light/Casement
- Fixed Light/Fixed Light
- All Casement
- Colonial C1
- Colonial C2
- Flyscreens

Note: Casement windows are not available in Double Glazing.

Note:
Some standard sizes, configurations and options may vary from state to state, please consult your nearest sales office for further clarification.
Manufactured to exacting standards of appearance and performance, the Dowell Casement Window is a classic design that beautifully complements both traditional and modern décor.

**Features**
- Durable low maintenance, easy-clean aluminium profiles.
- Integrated tubular mullions and transoms with concealed fixing for superior strength.
- Full width winder support for improved aesthetics.
- Solid extruded aluminium sash corner stakes.
- Low E glazing optional for increased energy efficiency.
- Sealed casement stays for improved durability and smooth operation.
- Full perimeter sash seals for positive sealing.
- Fully open sash position allows external glass cleaning from inside.
- Patented moulded end gaskets at all frame joints.
- Full length under-sill flap for neat finish and allowance for building settlement (optional).

**Hardware**
- Premium quality Casement Operator fitted as standard.

---

**Head (wall above)**

**Casement shown**

**Sill (typical)**

Awning shown (refer inset for casement)
Fixed Light Suite

Dowell Fixed Light Premium Adaptor Frame Capabilities
The new Dowell Fixed Light has been designed to significantly increase Dowell's ability to meet our customer's need in respect of fixed light glazing capabilities and adaptability of our product range as detailed below:

Fixed Light Capabilities
1. Fixed panel sizes, span limitations and water penetration performance requirements significantly increased over our standard sliding, awning and double hung window suites (refer to Boral test reports for further details).
2. Glazing thickness options greatly enhanced through our ability to offer between 4mm thick single glazing and 24mm double glazing options in this fixed light suite.
3. Significant improvement in thermal performance capabilities through our ability to offer many more glazing options over our standard residential fixed light suites as demonstrated by our thermal performance figures detailed on the WERS website (refer to Dowell WERS report April 2012 for further details).
4. The ability to couple to our Mk5 Sliding Door product as either highlights or sidelight options to this product.

Premium Frame Adaptor Capabilities
Dowell’s new Fixed Light Suite also offers a premium frame adaptor option for enhancing our existing core window products including:
- Dowell Enhanced Sliding Window Suite
- Dowell Elite Awning/Casement Suite
- Dowell H Series Double Hung Suite
- Dowell Sashless Double Hung Suite
- Dowell Louvre Window Suite.

The new Dowell Fixed Light and Premium Frame Adaptor suite has been specifically designed to "bridge" the gap between standard residential and premium architectural applications in our residential projects to allow us the ability to meet our ever growing customer needs for flexibility in the manufacture of special product requirements.

Size Range
A comprehensive size and configuration range is available in the Dowell Fixed Light product, please consult your local sales office.

Features
- Suits 152mm Louvre Blades.
- Can be coupled to most Dowell products easily.
- Please refer to your nearest sales office for more information.
- Suitable for residential and commercial applications.
- Reveal frame for installation into domestic buildings.

Note:
Some standard sizes, configurations and options may vary from state to state please consult your nearest sales office for further clarification.
Dowell can provide a wide range of panel configurations and sizes, please consult your nearest Dowell Sales Office for more information.
Louvre Windows

The Dowell Louvre system introduces a new dimension in multi-framing application, allowing designers and fabricators to install adjustable glass louvres that will perform alongside conventional window and door systems.

Standard Options

<table>
<thead>
<tr>
<th>Glass</th>
<th>Aluminium</th>
<th>Timber</th>
</tr>
</thead>
<tbody>
<tr>
<td>152mm in clear, toned, obscure or low E glass.</td>
<td>152mm extruded aluminium with weatherstrips.</td>
<td>152mm western red and kwila blades are available.</td>
</tr>
</tbody>
</table>

Mixed

A combination of glass, aluminium and or timber blades can be mixed to achieve the required appearance or finish suitable for the application.

Security Options

Keyed locking is available as an option.
Security bars are available to fit 152mm Blade Frames as an option.

Features

- Suits 152mm Louvre Blades.
- Can be coupled to most Dowell products easily.
- Please refer to your nearest sales office for more information.
- Suitable for residential and commercial applications.
- Reveal frame for installation into domestic buildings.
- Insect and security screens are an integral part of the design.
- Arched Hilite Frames can be constructed with extrusions specifically designed for curving.

Size Range

A comprehensive size and configuration range is available in the Dowell Fixed Light product, please consult your local sales office.

Note:
Some standard sizes, configurations and options may vary from state to state please consult your nearest sales office for further clarification.
Sliding Doors

Dowell Sliding Doors are available in a wide range of sizes and configurations, making for a huge variety of versatile solutions.

Features

- Durable low-maintenance, easy-clean aluminium profiles.
- Reveal flashing fins on jambs and head for weather protection.
- Sill valve draining system for superior performance.
- Optional Sump Sill for demanding exposure conditions.
- Fully adjustable, non corrosive ball bearing roller system for smooth panel operation.
- Available in 2 panel sliding (XO) 3 panel OXO (XO), and bi-parting sliding (OXO) combinations.
- Reversal of sliding panel configuration on all 2 and 3 panel sliding combinations possible after installation.
- High quality corner gaskets at frame joints for superior sealing.
- Products available in Double Glazed configurations in some states.*
- Optional fly doors and safety grilles available.

Hardware

- Snib latch fitted as standard.
- Optional Keyed latch available.
- Optional Keyed deadlock available.

Size Range (N1-N5)

<table>
<thead>
<tr>
<th>STUD OPENING</th>
<th>DOOR</th>
<th>STUD OPENING</th>
<th>DOOR</th>
<th>STUD OPENING</th>
<th>DOOR</th>
</tr>
</thead>
<tbody>
<tr>
<td>2140 (N1-N4)</td>
<td>1510</td>
<td>2175 (N5)</td>
<td>1450</td>
<td>2100 (N1-N4)</td>
<td>1810</td>
</tr>
<tr>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DSD2115-2</td>
<td></td>
<td>DSD2118-2</td>
<td></td>
<td>DSD2121-2</td>
<td></td>
</tr>
<tr>
<td>DSD2124-2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Standard handling may vary from state to state. Please consult your nearest sales office for clarification.

Optional Alternatives

Reverse Hand  Colonial C1  Barrier Grille Screen Door  Screen Door (Midrail Optional)  Reverse Panel

Note:
Some standard sizes, configurations and options may vary from state to state, please consult your nearest sales office for further clarification.
» Sliding Doors

Note:
Standard hardware options vary in different locations.
Our standard sill as shown has a 200Pa water rating and is 89mm wide x 42mm deep internal leg in dimension.
Dowell also offers sump sill and subsill options where higher water penetration ratings are required.
Option for double glazed doors for enhanced thermal performance is available.
For further information on the Dowell Sliding Door contact your nearest Dowell sales office or refer to the Dowell website www.dowell.com.au
Alfresco Stacking Doors

The slim and sleek lines of the Alfresco Stacking Door offer three and six panel configurations and are available in a variety of panel widths to suit just about any room size.

**Features**
- Highly functional Alfresco Stacking Doors are resilient and durable in most types of weather.
- They require minimal maintenance.
- Dowell’s modern technology is evident in the design of the Alfresco Stacking Door.
- Products available in Double Glazed configurations in some states.*

### Size Range (N1-N5)

<table>
<thead>
<tr>
<th>STUD OPENING</th>
<th>2208</th>
<th>2748</th>
<th>3108</th>
<th>3648</th>
</tr>
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<tr>
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<td>DA02127-3</td>
<td>DA02130-3</td>
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<table>
<thead>
<tr>
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<th>4344</th>
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<tr>
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<td></td>
</tr>
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<td></td>
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<td>DA02154-6</td>
</tr>
</tbody>
</table>

### Optional Alternatives

- Colonial C1
- Barrier Grille Screen Door
- Screen Door (Midrail Optional)
- Reverse Hand Panel
- Federation Bars

*Note: Some standard sizes, configurations and options may vary from state to state, please consult your nearest sales office for further clarification.
» Alfresco Stacking Doors

Note: For further installation details on the Alfresco Stacking Door refer to our website www.dowell.com.au
Alfresco Corner Stacking Door

Dowell Corner Alfresco Door have a modern alfresco appearance which is created by designing the indoor/outdoor areas to integrate seamlessly for a truly sophisticated outlook.

This eye catching addition to the Dowell range is available in flexible formats and sizes, creating a visually larger opening for easy access to balconies, patios or to open up a courtyard, pool area or garden.

Features

- Highly functional and designed to operate smoothly day after day, Dowell Corner Alfresco Doors are resilient and durable in all types of weather.
- They require minimal maintenance.
- Dowell’s modern technology is evident in the design of the Dowell Alfresco Corner Stacking Door.
- Products available in Double Glazed configurations in some states.*

Dowell Corner Stacker - Standard Sizes - Internal Corners

<table>
<thead>
<tr>
<th>BRICK OPENING</th>
<th>BW1</th>
<th>BW2</th>
<th>BW1</th>
<th>BW2</th>
<th>BW1</th>
<th>BW2</th>
<th>BW1</th>
<th>BW2</th>
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</thead>
<tbody>
<tr>
<td>DOOR WIDTH</td>
<td>W1</td>
<td>W2</td>
<td>W1</td>
<td>W2</td>
<td>W1</td>
<td>W2</td>
<td>W1</td>
<td>W2</td>
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<tr>
<td></td>
<td>2136</td>
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<td>2676</td>
<td>2720</td>
<td>3036</td>
<td>3080</td>
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DCSSD2121 (INT)  DCSSD2127 (INT)  DCSSD2130 (INT)  DCSSD2136 (INT)

Dowell Corner Stacker - Standard Sizes - External Corners

<table>
<thead>
<tr>
<th>BRICK OPENING</th>
<th>BW1</th>
<th>BW2</th>
<th>BW1</th>
<th>BW2</th>
<th>BW1</th>
<th>BW2</th>
<th>BW1</th>
<th>BW2</th>
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</thead>
<tbody>
<tr>
<td>DOOR WIDTH</td>
<td>W1</td>
<td>W2</td>
<td>W1</td>
<td>W2</td>
<td>W1</td>
<td>W2</td>
<td>W1</td>
<td>W2</td>
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DCSSD2121 (EXT)  DCSSD2127 (EXT)  DCSSD2130 (EXT)  DCSSD2136 (EXT)

Note:
Above sizes are based on Dowell Standard Toughened Glass Panels. These sizes are Not Applicable in Queensland.
» Alfresco Corner Stacking Door

**Fig 5: Internal Corner**

**Fig 6: External Corner**
Plan - Internal Corner

Recommended Sill Support Installation Detail - Typical Slab Edge With 150mm Wide Rebate
(brick veneer construction)
» Alfresco Corner Stacking Door

**Legend:**
- BW = Brickwork
- BR = Brick Return
- SS = Stud Size

**Outside**
- Door size = BW + 15
- Stud opening = BW (170 for 90mm stud) (150 for 70mm stud)

**Inside**
- Stud opening = BW

**Note:**
- Finished floor level of building slab to continue externally to inside face of brickwork to support stacker door sill.

**Stud opening = BW**
- (170 for 90mm stud) (150 for 70mm stud)

**Legend:**
- BW = Brickwork
- BR = Brick Return
- SS = Stud Size

**Plan - External Corner**
- Door size = BW - 95
- Stud opening = BW - 270

**Note:**
- Stud opening will vary depending on stud size.

**Note:**
- Finished floor level of building slab to continue externally to inside face of brickwork to support stacker door sill.

**Legend:**
- BW = Brickwork
- BR = Brick Return
- SS = Stud Size

**Plan - External Return Corner**
- Door size = BW - 95
- Stud opening = BW - 270 (for 90mm stud/240 wall)

**Note:**
- Stud opening will vary depending on stud size.

**Note:**
- Finished floor level of building slab to continue externally to inside face of brickwork to support stacker door sill.
French Doors

Dowell French Doors are available in a wide range of standard configurations and have the added versatility of coupling with the Dowell windows range.

Features
- Durable low-maintenance, easy-clean aluminium profiles.
- Glass jacking screws to prevent door sag.
- Heavy duty hinges.
- Concealed door bolts for improved security and aesthetics.
- Products available in Double Glazed configurations in some states.*
- Easy coupling to the Dowell range of windows.

Hardware
- Keyed handle set fitted as standard.
- Optional powder coated and stainless steel finishes available.

Size Range (N1-N5)

<table>
<thead>
<tr>
<th>STUD OPENING</th>
<th>910</th>
<th>910</th>
<th>1270</th>
<th>1510</th>
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<tr>
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<td>1½</td>
<td>1½</td>
<td>5</td>
<td>6</td>
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<tr>
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<td>850</td>
<td>850</td>
<td>1210</td>
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<table>
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<th>2110</th>
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<th>2710</th>
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<tr>
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<td>8½</td>
<td>10</td>
<td>11</td>
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<td>1810</td>
<td>2050</td>
<td>2410</td>
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<table>
<thead>
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<tbody>
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<td>850</td>
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<tr>
<td>1210</td>
<td>1210</td>
</tr>
<tr>
<td>1450</td>
<td>1450</td>
</tr>
</tbody>
</table>

Optional Alternatives

- Colonial Bars
- Highlights

Note:
Arch head highlights, fixed and awning window highlights are available.
Fixed glass sidelights, awning, double hung or louvre window coupled sidelights are also available options.
Screen doors and Barrier grilles available.
» French Doors

**Vertical Arrangement (Section A)**

- **Frame Height = H**
- **Door rail**
- **Glazing bead**
- **Glass**
- **Glazing wedge**
- **Open-out sill**

**Single Door Open-Out (Right Hand Hinged)**

**Head (wall above)**
- **Door leaf**
- **Caulking by builder**

**Sill (concrete slab)**
- **Brick sill**
- **Sill flashing by builder**

**Jamb (typical)**
- **Stud frame**
- **Jamb flashing by builder**
- **Sealant by builder**

**Stud Opening Width** = **Door Frame Width + 60mm**

- **Packing at fixing points**
- **Pre-fitted timber reveal**

**Frame Head = H**
- **Perimeter door seal**
- **Timber reveal**

**Open-pend**
- **Timber floor**
- **Glazing vinyl**
- **Glass setting block - 20mm**

**20mm per side**
- **Aluminium door frame**

**Open = Door Frame Height + 40mm**
- **Head flashing by builder**
- **Lintels**
- **Plasterboard**

**Concrete slab**
- **Brick work**
- **Jamb flashing by builder**

**Stud Opening = Door Frame Height + 40mm**
- **Timber reveal by builder**

**Door rail**
- **Glazing bead**
- **Glass**

**Timber reveal**
- **Frame head**
- **To perimeter door seal**

**125mm**

**12mm min**

**20mm min**

**10mm nom**
Bi-Fold Doors

The Dowell Bi-Fold Door system provides an ideal opportunity to maximise living floor space and combine the benefits of Indoor/Outdoor entertaining.

Sizing Chart (N1-N4)

<table>
<thead>
<tr>
<th>STUD OPENING</th>
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<th>2470</th>
<th>3070</th>
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<tbody>
<tr>
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<td>2410</td>
<td>3010</td>
<td>3610</td>
<td>3610</td>
<td>4500</td>
</tr>
</tbody>
</table>

Features

- Robust 100mm perimeter frame.
- Centor eclipse hardware provides durability with ease of operation.
- High performance seals for exposed locations.
- Jamb Pivots designed for easy adjustment of doors without having to remove the door panels.
- A wide variety of panel configurations to suit most floor plan layouts.
- Options available subject to weather exposure limitations.
- Products available in Double Glazed configurations in some states.*
- Optional powder coated stainless steel and brass finishes available.

Note:
Some standard sizes, configurations and options may vary from state to state, please consult your nearest sales office for further clarification.

Single active leaf option is available in certain configurations please consult your nearest sales office for further information.

Note - Bi-folds open out only

* Some standard sizes, configurations and options may vary from state to state, please consult your nearest sales office for further clarification.
» Bi-Fold Doors

30mm x 50mm batten screwed and glued

Primary Fixing “A”
8mm coach bolts @ 400mm max ctrs. Provide additional intermediate fixing at stacked end/s - 75mm ctrs 300mm from jambs

Head (typical)

Outside edge of stud
Head to Engineer’s detail
Pack head level with solid packing
Timber reveal
8mm coach bolts @ 1000mm ctrs staggered with forward fixings “A”
Head infill
Access for this fixing remove jamb beads (detail) before removing head infill

Sill (typical)

Note:
Front leg of frame must be fixed to the structure or supported by the structure as shown

Sash shown in open position

Jamb (typical)

Flashing by builder
Packing
Timber reveal
Nail fix reveal @ 600mm ctrs
Jamb beads
Flashing by builder
Packing
Stud
Bay and Corner Windows

Dowell Bay Windows add a distinctive element to a traditional home, creating timeless elegance.
Bay Windows will transform your living space, opening up the room with sun filled natural light, bringing the outdoor ambience inside.

**Features**

- Ideal for maximising internal space.
- Increase light into room.
- Available in 135° and 90° configurations.

- Maximises the view from your room.
- Ideal for cross ventilation.
- A range of robust couplers to suit most windloading configurations.
- A range of product options available including; Sliding, Awning and Double Hung.

---

**Legend:**

**Window**

WF = window width (front) = BF - 95*
WS = window width (side) = BS - 95*

**Brickwork**

BF = brick wall at front
BS = brick wall at side

**Studwork**

SF = stud dimension (front)
SS = stud dimension (side)

*Note: deduct for couplers for actual window size

---

**Plan - Corner Window Set Out**

**Legend:**

WF = window width (front) = BF - 190*
WS = window width (side) = BS - 95*

**Brickwork**

BF = brick wall at front
BS = brick wall at side

**Studwork**

SF = stud dimension (front)
SS = stud dimension (side)

*Note: deduct for couplers for actual window size

---

**Plan - Box Bay Window Set Out**
» Bay and Corner Windows

Legend:

**Window**
WF = window width (front) = BF - 145*
WS = window width (side) = BS - 135*
B = O/A width of bay unit = BW

**Concrete**
CF = front width concrete rebate
CB = width of back edge concrete rebate

**Brickwork**
BF = brick wall at front
BD = brick depth of bay
BS = brick wall at side
BW = brick width of bay at wall
B = brick opening at window

**Studwork**
SF = stud dimension - front
SS = stud dimension - side
S = stud opening at wall line

* Note: deduct for couplers for actual window size

Plan - Bay Window Set Out

Note: Some standard sizes, configurations and options may vary from state to state, please consult your nearest sales office for further clarification.

Timber Reveal Sizing

Typical window and door installation cross section detail showing the relationship between window/door, external brickwork, cavity, studwork and internal plaster lining.

Note this is a typical brick veneer type of structure, for cavity brick construction or clad wall structures please refer to the Dowell Installation details on our website.

Cavity Brick Construction (Jamb)
Installation Recommendations

Before Installation

- Check the Window label to ensure that the window has the appropriate “N rating” (strength/water resistance) for the installation location.
- Lift carefully from trucks, do not use slings.
- When handling or transporting, carry in a vertical position with sill at bottom. Sashes to be in closed and locked position.
- Avoid knocks and abrasions.
- Stack carefully on edge to avoid damage to finish.
- Stack in a dry place and cover to protect against paint, dust, weather, etc.

During Installation

- Check diagonal dimensions to ensure squareness of frame and opening.
- Ensure that there is sufficient clearance around perimeter of the frame before attempting to install the window. Refer to installation recommendations. If the wall condition is not shown refer to Dowell for the appropriate technical advice.
- Ensure that the aluminium frame is insulated from contact with other metals to avoid potential future corrosion of the aluminium. This could be by bitumen coating of any steelwork around the window or application of flashing membranes.
- Do not distort frames by forcing into the opening.
- Keep sashes closed whilst installing the frame.
- Aluminium windows and doors are non-loadbearing, ensure adequate clearance above head of window. Allow 12mm clearance from underside of sill to top of sill brick or tile to allow for building settlement. NOTE when green timber or large depth floor members are used this allowance should be increased or sill bricks or tiles installed after initial timber shrinkage has taken place.
- SILL MUST BE STRAIGHT AND LEVEL. Plumb jambs in both directions. Pack frame at sill and jambs only. Frame must be square and out of twist (essential for smooth operation of sashes). Check that diagonal measurements are equal. Clearance must be maintained between sill brick or tiles and the window frame as detailed.
- Ensure that fixings used are of sufficient size, length and spacing for the windloading of the particular site.
- Ensure that flashings are correctly fitted.
- Aluminium door or window frames shall not be in direct contact with brick, concrete, concrete blockwork or cement rendered surfaces, as in some circumstances this can result in severe corrosion.
- Do not stand on or place any loads on the sills or any other part of the frame. Do not use as support for scaffolding or slide material through the frames.
- Before inserting or operating sliding panels, tracks shall be brushed thoroughly to remove all dirt, cement, etc.
Installation Recommendations

After Installation

- Protect windows and doors from damage.
- If plastic wrap is provided DO NOT REMOVE until brickwork is complete.
- If adhesive plastic wrap used ensure this is removed within 120 days to avoid any glue residue adhering to glass or frame.
- Remove wet cement, mortar, paint, acids and other chemicals as they occur. WASH OFF IMMEDIATELY.
- Use soft cloths to clean to avoid scratching the surface. Do not scrape tools or trowels on frames.
- Clean up when job is complete with warm soapy water or mild detergent and rinse with clean water. Ensure that drainage slots in aluminium frames are not blocked.
- Timber framed windows are generally Protim treated to repel water and resist decay. This process is not a substitute for normal protection of timber.

Window Maintenance Requirements

- Frequency of cleaning is largely dependent on the location of the building and its proximity to industrial or marine environments, where monthly or more frequent cleaning is recommended if any deterioration of surface finish is apparent, however, in any event general cleaning should be carried out at least quarterly.

Anodised Aluminium

- All aluminium surfaces should be kept clean by prompt removal of all dust, dirt, grime and any foreign matter using clean water and a small amount of mild detergent as required. Do not under any circumstances use any abrasive type cleaning agent (Ajax or similar) or any abrasive cleaning material such as steel wool or the like as this will severely damage the anodised surface. Thoroughly wash off any residue of detergent with clean water.

Powder Coated Aluminium

- Cleaning is desirable if the finish of powder coated aluminium is to be preserved. Deterioration of the coating occurs mainly as a result of grime deposition and attack by moisture, which in a coastal environment contains chlorides and sulphur compounds.
- Deposited grime absorbs contaminated moisture like a sponge and holds it against the powder coated surface, this permits the attack to proceed thereby damaging the coating, which cannot be restored without removal.

Glass

- All glass surfaces should be kept clean by prompt removal of all dirt. Clean water should be used and in some instances the addition of a small amount of mild detergent would be of some benefit. Thoroughly wash off any detergent residue with clean water. Do not under any circumstances use any form of abrasive cleaner of any type whatsoever, as this may cause damage to the glass. Lightly sponge off any stubborn dirt being careful not to scratch the glass.
- Frequency of cleaning should be similar to that of the aluminium surfaces.

Regular Maintenance Procedures

- Cleaning of the track to remove any grit and dirt that has accumulated in the track area. Ensure that any drainage slots have not become blocked.
- A silicone spray on the track area and the woolpile seals will ensure a free and quiet operation of the sash.
- Door locks to be checked for satisfactory operation and that they are adjusted properly to suit any settlement that may have occurred in the door installation. Any loose screws to be tightened.
Brick Charts

(1) Metric standard brick (230 x 110 x 76)

Table 8: Brick Courses Chart

<table>
<thead>
<tr>
<th>No. of courses</th>
<th>Height of brickwork</th>
<th>No. of bricks</th>
<th>Opening Width</th>
</tr>
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<td>86</td>
<td>1</td>
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</tr>
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<td>2</td>
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<td>1 1/2</td>
<td>370</td>
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<td>257</td>
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<td>490</td>
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<td>343</td>
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<td>610</td>
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Commonly Used Frame Couplers

D9972
- Sliding Window
- Awning Window
- Casement Window

D9763
- Dowell Fixed Light / Sliding Door to Sliding, Awning & Casement Windows

D7708
- Sliding Window
- Awning Window
- Casement Window

D9867
- Dowell Fixed Light / Sliding Door to Sliding, Awning & Casement Windows

D9681
- Dowell Fixed Light
- Sliding Door

D8266
- Dowell Fixed Light
- Sliding Door
**Glossary**

**Air Infiltration**
Term used to describe one of the tests required by AS 2047-1996. The window shall not exceed air leakage requirements as specified for either air-conditioned buildings or non-air-conditioned buildings.

**Annealed Glass**
Glass which is cooled gradually during manufacture in an annealing operation to reduce residual stresses and strains which can be produced during cooling. This is the ordinary glass used in windows.

**Arched Head**
A curved and glazed portion of the window that is at the head of the window.

**Awning Window**
A window where the sash opens outward pivoting on or near the sash top rail.

**Bead**
Section used to retain the glass in the sash or the frame. Can be aluminium, rigid PVC or flexible PVC.

**BCA**
Building Code of Australia, document outlining building requirements in Australia.

**Brick Opening**
Opening size measured between the outside brick faces.

**Brick Veneer**
Construction where the outside skin of the wall is brickwork and the inside wall is timber stud frame.

**Built-in**
The window frame is installed as the building progresses. Window fitted into the wall as the wall is being built.

**Casement Window**
A window where the sash opens outward hinged on the side rail.

**Catalogue Number**
The code number appearing on the window brochure that denotes that particular window.

**Cavity Brick**
Describes a construction where both the outside and inside skins are brickwork.

**Cavity Closure**
An applied section usually fitted to the inside of the jamb section that extends the frame depth so that the window section spans the cavity.

**Chair Rail**
A horizontal rail fitted to windows or door (approx. 750-1000 mm above floor level).

**CKD**
“Completely Knocked Down”. Term used to describe a window or door supplied in component parts only.

**Colonial Windows**
A window that is configured to a style to recreate the early colonial style of windows. Effect can be achieved with applied bars adhered to the glass or individually glazed.

**Coupling Mullion**
A vertical coupling member used to join two windows together.

**Cover Plates**
Usually vertical cover plates used to join two windows side by side or around corner. Cover Plates are manufactured from short aluminium either flat or bent to shape.

**Daylight Opening**
The clear daylight size that is visible through a glazed window pane.

**Deflection Ratio**
AS 2047-1996 has a maximum deflection limit of span/150 for window structural members.

**Double Glazing**
Glazing that incorporates two panels, separated with an air space, for the purpose of sound or thermal insulation or both.

**Drain Slot**
A hole that is punched or drilled into the sill section that allows drainage of the sill system.

**Drain Valve**
A component that has a hinged flap at the drain slot to allow water to drain out and can close under wind pressure to prevent blow back of water through the drainage slots.

**External Glazed**
The glass is glazed from the outside of the window.

**Extrusion**
Refers to the aluminium profiles that are used in a window. An extrusion is produced from aluminium billet that is heated until soft and then pushed out through a die with an aperture of the shape of the section. Section is stretched for straightness and tempered before finishing.

**Factory Glazed**
Windows that are glazed in the factory before delivery to site.

**Federation Windows**
A window that is configured to a style to recreate the early federation style of windows. Can be federation style glazing or profiled wide appearance framing or both.

**Fixed Light**
An area of window where the glass cannot be opened.

**Fixing Lug**
A bracket used to fasten the window frame into the building.

**Flashing**
A waterproof membrane which is attached to the perimeter of the window frame to prevent water from penetrating across the frame to the inside wall of the building.

**Flashing Fin**
Also known as a reveal fin. A perimeter fin that is an integral part of the frame extrusions.

**Flyscreen**
A screen consisting of flywire and frame fitted to opening portion of window to keep out insects.

**Frame**
The main components that make up the window. Head, sill, jambs, mullion and transom.

**French Door**
A hinged door (either single or double) that opens outwards or inwards.

**Garden Window**
A special design of window that projects out beyond the building line and has a sloping glazed roof and internal shelving. Most common application is in kitchen windows.

**Glazing Leg**
The portion of the window section which is used to retain the glass in conjunction with the bead.

**Glazing Tape**
Glazing tape is the material used on the glazing leg to seat the glass against. Can be a foam tape or similar.

**Head**
The top horizontal frame member of the window.

**High Rise**
Term used to describe a multi-storey building.

**Installation**
Erection and fixing of window frame on site.

**Internal Glazed**
Glass glazed from the inside of the window.

**Jamb**
Outer vertical frame member.

**Laminated Glass**
Glass which has been subjected to a special process of bonding two or more sheets together with one or more sheets of a special plastics interlayer.

**Left Hand**
To describe a component or design. Always taken viewing the product from the outside.

**Louvre**
Fixed or adjustable slats (glass, timber or aluminium) which allows ventilation. Can be either horizontal or vertical.
Glossary

Lowlight
The portion of the window that is below the transom.

Lug
Bracket used to fasten window frame into building.

Mullion
Vertical member of a window frame other than the jambs.

NATA
National Association of Testing Authorities
The national body that test laboratories are registered with. To have NATA registration requires a test laboratory to meet and maintain stringent test standards.

Permanent vent
A part of the window that provides ventilation even when the sash is in the closed position.

Pipe Staunchion
A load bearing pipe support used to meet and maintain stringent test standards.

Prepared Opening
An opening in a building made prior to the installation of the window.

PVC (Poly Vinyl Chloride)
The material used for flexible (or rigid) glazing gaskets and weatherseals. Flexibles are soft and can take up variations in tolerances within the window.

Rail
Horizontal sash member.

Rating
The wind pressure in Pascals that the window has to perform to. Figure is obtained by reference to the Wind code for region and site exposure. AS 2047-1996 defines rating levels from N1 to N6.

Reveals
The timber surround that is factory fitted to aluminium windows.

Right Hand
To describe a component or design. Always taken viewing the product from the outside.

Roll Form
The process whereby aluminium profiles are formed by the process of using pre-finished aluminium sheet and through a series of rollers the section shape is formed.

Safety Wired Glass
A single sheet of glass with wire completely embedded in the glass.

Sash
The opening portion of a window.

Sealant
The medium used to seal joints in a window or between window and building. Can be silicone or other type of sealant. Applied from a caulking gun or similar.

Security Grille
A grille that is fitted into a special flydoor or flyscreen frame that makes it more difficult for an intruder to gain access through the door or window.

Site Glaze
Window glazed after installation of window into building.

Sliding Window
A window where the opening sash or sashes slide in a horizontal direction.

Special Window
A window with design or sizes different to the standard range.

Standard Window
A window which is manufactured to a standard design and sizes.

Stile
A vertical sash member.

Storm Mould
A section that is added externally to the frame jamb to close off cavity and take up variations in brickwork.

Stud Opening
Opening size between timber studs in a building, applies to vertical and horizontal openings.

Sub Sill
An undersill section that is used to raise the height of the sill to suit a specific building-in requirement.

Sump Sill
An undersill section applied to a window to allow window to gain sill depth to improve the water performance of the window. Standard sill drains out through this sump sill.

Test Report
A report issued by a test laboratory detailing the tests that a window has undergone. Tests procedures are to Australian Standard AS 2047-1996. Windows tested to this standard will be given a performance rating (in Pascals).

Timber Reveal
The timber surround that is factory fitted to aluminium windows.

Toughened Glass
Glass which has been subjected to special heat or chemical treatment so that the residual surface compression stress and the edge compression stress is greater than the heat strengthened glass. Also known as tempered glass, if fractured will entirely disintegrate into small relatively harmless particles.

Transom
A horizontal frame member other than the head or sill.

Unglazed
Window supplied ex factory without glass.

Visible Face
Applies to extrusions and describes the visible area remaining on the section when the section is assembled into a window.

Water Penetration
A term used to describe the water performance of a window. Part of the standard testing procedure on a window calls for a water test. A window shall not have water penetrate beyond the inner face after a 15 minute water test at a specified wind pressure. Minimum pressure is 150 Pa up to a maximum of 450 Pa.

Weather Flap
A flap system within the sill of the window that is designed to allow water to escape and to prevent wind blowing directly back through the drain slots. Not to be confused with a undersill flap which fits under the window sill to allow for building settlement.

Weep Hole
Alternative name for drain slot.

Wind Load
The wind pressure that the window has to perform to. Wind load figures are in values of Pascals (Pa). Ratings are in Pascals and refer to wind load performance that window has to comply with. Wind load varies according to location and exposure.

Window Dimension
Window frame size as shown on brochure. Size is to overall frame size, to overall reveal fin size.

Water Penetration: refers to window height

Woolpile
A woven pile weather seal used to seal sliding sashes. Pile weatherseals are highly resilient and will compensate for variations in tolerances.

Note: Window and Door dimensions are always quoted height x width.
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<tr>
<th>South Australia</th>
<th>Lonsdale</th>
<th>Victoria / Tasmania</th>
<th>Bendigo</th>
<th>Shepparton</th>
<th>Hobart</th>
<th>Albury</th>
<th>Craigieburn</th>
<th>Traralgon</th>
<th>Launceston</th>
<th>Ballarat</th>
<th>Geelong</th>
<th>Warrnambool</th>
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<td><strong>Home Ideas Centre</strong></td>
<td><strong>31 Production Drive</strong></td>
<td><strong>19 Essington Street</strong></td>
<td><strong>9 Cooper Street</strong></td>
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<td>Cnr Peachey &amp; Womma Roads</td>
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<td>188 Canterbury Road</td>
<td>Bendigo VIC 3550</td>
<td>Shepparton VIC 3630</td>
<td>Moonah TAS 7009</td>
<td>Woodonga VIC 3691</td>
<td>Craigieburn VIC 3064</td>
<td>Traralgon VIC 3844</td>
<td>262 York Street</td>
<td>Alfredton VIC 3350</td>
<td>Grovedale VIC 3216</td>
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