



# Technical Manual

**WESTERN AUSTRALIA**



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# History of Dowell

*Dowell has a history in the fabrication and supply of windows and doors to the Australian residential housing market dating back to 1857.*

With the recognition of aluminium as a manufacturing material in the post war era, Dowell was the first company 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.

With such a strong reputation for product quality and service Boral is proud to have the Dowell brand within the Boral Groups product offer to the building industry.



# Dowell Warranty

*Your Dowell Windows and Doors are warranted against defects arising from faulty workmanship for a period of 10 years from the date of delivery to site by Dowell, subject to the following conditions:*

- The customer has provided the correct windloading requirements (window rating) appropriate to the location of the building and the height and position of the windows in that building, in accordance with the then current Australian Standards.
- The product has been installed in accordance with Australian Standards AS 2047 (as amended or replaced), recognised building practice and Dowell installation recommendations.
- This warranty does not extend to products that are installed in contact with a continuously damp or moist building environment or to corrosion or deterioration of products exposed to marine (salt) or heavy industrial affected environments (1).
- The product has been installed and maintained in accordance with Dowell recommendations.
- The product has not been subject to misuse, physical abuse or neglect.
- Manufacturing standards and tolerances (as outlined in AS 2047) and industry variations in the colour of aluminium and timber componentry will not be accepted as defects.



- Dowell accepts no responsibility for glass breakage (except for faulty workmanship or materials).
- Dowell accepts no liability for thermal cracking of glass, which is not uncommon in thermally efficient glasses such as low 'e' coated glass products (2).
- Moving parts which wear out as a result of normal use are warranted for three (3) years.
- Tarnish or excessive wear of soft finishes such as Bronze, Brass and other Antique finishes are not covered by this warranty as deterioration is possible under some climatic conditions, frequency of use or other factors.
- This warranty is limited to the repair or replacement of the faulty product at the discretion of Dowell but does not extend to the installation or re-finishing of a replacement product. There is no liability for any other claims damages or costs whether special or consequential or otherwise.
- Only repairs carried out by Dowell personnel or authorised agents are covered by this warranty.
- Claims under this warranty must be made within one month of the defect arising in the product. Copies of documentation showing the purchase date must be included with your written claim and forwarded to the registered office or Dowell in the state of purchase.



(1) Further information about product options for projects affected by marine or heavy Industrial environments is available from Dowell on request.  
(2) When thermally efficient glasses such as low 'e' coated products are being used, then a thermal assessment should be conducted on the glass/windows in the building prior to the glass product selection by the customer.

# Care & 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 & 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.

*Note: In marine (salt) or heavy industrial areas where the environmental conditions are more demanding, the cleaning program should be carried out on a monthly basis as an absolute minimum.*

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

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 & 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 silicone 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.

## **Awning Windows & 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.

After cleaning a light silicone spray may be applied to moving parts and wool pile to ensure quiet and smooth operation of sashes.

## 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 environment conditions such as proximity to the ocean or industrial areas.

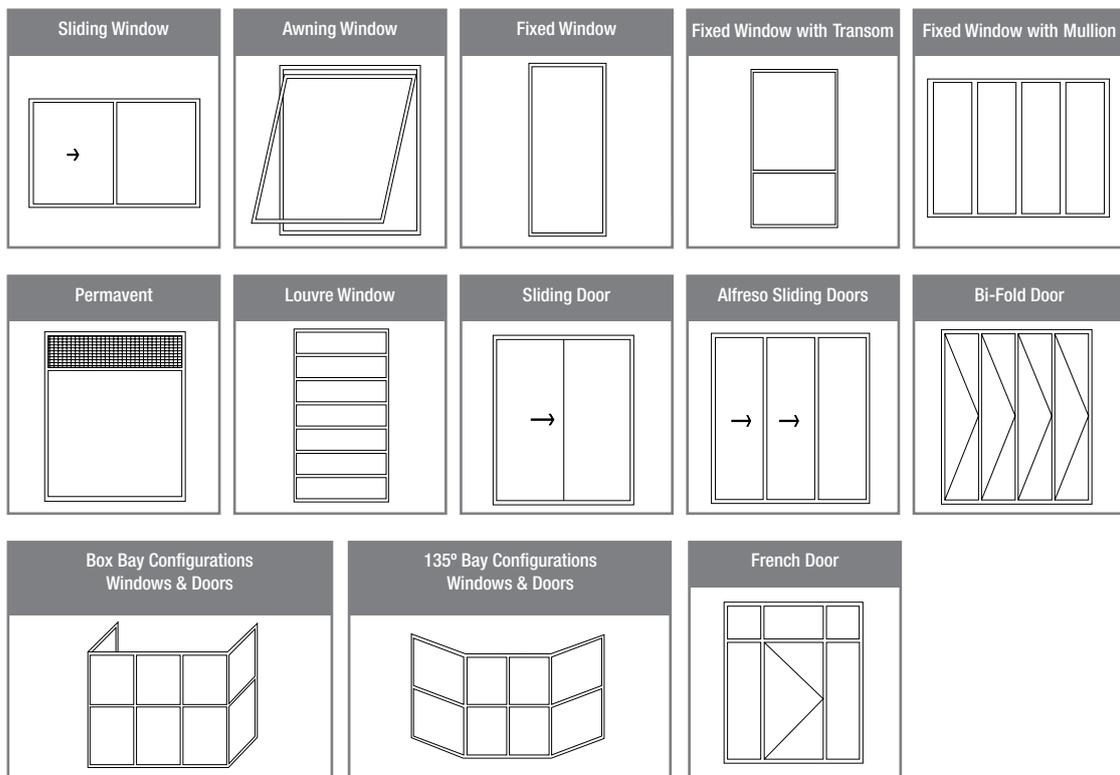
As a general guide, glass should be cleaned at least quarterly.



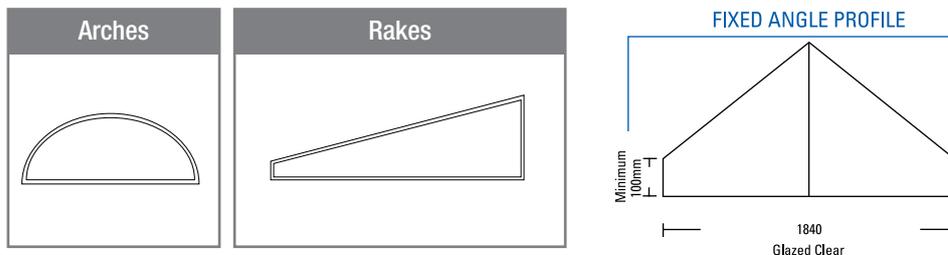
# Product Range

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

## Dowell Standard Product Offer



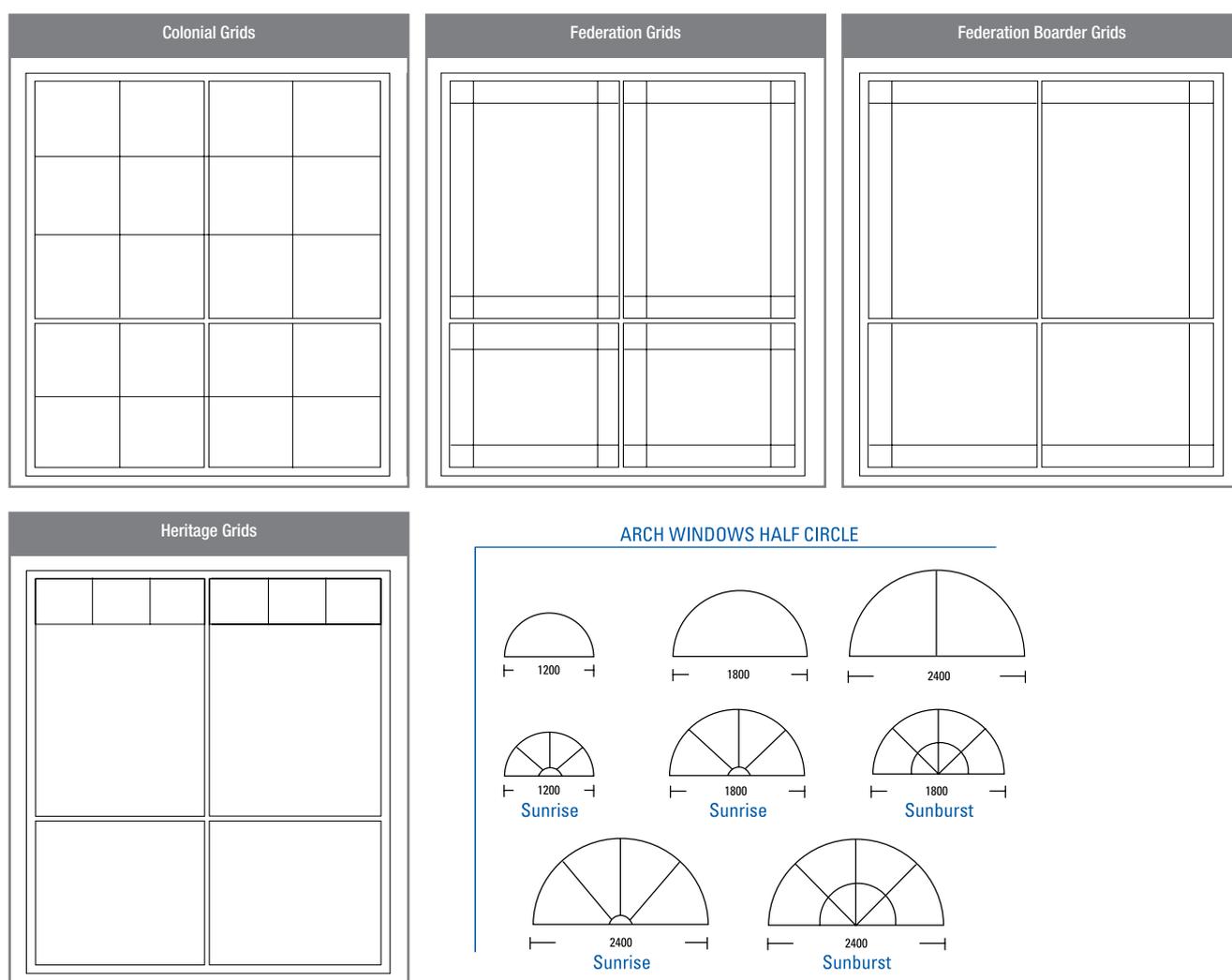
## Custom Windows



*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.*

# 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.*



*Dowell can help make the decision easier. Dowell has been creating innovative windows and doors for generations, designing products to suit Australian lifestyles and climatic conditions.*

*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.*

# Dowell Design Compliant Windows & Doors

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:

	700 Pa Performance	<b>N2</b>	This manufacturer certifies that this product was designed to meet all relevant AS2047. The design performance has been verified by NATA accredited test laboratory. This manufacturer is a member of the AWA Accreditation Program.		2007	1	2	3	4	5	6
	Water 150 Pa				2008	7	8	9	10	11	12
				A <b>BORAL</b> Company ACCREDITED Member No 011							

### 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 submitted.

## Window Performance Criteria

### Note:

- For cyclonic regions, i.e. regions C & 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. \*NOTE 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

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

**Metric Units**

Pressure		Velocity
Pa	Kg/sq.m	Km/h
100	10.2	46.5
150	15.3	56.9
200	20.4	65.7
300	30.6	80.5
400	40.8	92.9
500	51.0	103.9
600	62.2	113.8
700	71.4	123.0
800	81.6	131.8
900	91.8	139.4
1000	102.0	139.4
1100	112.2	139.4
1200	122.4	139.4
1300	132.6	139.4
1400	142.8	139.4
1500	153.0	139.4
1600	163.2	139.4
1800	183.6	139.4
2000	204.0	139.4
2200	224.4	218.0
2400	244.8	227.7
2600	265.2	237.0
2800	285.6	246.0
3000	306.0	254.5



# Dowell Noise Controlling Windows & Doors

*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)  $R_w$  values. The STC and  $R_w$  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.

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 details some typical sounds and noise levels**

Common Sound Levels	dB	Recommended interior sound levels	dB
Threshold of hearing	0	Bedrooms	30-40
Conversational speech	65	Class rooms	35-40
Average traffic (kerbside)	70	Living rooms	40-45
Busy traffic	75	Private office	40-45
Traffic intersection	80	Open office	45-50
Live band (20 metres)	105		
Threshold of pain	130		

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.

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

Window glazing option	STC rating
3mm float glass	25
4mm float glass	26
6mm float glass	28
6.38mm laminated glass	31
10.38mm laminated glass	33
Double glazed sash 4-8-4	35
Double window set up with 100mm air gap	45



# Dowell Energy Efficient Windows & Doors

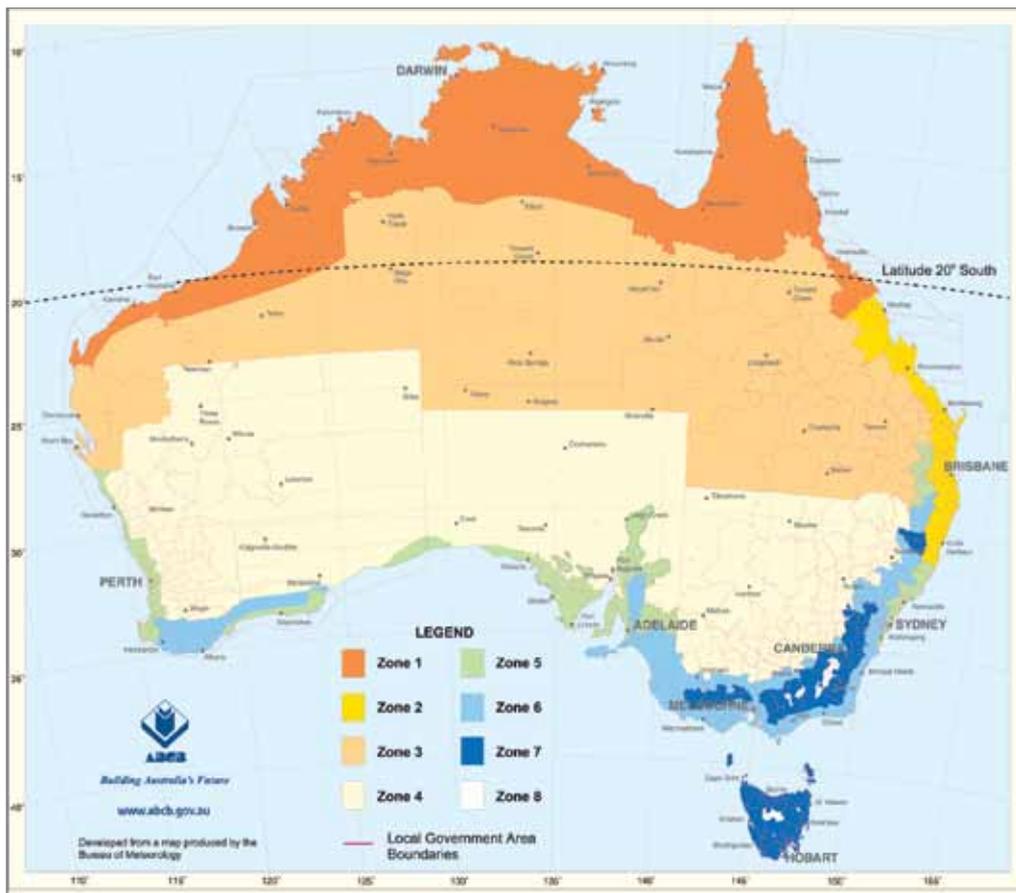
## *Why is it critical to consider the energy performance factors for the windows being installed into your home?*

Importantly the inclusion of energy efficient windows in the design of your home will increase your comfort level in both summer and winter and reduce heating and cooling energy costs.

In an average home it has been estimated 87% of the heat gain and 49% of the heat loss can be attributed to poor performing windows.

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

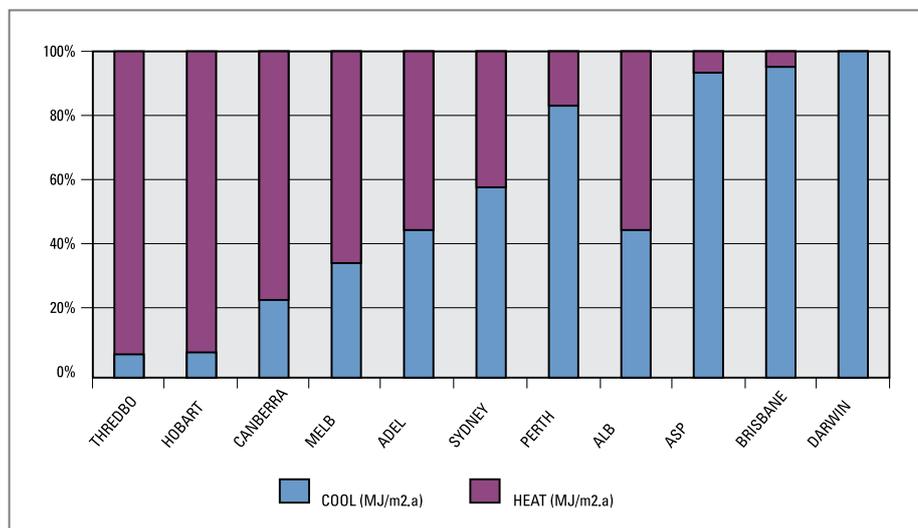
For the purpose of determining the varying housing energy requirements the Building Code of Australia has divided Australia up into 8 climate zones.



- Zone: 1 to 3 predominantly climates requiring cooling  
4 & 5 climates requiring equal focus on both cooling and heating requirements  
6 to 8 predominantly climates requiring heating

*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.*

**North Facing, Clear Glazed**



The above detail is an indicative energy usage table showing the percentage of energy usage for heating and cooling for an average house in the particular locations mentioned.

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 W/m2.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. As all Dowell aluminium window and door products are classified as 'aluminium improved' we will help you save considerably in energy consumption and therefore costs over the life of the product.

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 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](http://www.wers.net)

The energy efficiency of any particular building is the end result of all the factors contributing to the performance. i.e. 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.



The following Table is a guide highlighting some of the glazing options available for the various climate zones and glazing orientation.

*Please 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.*

	North Elevation – Shaded	North Elevation – Unshaded	West Elevation	South Elevation	East Elevation
<b>Cooling zones</b>					
<b>Zones 1,2 &amp; 3</b>					
Good	Clear float	ComforTone	ComforTone	ComforTone	ComforTone
Better	C/Plus Neutral				
Best	Clear IGU				
<b>Cooling/Heating zones</b>					
<b>Zones 4 &amp; 5</b>					
Good	Clear float	ComforTone	ComforTone	Clear Low E	ComforTone
Better	C/Plus Clear	C/Plus Clear	C/Plus Toned	Clear IGU	C/Plus Toned
Best	Clear IGU	C/Plus Toned	Toned IGU	Clear Low E IGU	Toned IGU
<b>Heating zones</b>					
<b>Zones 6 &amp; 7</b>					
Good	Clear Low E	Clear float	Clear Low E	Clear Low E	Clear Low E
Better	Clear IGU	Clear Low E	Clear Low E	Clear IGU	Clear Low E
Best	Clear Low E IGU	Clear Low E IGU	Clear Low E IGU	Clear Low E IGU	Clear Low E IGU
<b>Zone 8</b>					
Good	Clear IGU	Clear Low E	Clear Low E	Clear IGU	Clear Low E
Better	Clear Low E IGU	Clear IGU	Low E IGU	Clear IGU	Low E IGU
Best	LowE argon IGU	LowE argon IGU	LowE argon IGU	LowE argon IGU	LowE argon IGU

## Dowell Energy Efficient Windows & Doors continued

- New South Wales – BASIX (Building Sustainability Index) is based on a 'deemed to satisfy' model or NatHERS (National House Energy Rating Scheme) certified energy rating performance. Window performance data is based on NFRC values.
- Tasmania, Northern Territory and Queensland continue to work to the 2005 BCA 'deemed to satisfy', provisions which are based on a 3.5 star outcome for zones 1 to 3 and 4 stars for zones 4 to 8. Window performance data is based on ANAC values.
- ACT and South Australia – 5 star construction based on the 2007 BCA provisions using NFRC values. Alternatively the 'First Rate' computer based verification method is most commonly used in the ACT.
- WA – 5 Stars based on the 2007 BCA provisions using NFRC values.

As mentioned above there are a number of methods used to verify the energy performance of the building. The following methods cover the majority of situations.

- 2005 BCA 'deemed to satisfy'
- 2007 BCA 'deemed to satisfy'
- NatHERS (National House Energy Rating Scheme) the original modelling program developed by the CSIRO and the basis for all subsequent modelling programmes.
- AccuRate to be the NatHERS replacement (more user friendly).
- 'First Rate' computer modelling program developed by the SEAV in Victoria (Sustainable Energy Authority Victoria). The update to 'First Rate' will use the AccuRate engine to determine performance.
- BERS – computer modelling programme is mainly used in Queensland. As with 'First Rate' BERS will use the AccuRate engine to determine performance.

# AS 1288 - 2006 Glass in Buildings

*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:

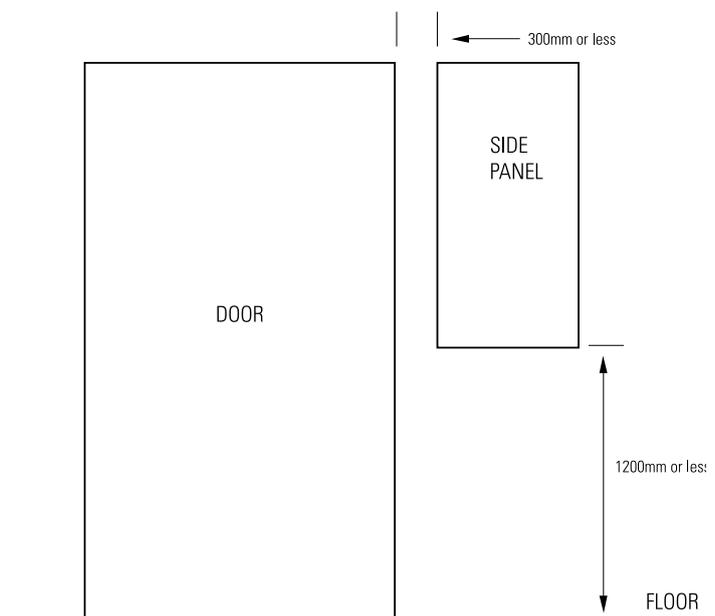
### • Doors

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.

## Door Side Panels



*Note: In Dowell standard configuration windows the Dowell computer quotation system allows for the appropriate glass for windloading requirements*

## AS 1288 – 2006 Glass in Buildings continued.

### 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.

#### • 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

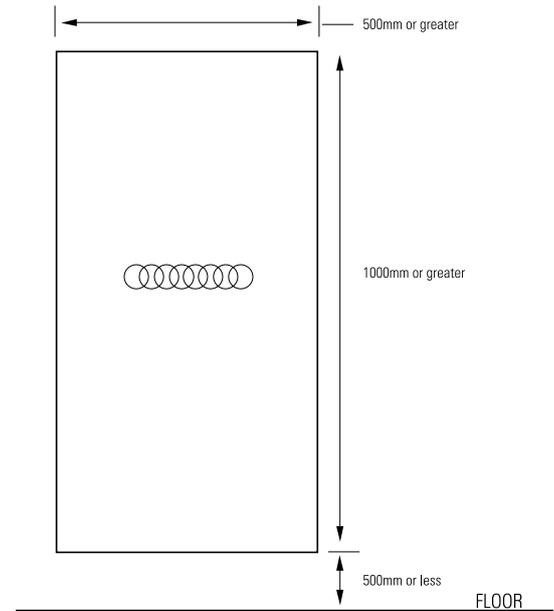
All glazing in a bathroom up to 2000mm above the floor is to be Grade 'A' safety glazing.

#### • Schools and child care centres

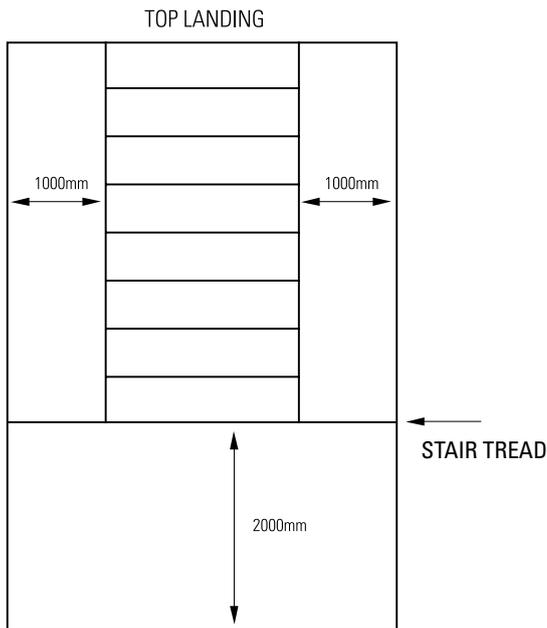
All glazing in schools and child care centres up to 1000mm above the floor is to be Grade 'A' safety glazing.

#### • Aged care buildings and retirement villages

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



## Stairway 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 gymnasiums, 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.



# Table 5.1 – AS 1288 - 2006

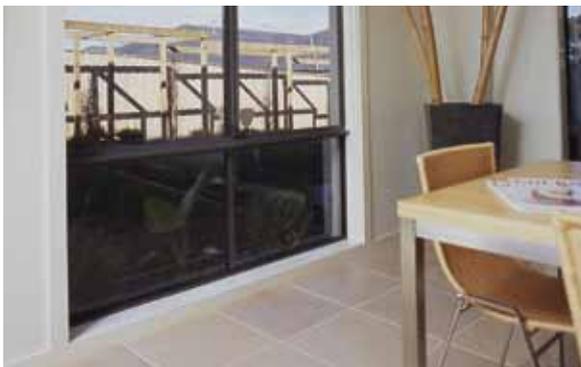
## Maximum areas of safety glass

	Type of glazing	Normal thickness (mm)	Maximum area (m <sup>2</sup> )
Grade 'A' safety glass*	Toughened and toughened laminated glass	3	1.2
		4	2.2
		5	3.0
		6	4.0
		8	6.0
		10	8.0
		12	10.0‡
	Laminated glass†	>12	Extrapolate
		5	2.2
		6	3.0
		8	5.0
		10	7.0
	Safety organic-coated mirror (vinyl backed)	12	9.0‡
		>12	Extrapolate
		4	3.0
	Safety organic-coated glass	5	3.5
		6	4.0
		3	2.0
4		2.0	
5		2.2	
6		3.0	
8		5.0	
10		7.0	
Grade 'B' safety glass*	Wired glass	12	9.0
		≥6	2.5

\* 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).

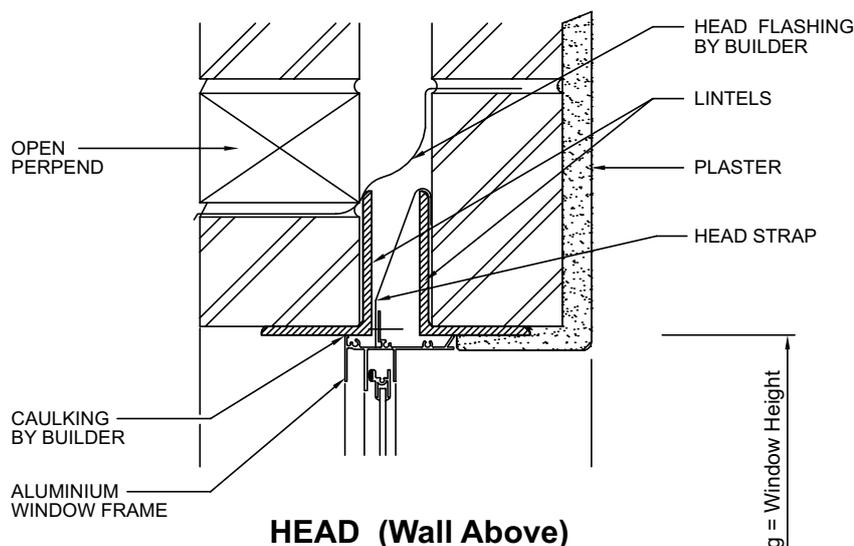
‡ This area may not be readily available.



# Window & Door Product

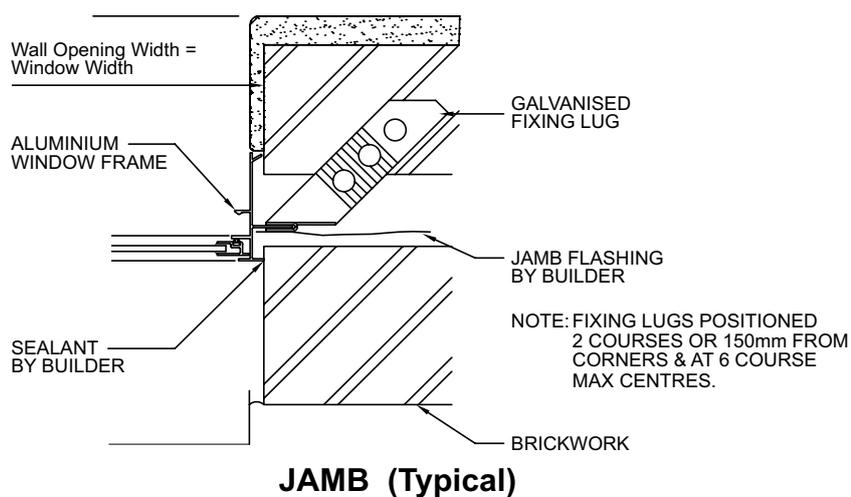
Typical window and door installation cross section detail showing the relationship between window/door, external brickwork, cavity, and internal brickwork.

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



**HEAD (Wall Above)**

**NOTE:**  
 BUILDER TO SUPPLY LINTELS  
 THAT ENSURE WINDOW FRAMES  
 BEAR NO LOAD



**JAMB (Typical)**



# AS 3959 - 2009

## Construction of Buildings in Bushfire Prone Areas

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.

Detailed on Page 24 are the various Dowell Window and Door inclusions to meet that specific BAL Level as specified in the Clients Building Approval (BA).

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.

This work practice has been developed to provide general guidance, awareness and education to AWA members only. It should not be viewed as a definitive guide to the law and should be read in conjunction with relevant legislation. While every effort has been made to ensure the information is accurate the AWA expressly disclaims all and any liability to any person for anything done in reliance on this publication. No responsibility is accepted by the AWA for any mistakes, errors or omissions in this publication.



AS 3959 - 2009 Construction of Building in Bushfire Prone Areas

Requirements for Aluminium Windows and Doors

Option A

Option B

Bushfire Attack Level	BAL - LOW	BAL - 12.5	BAL - 19	BAL - 29	BAL - 40	BAL - FZ
<b>External Screen</b>						
<b>External Screen</b>	No special requirements at this level	All windows and doors completely protected externally by screens with a mesh with a maximum aperture of 2mm, made of corrosion resistant steel, bronze or aluminium	All windows and doors completely protected externally by screens with a mesh with a maximum aperture of 2mm, made of corrosion resistant steel, bronze or aluminium	Screening externally to Windows is not a single option solution at this BAL however it is Doors	Screening externally is not a single option solution at this BAL	Screening externally is not a single option solution at this BAL
OR	OR	OR	OR	OR	OR	OR
<b>Aluminium Windows</b>						
<b>Framing</b>	No special requirements at this level	Aluminium	Aluminium	Aluminium	Aluminium	Windows not available at this BAL testing required Use roller shutters
<b>Glazing</b>	As above	Windows with sills less than 400mm from the ground, deck/verandah, roof or awning structure below shall be glazed in 4mm minimum glass	All windows glazed in 5mm minimum toughened glass	All windows glazed in 5mm minimum toughened glass	All windows glazed in 5mm minimum toughened glass	As above
<b>Hardware</b>	Standard	Externally fitted hardware that supports the sash in opening and closing shall be metal	Externally fitted hardware that supports the sash in opening and closing shall be metal	Externally fitted hardware that supports the sash in opening and closing shall be metal	All hardware to be metal	As above
<b>Seals</b>	As above	Standard	Standard	Standard	Seals (including glazing rubbers) to stiles, head and sills or thresholds shall be manufactured from materials having a flammability index no greater than 5	As above
<b>Screening</b>	As above	Sashes shall be screened internally or externally with mesh with a maximum aperture of 2mm, made of corrosion resistant steel, bronze or aluminium	Sashes shall be screened internally or externally with mesh with a maximum aperture of 2mm, made of corrosion resistant steel, bronze or aluminium	Sashes shall be screened internally or externally with mesh with a maximum aperture of 2mm, made of corrosion resistant steel, bronze or aluminium AND Where glazing is less than 400mm from ground, deck/verandah, roof or awning structure then these 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.	Both openable (sashes) and fixed panels of the window shall be screened with a mesh with a maximum aperture of 2mm, made of corrosion-resistant steel or bronze  (Not Aluminium)  Screens to be External	As above
<b>Aluminium Doors</b>						
<b>Framing</b>	No special requirements at this level	Aluminium	Aluminium	Aluminium	Aluminium	Doors not available at this BAL testing required. Use roller shutters
<b>Glazing</b>	As above	4mm toughened glass as a minimum	5mm toughened glass as a minimum	5mm toughened glass as a minimum to Bi-Fold & French doors. 6mm as a minimum to sliding doors	6mm toughened glass as a minimum	As above
<b>Hardware</b>	As above	Standard	Standard	Externally fitted hardware that supports the panel in its functions of opening and closing shall be metal	Standard	As above
<b>Seals</b>	As above	Standard	Standard	Standard	Silicone	As above
<b>Screening</b>	As above	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	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	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.	For Hinged & Bi-Fold Doors 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 or bronze AND For 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.	As above

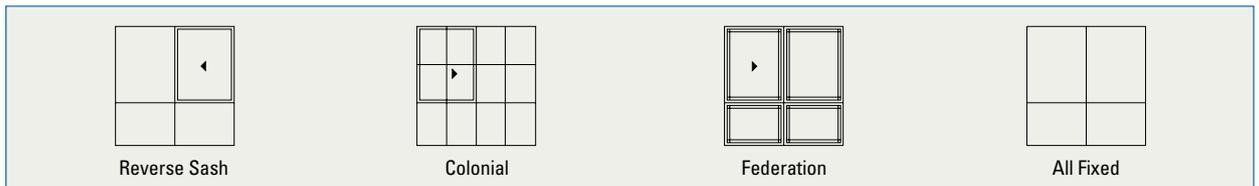
# Dowell Sliding Windows

A popular choice among builders and home owners for many years, Dowell Aluminium Sliding Windows offer the perfect combination of style, function and value for money.

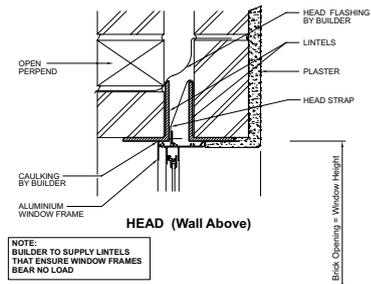
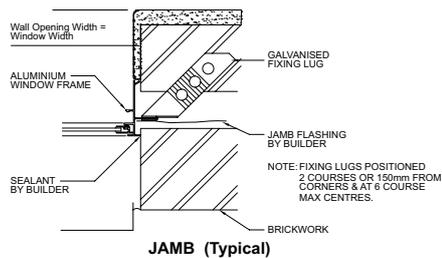
## Size Range (n1-n3)

BRICKS		2½	4	5	6	7½	8½	9	9	10	11	12½
	WINDOW	610	970	1210	1450	1810	2050	2170	2170	2410	2650	3010
6	514											
10	857											
12	1029											
14	1200											
16	1372											
18	1543											
22	1886											
25	2143											
		254T18	255T18	256T18	257H18	258H18	259T18	*259186	*251018	*251118	*2512H18	

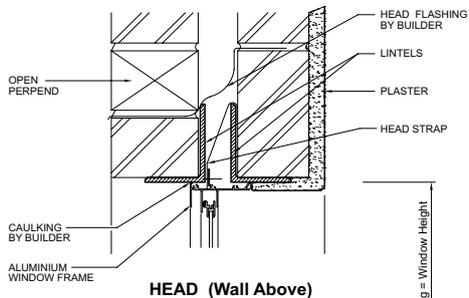
## Optional Alternatives



Key    \* = NOT FOR N4 or N5    4 = 4mm thick glass    5 = 5mm thick glass    Glass Thickness shown at N1

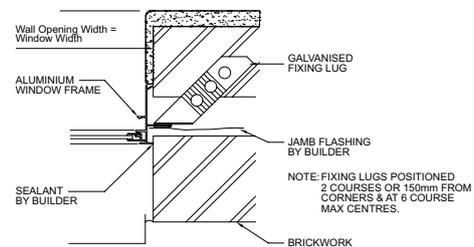


Note: Some standard sizes, configurations and options may vary from state to state please consult your nearest sales office for further clarification.

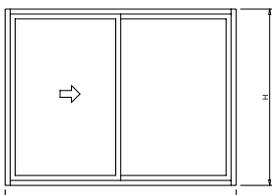


**HEAD (Wall Above)**

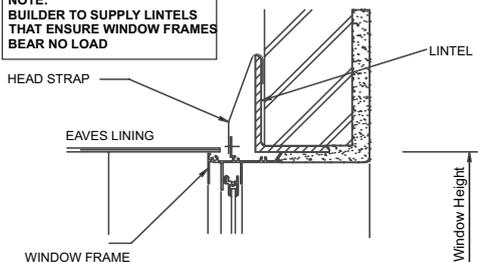
**NOTE:**  
BUILDER TO SUPPLY LINTELS  
THAT ENSURE WINDOW FRAMES  
BEAR NO LOAD



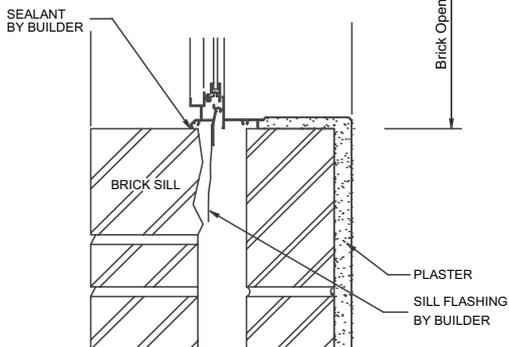
**JAMB (Typical)**



**NOTE:**  
BUILDER TO SUPPLY LINTELS  
THAT ENSURE WINDOW FRAMES  
BEAR NO LOAD



**HEAD (Eave)**



**SILL (Hard Plaster)**

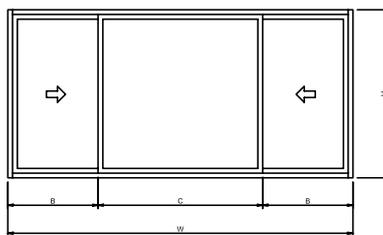
**Dowell Aluminium Sliding Windows give you excellent ventilation and an elegant appearance, as well as benefits, including:\***

- Durable low-maintenance, easy-clean aluminium profiles.
- The peace of mind of a comprehensive 10 Year Warranty.
- 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.
- Height adjustable mullion latch.
- Easy coupling to the Dowell range of windows and doors.
- Products available in Double Glazed configurations in some states.\*
- XO & XOX configurations available as standard.

**Hardware**

- Mullion Lock fitted as standard.
- Optional Maxi Lock available.

\*Some features and options may vary from state to state, please check with your local Dowell representative.



**3 LIGHT (XOX) WINDOW**

# Dowell Awning Windows

*The attractive appearance of the Dowell Awning Window is only the beginning of its superior quality, functionality and value.*

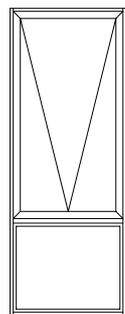
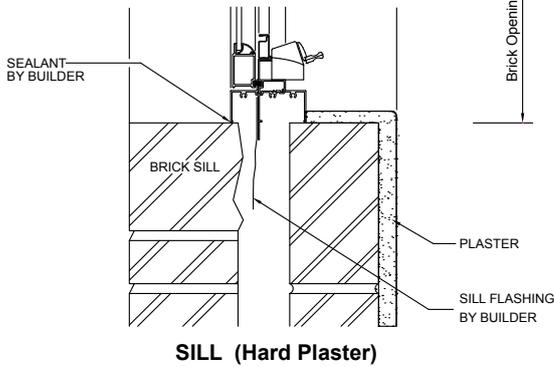
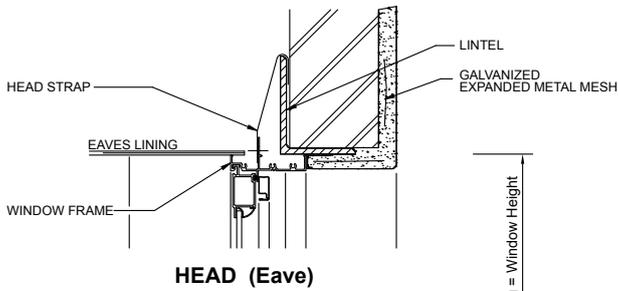
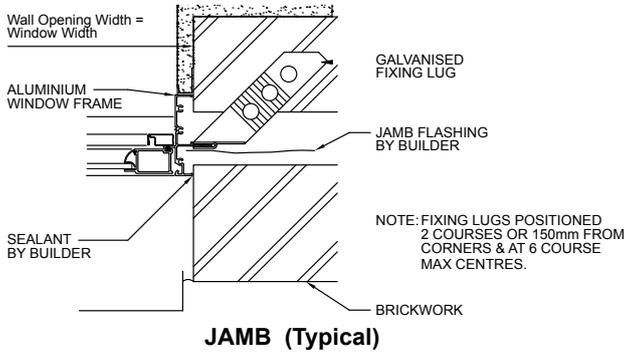
BRICKS		2½	4	5	6	7½	8½	10	11
WINDOW		610	970	1210	1450	1810	2050	2410	2650
6	514	A6/2H	A6/4	A6/5	A6/6	A6/7H	A6/8H	A6/10	A6/11
10	857	A10/2H	A10/4	A10/5	A10/6	A10/7H	A10/8H	A10/10	A10/11
12	1029	A12/2H	A12/4	A12/5	A12/6	A12/7H	A12/8H	A12/10	A12/11
14	1200	A14/2H	A14/4	*A14/5	A14/8H	A14/7H	A14/8H	A14/10	A14/11
16	1372	A16/2H	A16/4	*A16/5	A16/8H	*A16/7H	*A16/8H	A16/10	A16/11
18	1543	A18/2H	A18/4	*A18/5	A18/8H	*A18/7H	*A18/8H	A18/10	A18/11
22	1886	222T16	A224T16	*A225T16	A226T16	*A227H16	*A228H16	A221016	A221116
25	2143	252HT18	A254T18	*A255T18	A256T18	*A257H18	*A258H18	*A251018	*A251118

## Optional Alternatives

Awning/Awning	Fixed/Awning	Fixed Light/Fixed Light	All Awning	Colonial	Federation

Key \* = NOT FOR N4 or N5    4 = 4mm thick glass    5 = 5mm thick glass    Glass Thickness shown at N1

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



Typical Window with Transom

Every aspect of a Dowell Awning Window is manufactured to our exacting performance and style standards, from smooth operation to elegantly-styled sashes. They also offer other features and benefits, including:\*

- Durable low-maintenance, easy-clean aluminium profiles.
- The peace of mind of a comprehensive 10 Year Warranty.
- Integrated tubular mullions & 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.
- Easy coupling to the Dowell range of windows and doors.
- Products available in Double Glazed configurations in some states.\*
- Fully integrated flyscreen support.

**Hardware**

- Key Lockable Winder

# Dowell Sliding Doors

*With its generous 90mm frame and rounded interlocks, the Dowell Sliding Door is as attractive as it is sturdy, making it suitable for the most demanding of Australian conditions.*

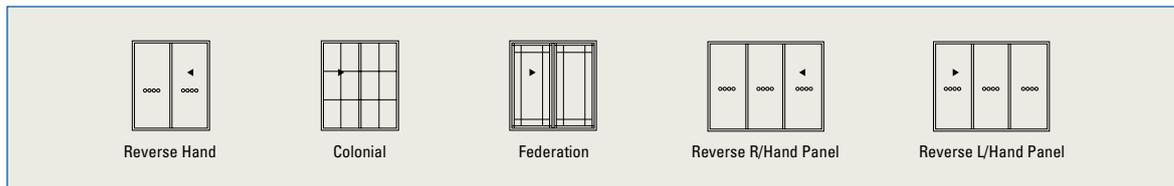
BRICKS	6	6½	7½	9	9½	10
DOOR	1450	1570	1810	2170	2290	2410
25						
2143	SD1450	SD1570	SD1810	SD2170	SD2290	SD2410

BRICKS	11	13½	15
DOOR	2686	3250	3610
25			
2143	SD2686	SD3250	SD3610

BRICKS	15	18	20
DOOR	3612	4330	4812
25			
2143	SD3612	SD4330	SD4812

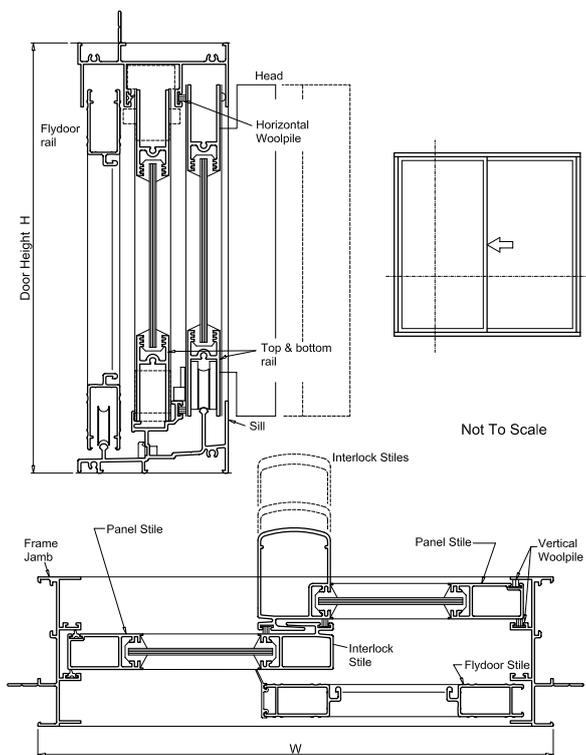
Opening viewed from outside

## Optional Alternatives



Key X = Opening door panel      O = Fixed glass panel

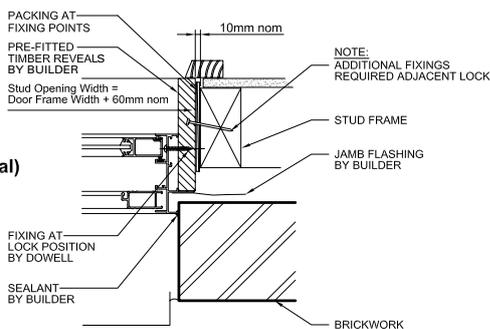
*Note: Some standard sizes, configurations and options may vary from state to state please consult your nearest sales office for further clarification.*



**Dowell Sliding Doors are available in a wide range of sizes and configurations, making for a huge variety of versatile solutions with features and benefits, including:**

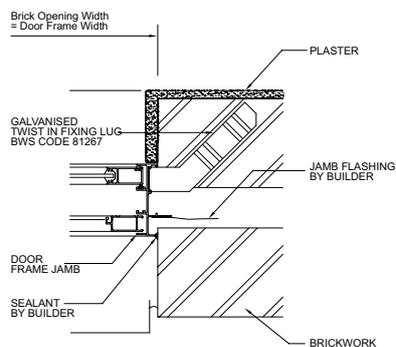
- Durable low-maintenance, easy-clean aluminium profiles.
- The peace of mind of a comprehensive 10 Year Warranty.
- Reveal flashing fins on jambs and head for weather protection.
- Patented sill valve draining system for superior performance.
- Optional Sump Sill for demanding exposure conditions.
- Fully adjustable, non corrosive ball bearing roller system for smooth panel operation.
- Available in 2 panel sliding (XO) 3 panel OXO (XOO), and bi-parting sliding (OXXO) 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 Flydoors and Stainless Steel Security available.

**JAMB (Typical)**



**Hardware**

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

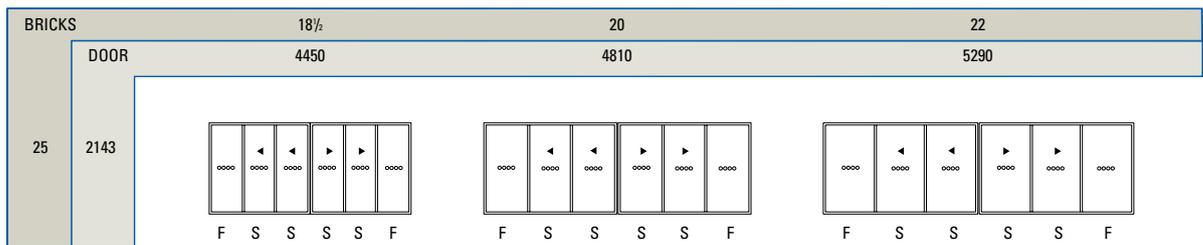
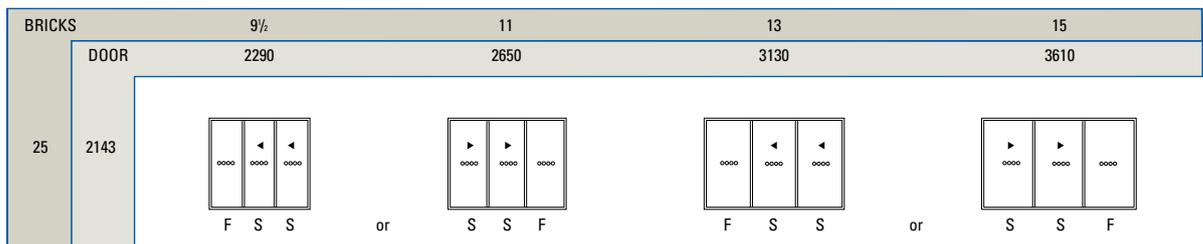


**JAMB (Typical)**

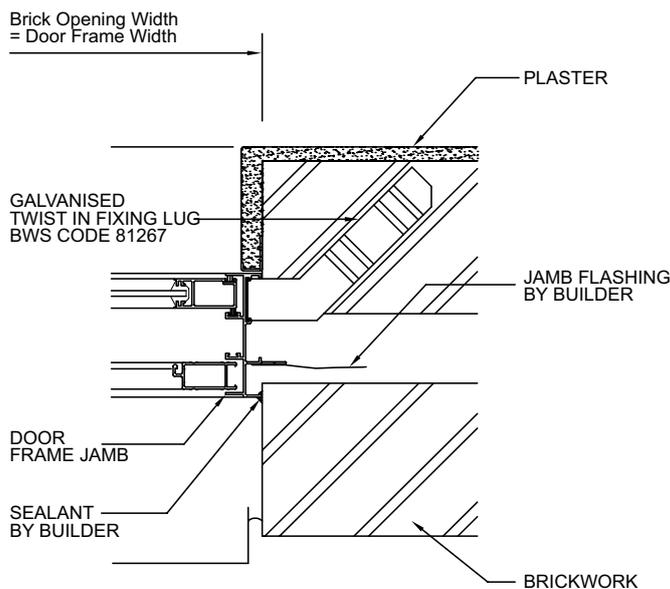
*Note: Standard hardware options vary in different locations. Please consult your nearest sales office for clarification. Our standard sill as shown has a 200Pa water rating and is 89mm wide x 42mm deep internal leg in dimension. Dowell also offers sumpsill and subsill options where higher water penetration ratings are required. Please consult your nearest sales office for more information or for further installation details on the Dowell Sliding Door please refer to our website [www.dowell.com.au](http://www.dowell.com.au)*

# Alfresco Sliding Doors

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

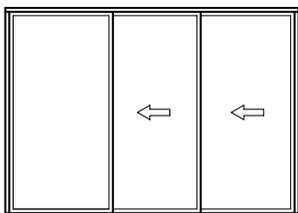


Key S = Sliding F = Fixed ▶ = Direction of operation

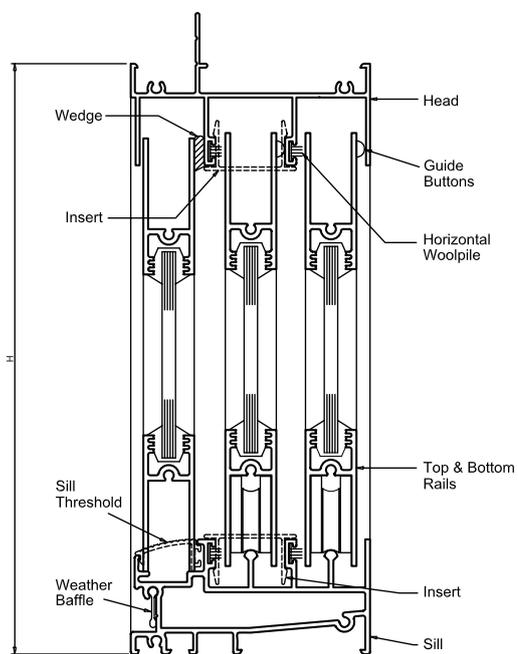


## JAMB (Typical)

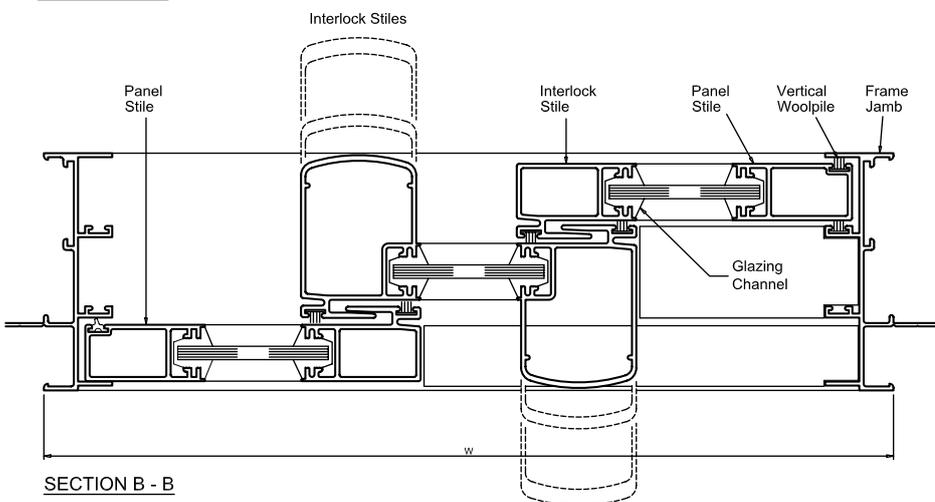
Note: Some standard sizes, configurations and options may vary from state to state please consult your nearest sales office for further clarification.



OXX, XXO CONFIGURATION  
(RH OPENING SHOWN, LH OPPOSITE)  
Not To Scale



SECTION A - A



SECTION B - B

Alfresco Sliding Doors break down the barriers of ordinary walls to allow the ever changing mood of sunlight to enter your home. Glass creates rooms that are light, inviting and constantly changing.

### Superior Quality

Highly functional and designed to operate smoothly day after day, Alfresco Sliding Doors are resilient and durable in all types of weather.

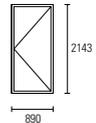
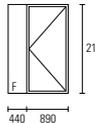
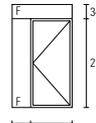
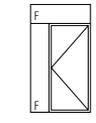
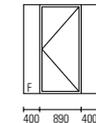
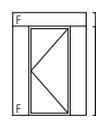
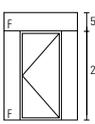
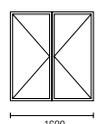
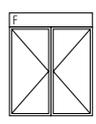
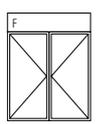
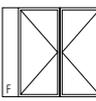
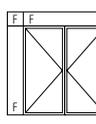
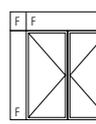
They require minimal maintenance and comply with all relevant Australian Standards. Dowell's superior technology is evident in the design of the Alfresco Sliding Door.

- Products available in Double Glazed configurations in some states.\*

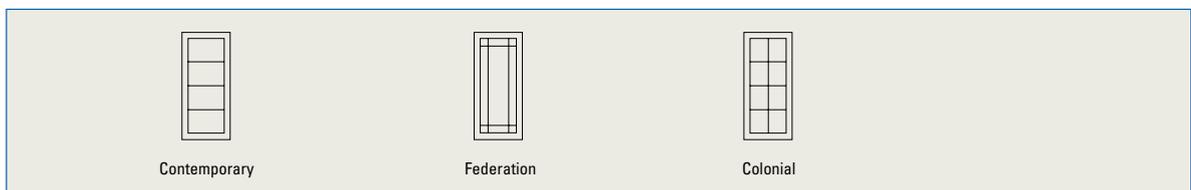
For further installation details on the Alfresco Sliding Door please refer to our website [www.dowell.com.au](http://www.dowell.com.au)

# Dowell Aluminium Entry Doors

*The generous proportions of the Dowell Hinged Door lends strength and substance to any area.*

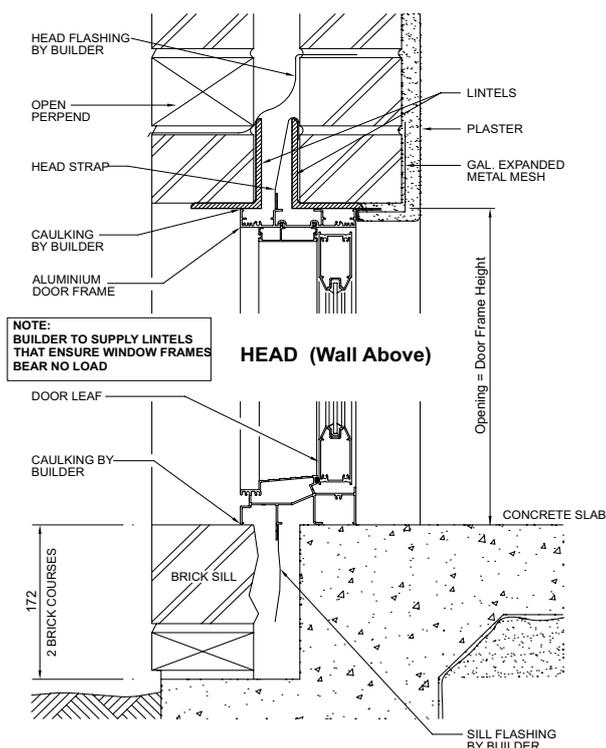
BRICKS	5½	5½	5½	5½	7
DOOR	1330	1330	1330	1330	1690
25	2143	2143	2143	2143	2143
					
	ED890	ED1L	ED2L	ED3L	ED4L
BRICKS	7	7	7	7	
DOOR	1690	1690	1690	1690	
25	2143	2143	2143	2143	
					
	ED5L	ED6L	ED7L	ED8L	
BRICKS	7	10	10	10	
DOOR	1690	2410	2410	2410	
25	2143	2143	2143	2143	
					
	ED9L	ED10L	ED11L	ED12L	

## Optional Alternatives

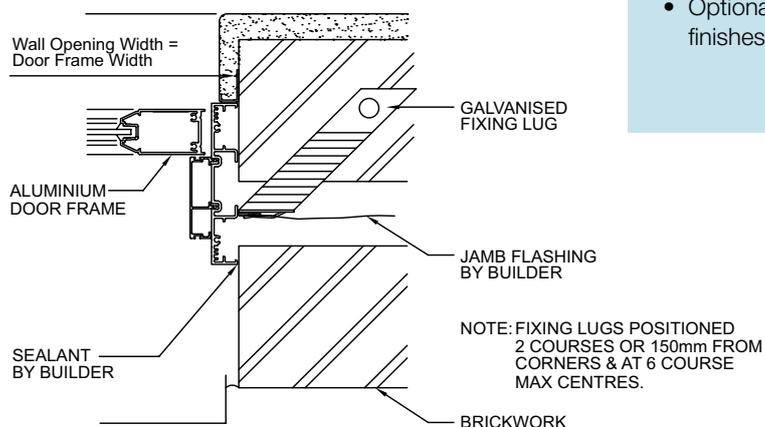


*Opening viewed from outside*

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



**HEAD (Wall Above)**



**JAMB (Typical)**

The complementary powder coat or satin chrome handles and locks, combine security and style with Dowell's traditional value.

Dowell French Doors are available in a wide range of standard configurations and have the added versatility of easy coupling to the range of Dowell windows to provide a solution to harmonise with the existing natural elements of your home.

The features and benefits found in every Dowell French Door include:\*

- Durable low-maintenance, easy-clean aluminium profiles.
- The peace of mind of a comprehensive 10 Year Warranty.
- Glass jacking screws to prevent door sag.
- Exclusive 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**

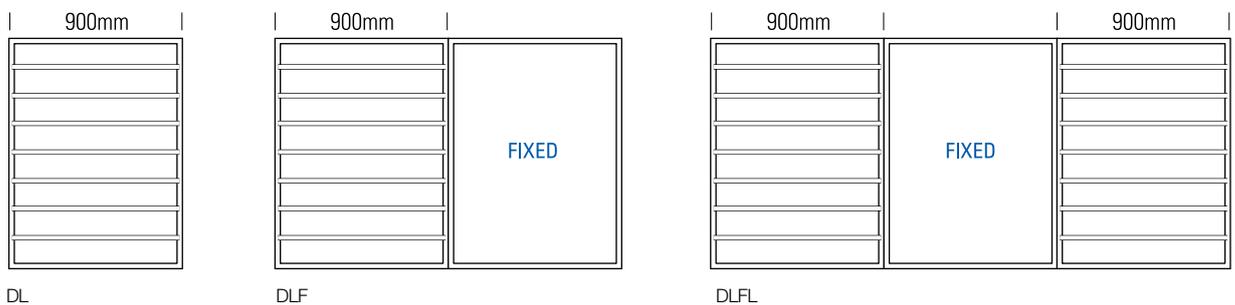
- Keyed handle set fitted as standard.
- Optional powder coated and satin chrome finishes available.

For further installation details on the Dowell French Door please refer to our website [www.dowell.com.au](http://www.dowell.com.au)

# Dowell Louvre Windows

*This new release Louvre and multi-function framing system is the answer to combining adjustable glass louvres with other popular glazing systems.*

## Standard options available including:



Custom styles and designs can be manufactured on request, please contact your nearest sales office for options available.  
Maximum Louvre bank width 900mm

## Louvre Blades options include:

### Glass

152mm in clear, toned, obscure or low E glass.

### Aluminium

152mm extruded aluminium with weatherstrips.

### Timber

152mm western red and kwila blades are available.

### 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 include:

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

**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.**

## 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.

Custom styles and designs can be manufactured on request, please contact your nearest sales office for options available.

*With a reveal fin frame system the Dowell Louvre can be installed into the building opening in a conventional manner to match other Dowell window installation details.  
Note: Some standard sizes, configurations and options may vary from state to state please consult your nearest sales office for further clarification.*



# Dowell Bi-Fold Doors

*The Dowell Bi-Folding Door system opens up indoor and outdoor areas.*

## Brick Opening

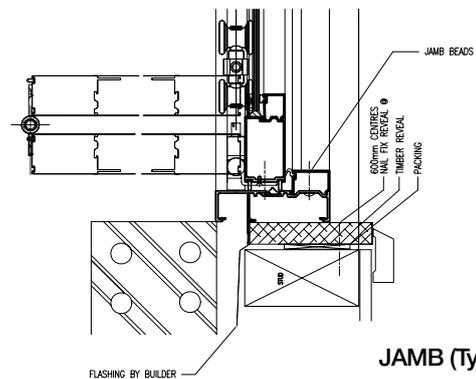
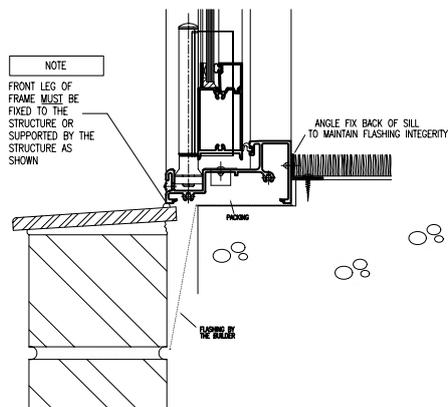
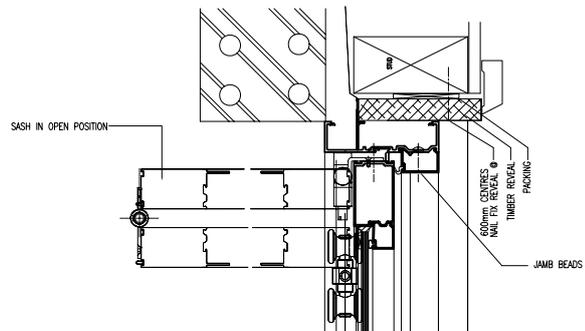
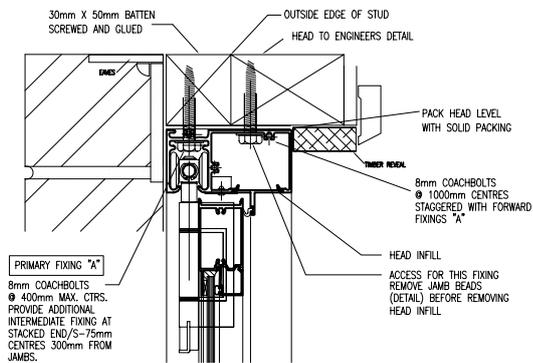
Bi-Fold 2 Panel						
<b>B3P-21/18</b>	2143	1810				
<b>Option Code</b>			<b>2R</b>	<b>2L</b>		
<b>Description</b>			2 Right No hinged door	2 Left No hinged door		
Bi-Fold 3 Panel						
<b>B3P-21/18</b>	2400	1810				
<b>B3P-21/24</b>	2143	2410				
<b>B3P-24/24</b>	2400	2410				
<b>Option Code</b>			<b>3R</b>	<b>3L</b>	<b>2L1R</b>	<b>1L2R</b>
<b>Description</b>			3 Right	3 Left	2 Left 1 Right	1 Left 2 Right
Bi-Fold 4 Panel						
<b>B4P-21/24</b>	2143	2410				
<b>B4P-24/24</b>	2400	2410				
<b>Option Code</b>			<b>4R</b>	<b>4L</b>	<b>2L2R</b>	<b>3L1R</b>
<b>Description</b>			4 Right No hinged door	4 Left No hinged door	2 Left 2 Right No hinged door	3 Left 1 Right 1 Left 3 Right
Bi-Fold 5 Panel						
<b>B5P-21/36</b>	2143	3610				
<b>B5P-24/36</b>	2400	3610				
<b>Option Code</b>			<b>5R</b>	<b>5L</b>	<b>2L3R</b>	<b>3L2R</b>
<b>Description</b>			5 Right	5 Left	2 Left 3 Right	3 Left 2 Right
						<b>1L4R</b>
						1 Left 4 Right
Bi-Fold 6 Panel						
<b>B6P-21/43</b>	2143	4330				
<b>B6P-24/43</b>	2400	4330				
<b>Option Code</b>			<b>6R</b>	<b>6L</b>	<b>3L3R</b>	<b>5L1R</b>
<b>Description</b>			6 Right No hinged door	6 Left No hinged door	6 Left 3 Right	5 Left 1 Right 1 Left 5 Right
Bi-Fold 7 Panel						
<b>B7P-21/54</b>	2143	5400				
<b>B7P-24/54</b>	2400	5400				
<b>Option Code</b>			<b>7R</b>	<b>7L</b>	<b>3L4R</b>	<b>4L3R</b>
<b>Description</b>			7 Right	7 Left	3 Left 4 Right	4 Left 3 Right
						<b>6L1R</b>
						6 Left 1 Right
						<b>1L6R</b>
						1 Left 6 Right
Bi-Fold 8 Panel						
<b>B8P-21/54</b>	2143	5400				
<b>B8P-24/54</b>	2400	5400				
<b>B8P-21/60</b>	2143	6020				
<b>B8P-24/60</b>	2400	6020				
<b>Code</b>			<b>8R</b>	<b>8L</b>	<b>4L4R</b>	<b>6L2R</b>
<b>Description</b>			8 Right No hinged door	8 Left No hinged door	4 Left 4 Right No hinged door	6 Left 2 Right No hinged door
						<b>2L6R</b>
						2 Left 6 Right No hinged door

*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.*

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

**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 satin chrome finishes available.



**JAMB (Typical)**

# Brick Charts

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

Heights		Widths	
No. of courses	Height of brickwork	No. of bricks	Opening Width
1	85	1	250
2	172	1.5	370
3	257	2	490
4	343	2.5	610
5	429	3	730
6	514	3.5	850
7	600	4	970
8	686	4.5	1090
9	772	5	1210
10	857	5.5	1330
11	943	6	1450
12	1029	6.5	1570
13	1114	7	1690
14	1200	7.5	1810
15	1286	8	1930
16	1372	8.5	2050
17	1457	9	2170
18	1543	9.5	2290
19	1629	10	2410
20	1714	10.5	2530
21	1800	11	2650
22	1886	11.5	2770
23	1972	12	2890
24	2057	12.5	3010
25	2143	13	3130
26	2229	13.5	3250
27	2314	14	3370
28	2400	14.5	3490
29	2486	15	3610
30	2572	15.5	3730
31	2657	16	3850
32	2743	16.5	3970
33	2829	17	4090
34	2914	17.5	4210
35	3000	18	4330

# Installation Recommendations

## *Dowell Doors and Windows*

### Before installation

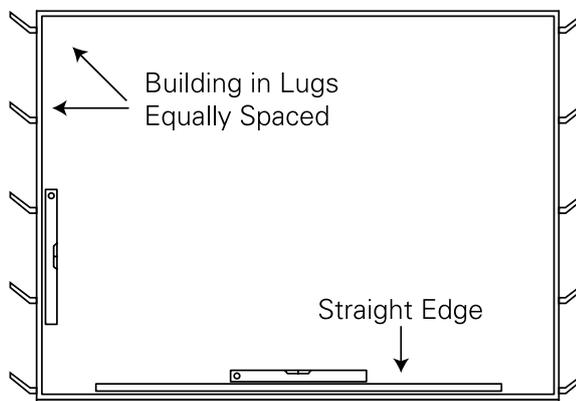
- Check the Window label to ensure that the window has the appropriate “N rating” (strength/water resistance) for the installation location.
- Lift carefully from trucks, do not use slings.
- When handling or transporting, carry in a vertical position with sill at bottom.
- Avoid knocks and abrasions.
- Handle and stack frames carefully on site.
- Stand them upright on their sill or if site is bare lay frames flat on top of each other with weight evenly distributed to avoid buckling and distortion.

### During construction

- 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.
- When lifting frames into final positions, sills must be supported at least under corners, under mullion/s and in the centre.
- Support the frame with braces.
- After levelling sill, check verticals in both planes with spirit level.
- Make sure frame is square by checking diagonals are equal.
- Check regularly that brickwork is not distorting frames.
- Check level of sill before laying external brick course, ensure sill is packed level.

### Chemicals & Protection

- Maintain and replace (where necessary) the factory applied site protection materials.
- Do not remove site protection until final clean down. Cement, plaster, lime, paints, solvents etc can cause permanent damage to surfaces.
- Keep in compatible material such as copper, brass and un-plated steel from coming into contact with aluminium. These metals and their run off will cause damage to aluminium.
- Brick cleaning acid will attack both the surface finish and the aluminium itself by either contact or indirect contact as a result of leaching along mortar joints after the job has finished. Take care when cleaning bricks adjacent to frames.
- Thorough washing of bricks with clean water will prevent leaching affect.



# Installation Recommendations

## *Dowell Doors and Windows continued*

### **During installation continued**

- 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.

### **After installation**

- Protect windows and doors from damage.
- If plastic wrap is provided DO NOT REMOVE until brickwork is complete.
- 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.

### **Routine window maintenance**

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.

### **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 should include:**

- 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.

# Glossary

## *Window and door terminology*

### **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.

### **ABCB:**

Australian Building Code Board, based in Canberra this body is charged with the responsibility of managing the Building Code of Australia.

### **AWA:**

Australian Window Association. An industry body that promotes the window industry.

### **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 Lug:**

A bracket used to fasten the window frame into the building.

### **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 or steel stud frame.

### **Built-in:**

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

### **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 Closer:**

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.

### **Colonial Windows:**

A window that is configured with horizontal and vertical bars to recreate the early colonial style of windows. Effect can be achieved with applied bars adhered to the glass.

### **Couplings:**

A vertical coupling member used to join two windows together.

### **Cover Pressing:**

Usually vertical cover plates used to join two windows side by side or around corner. Cover Plates are made 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.

### **Drain Slot/Weep Hole:**

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

### **Drain valve/Weep Hole cover:**

A component that uses 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.

## Glossary continued

### **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.

### **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.

### **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 is 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.

### **Louvres:**

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

### **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 Column:**

A load bearing pipe support used between two windows.

### **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.

### **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.

**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.

**Sill:** The bottom horizontal frame member.

**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.

**Stud Opening:**

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

**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).

**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.

**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, not to overall reveal fin size.

**[H]:** refers to window height

**[W]:** refers to window width. Note: Window and Door dimensions are always quoted height x width.

**Woolpile:**

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

# Technical Manual

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