



# Innovation Beyond Double Glazing



ALI-CLAD SERIES



# Innovation driven by passion



*Anatol Miglas, director and designer*

**Innovation is what makes a Miglas High Performance Windows unique and passion drives their development.**

A passion to embrace energy efficiency led Miglas to establish a separate enterprise within their already successful company to develop sustainable double glazed windows and doors.

That was over 20 years ago now and established Miglas as industry leaders, it presented an opportunity to introduce new technology, an opportunity to be innovative. Miglas; the first to capture the advantage of ALL-CLAD composite timber-aluminium framing, the first to integrate and use performance hardware designed for double glazing, the first to dedicate their business windows and doors made to manage our environmental challenges.

Today Miglas products continue to evolve and maintain market leadership. The **"Miglas difference"** is ever present as is their ability to rise to any architectural challenge demanded by project requirements.

Innovation delivers

# Unique Design

With years of experience supplying double glazed joinery to Australian alpine regions Miglas had a deep understanding of both energy and climate issues.

It became obvious that sustainable energy efficiency went far beyond double glazing. Research into the failings of both timber and aluminium windows showed that remarkably where each of these proven materials had its weakness the other had its strength.

When combined they provided the ultimate window design for Australian conditions; named ALI-CLAD. During the intense product development of a new window system many innovative features were initiated that today make up the unique **“Miglas difference.”**



## MODERN STYLISH EXTERIOR

### ALUMINIUM FOR DURABILITY & STABILITY

- contemporary architectural extrusions
- freedom of colour choice to suit exterior finishes
- free yourself of painting
- full facade capability

### HIGH PERFORMANCE INSULATING DOUBLE GLAZING UNITS

- optimum energy efficiency ratings
- glazing options to match your needs

### SUPERIOR SEALING SYSTEM

- concealed double sash seals
- latest TPE technology

### BEATING THE ELEMENTS

- low maintenance
- best performance ratings
- all Australian conditions

### INSTALLATION/FLASHING

- clip in nailing fin attachment
- project specific brackets

## ELEGANT WARM INTERIOR

### TIMBER FOR STRENGTH & BEAUTY

- natural thermal insulation
- sustainable Australian hardwood
- suitable for all internal finishes

### INTERIOR DECOR

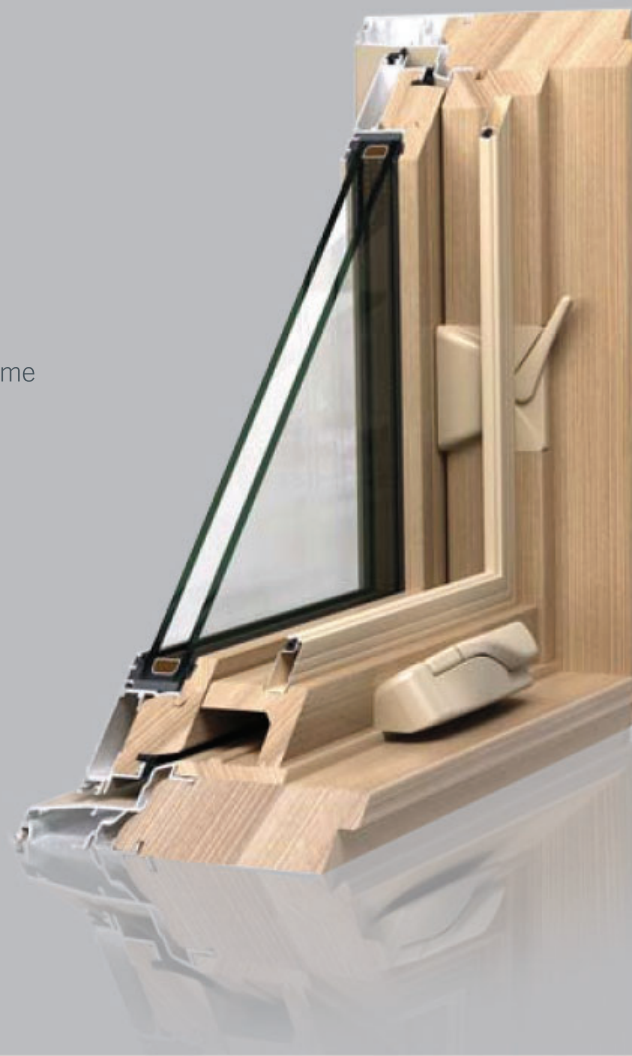
- independent from exterior colours
- colour/finish to suit each room in your home
- difficult to paint areas eliminated

### PREMIUM HARDWARE RANGE

- secure multi-point locking
- fully concealed sash operator
- large sash capability, wide openings
- stainless concealed automation

### BUILT IN INSECT SCREENS

- easy to remove, no gaps
- all screen material options
- choice of colours



Innovative design anticipates future challenges, requirements for larger door systems, sashes and glass areas, protection issues and the challenge of climate change.

Miglas ALI-CLAD is an enduring design concept. All parameters will stand the test of time as will ALI-CLAD products in your home.

The "Miglas difference" is not only in the composition of the window and door profiles but carries through to the modular construction, giving great freedom in how you design and combine your windows and doors.

Miglas provide a customised solution from a complete range of thermally efficient performance products. MIGLAS ALI-CLAD COMPOSITE WINDOWS AND DOORS add value to your home while you enjoy comfort and protection.

MIGLAS DOOR SYSTEMS use the same composite ALI-CLAD principles with similar features and benefits

innovation

# Because your home deserves the best

When you imagine how your new home will look and you visualise how your home reflects your lifestyle and values, it is most likely that windows and doors show as a major influence on how you make your dream a reality. Miglas believes we share part of your vision.

“because your home deserves the best“ is part of Miglas culture, through innovation and a commitment to Australian materials

ALI-CLAD windows and doors deliver far more than just double glazing and you can reap the benefits.

Discover how Miglas products will help accomplish your vision.



# Freedom of Design



The latest release of Miglas AliClad windows and doors makes an exciting contemporary statement. New frame and sash profiles, introduction of a set-back mullion, new internal glazing and the use of fixed sashes combined to offer **a style and product range perfect for today's modern home.**

**Matched frame profiles** throughout the range allow all modules to link seamlessly in an endless variety of design solutions, all without visible fixing.

There are no **“standard sizes”** or special pricing issues to consider as each frame is customised to your requirement as normal practise. Miglas philosophy has always been **“made to order”**, innovative design and sophisticated manufacturing processes achieve this economically.

Freedom of design comes from the inherent strength of the profiles and the use of advanced hardware systems. Larger sashes, larger doors, stacked sashes, automation and further options always retaining

the same high performance, standards and energy efficiency level.



# Find Extra Comfort

Double glazing provides a stable and controlled internal environment that is not possible to achieve with single glazing. Dependent on specific climate requirements the ability to incorporate an appropriate high performance glass product further enhances the advantages of double glazing. Because single glazing adopts the outside temperature, when it's cold you can have condensation and thermal convection (draughts) develop. It is not comfortable near windows or glazed doors. With double glazing the inside glass is close to room temperature, no thermal draughts,

little chance of condensation. The superior air tightness of Ali-Clad also minimises leakage draughts.

Framing materials are also important. Ali-Clad provides the insulating qualities of timber, eliminating the cold (or hot) feel and condensation issue of aluminium frames. The positive influence of natural light throughout your home contributes to your comfort and well being.

Ali-Clad provides great scope to maximise your natural light while complying with energy requirements.

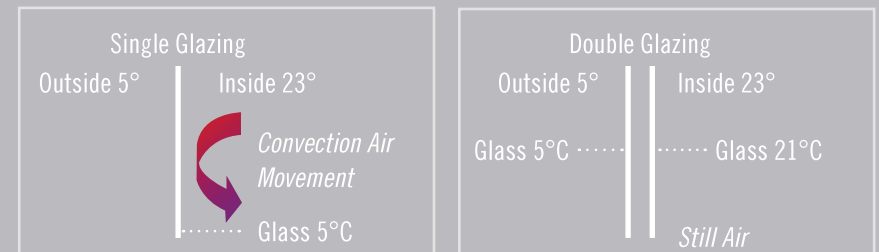
## ASSISTING YOUR WINDOW SELECTION :

- for optimal light usage
  - one large window instead of several small ones
- for even light distribution
  - windows on several elevations
- for penetration deep into the room
  - tall or high windows
- for broad and shallow light
  - wide windows

The greater the light transmission the easier it is to see out at night. If this is a priority, reflective solar control glass is not advisable.

Ventilation, the satisfying feel of a summer breeze or venting to exhaust heat build up. The always perfectly sealed and easy to use options of casement and awnings windows, sliding or bi-fold doors (large or small). Where possible you should provide cross ventilation. If the window is difficult to access you can take advantage of fully concealed automatic operators.

Noise, Noise, Noise! The control of noise intrusion certainly adds to your comfort, there are several laminated glazing options and with absolute minimal air leakage Ali-Clad provides the solution.



## DID YOU KNOW?

Aluminium conducts heat 100 times more readily than glass and 1770 times more readily than timber.

Unobtrusive heating systems such as underfloor hydronic heating provide an exceptional winter environment when matched with double glazing.

# Range summary

A comprehensive range without compromise on performance.

## WINDOW STYLES

### Fixed Windows

Largest sizes without performance loss

### Casement Windows

provide the best ventilation option with 90 degree pivot opening

### Awning Windows

provide adequate ventilation in cooler climates and some weather protection even when open

Both sash type windows look identical internally and externally and provide a modern contemporary style. They can be fitted with either manual or automated operator options. Multi-point locking hardware combined with ALI-CLAD framing provide large sash capability.



## DOOR STYLES

### Sliding Doors

Exclusive continuous sealing system, optional self closing insect screen door with concealed operator, stainless steel track with exclusive heavy duty rollers are designed to provide smooth operation, long life and exceptional performance.

### Single Hinged • French Double • Centre Hinged

All hinged doors are fully factory assembled into their door frame, security hinged, fitted with up to 7-point locking and optional handles and plates.

### Bi-fold

Premium hardware system with multi-point locking.

# Performance Summary

With Building Codes now defining minimum standards for energy consumption windows are rated for their thermal efficiency in addition to compliance with relevant Australian Standards. The ALICLAD Series offers exceptional ratings across a range of measurements, ensuring highest performance in the most demanding Australian conditions.

## THERMAL PERFORMANCE

Thermal rating is dominated by the glazing performance. AliClad double glazing more than halves the energy use, it is further enhanced by the use of high performance options, providing scope to manage both heat gain and heat loss situations.

- *Insulating double glazing units* (IGU's) provide their best thermal insulation with air gaps between 12-16mm – 12mm air gap is 14% more efficient than 6mm. Intro-

ducing LowE coating the 12mm gap units perform 35% better than 6mm with a further 10% improvement when filled with argon gas. Having a 22mm glazing cavity allows optimal performance with varying glass thicknesses. With standard argon gas filled units Miglas always supply performance excellence.

- *Air Leakage* dilutes the thermal efficiency rating (usually stated as U Value). A poorly sealed door or sash can leak more energy than it loses through the glass. ALICLAD hardware maintains a constant closing force on the seals ensuring air leakage is negligible and stays that way over time.

- *Composite framing* derives its thermal efficiency from the naturally insulating quality of timber, yet it provides a highly durable, long life exterior.

## HIGHEST AUSTRALIAN STANDARD RATING

The exceptional strength of the composite profiles and matched hardware systems allow AliClad to be used anywhere in Australia.

The Australian standard starts at N1 wind ratings for shielded suburban housing. Designed to withstand 75kph and 60kph for water leakage.

AliClad is tested to withstand wind speeds of 200kph and reaches the maximum rating of N6/C4 for housing and residential developments

How good is the AliClad when there is gale force winds and heavy rain as well?

The answer is very good. The system passed water penetration testing at simulated speeds of 160kph (1200pa) for windows and 110kph for sliding doors.

### **Three times the required minimum.**

Highly developed sealing systems ensure long life and continuous performance.

## DURABILITY

Never paint the your windows again is one Miglas promise for the durable powder coated exterior AliClad surface. Providing a low maintenance surface. Selected hardware components catering for additional weights of double glazing are a further addition to ensure durability of time.



# Interior Design-Decor

Enjoy the warmth.

Double glazed windows have a major impact on the interior design and decor of your home. Seldom covered even at night the internal framing particularly in doors becomes an integral part of your room.

*Enjoy the warmth and beauty of timber working with sustainable victorian ash allows you to choose your finish for each room in your home; natural finish, limed, stained or painted to the colour your decor dictates.*

*"Windows are your wall furniture"*  
thats the way we treat every window.

Using hardwood interior provide excellent durability for all applications. Door hardware and colour-matched window operators suit any interior design.



# Facades & window walls

Clean lines that are reflected by an equally impressive timber interior.

Stylish and substantial proportions of the ALI-CLAD framing system provides opportunity to link and connect factory assembled modules to form residential type window walls or façades.

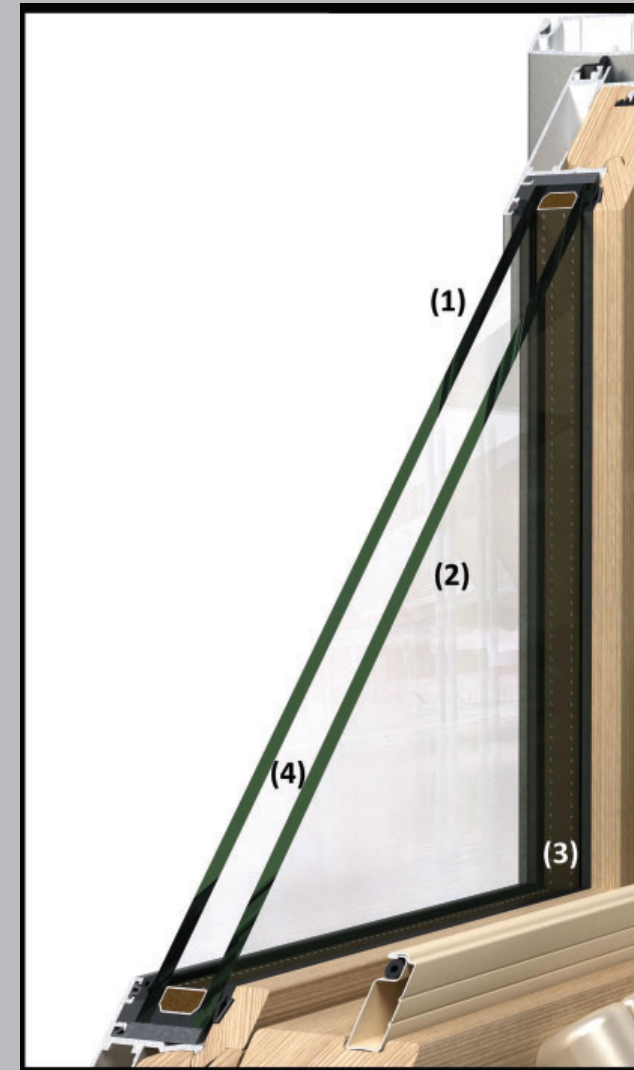
This is possible with factory glazed frame modules and eliminates the need for construction and glazing on site. High performance double glazing allows energy regulation compliance with maximum natural light and extensive views. Miglas have an exclusive factory prepa-

red system to join frame modules without visible fixing, in the case of links around building structural elements, in residential projects appropriate aluminium connectors are available. The colour and sharpness of an aluminium exterior makes a strong architectural statement.

# Innovation in Double Glazing

Understanding that windows and doors are a crucial part of a house's insulation there is simply no way around double glazing. The available plethora of combinations allow us today to meet nearly any project requirement and energy rating needs. The insulating glass unit should be standard in every Australian home- improving comfort and reducing heating and cooling costs. In times of rising energy costs and necessity to lower your carbon footprint it

is the right solution. With an argon gas gap of 12m-16mm Miglas always meet the necessary air space to make it a true double glazed unit. On the right you'll find the most common glazing set-ups offered by Miglas. Please be aware, we are able to meet your exact requirements for security, privacy and comfort with many more options.



- (1). Outer Glass Pane.
- (2). Inner Glass Pane.
- (3). ThermoTech™ Spacer Bar.
- (4). Argon Filled & Sealed Thermal Break



**DOUBLE GLAZING STARTS HERE**  
(Clear Double Glazing + Argon)

Where competitors try to make a high end statement with double glazing is where Miglas starts its range. Modern windows have to have double glazing. Thermal comfort and emission savings are an advantage to your and our environment.

IGU 4mm/14mm Argon/4mm clear	
UValue	2.6
SHGC	0.74
UV Trans.	52%
Visible Trans.	80%



**HIGH PERFORMANCE FOR EVERYONE**  
(LowE + Argon)

A superior glazing solution, which utilises a special LowE coating. This coating provides extra insulation that keeps you and your home warm in the winter by reflecting heat back into the room, and cool in summer by reflecting the sun's heat back out.

IGU 4mm/14mm Argon/4mm lowE	
UValue	1.6
SHGC	0.69
UV Trans.	42%
Visible Trans.	74%



**COLOUR & ENERGY MANAGEMENT**  
(Toned Glass + Lowe + Argon)

Reducing solar heat gain while retaining good daylight transmission and low reflectivity it also cuts out a fair bit of UV. For uniformity and security we recommend toughened units of the same thickness.

IGU 4mm/14mm Argon/4mm LE Gy	
UValue	1.6
SHGC	0.47
UV Trans.	23%
Visible Trans.	45%



**NOISE INSULATION & UV PROTECTION-**  
(Laminated Double Glazing)

A simple way of cutting out 99% of UV with a standard laminated glass or special noise reduction lam-glass to create a superior barrier against unwanted noise. Always the right glazing combination for an acceptable noise level in your home next to busy road or other noisy environments.

IGU with Viridian VLam Hush	
UValue	2.5 – 1.6
SHGC	0.74 – 0.43
UV Trans.	< 1%
Visible Trans.	76 – 32%
Db reduction	33 – 42 db

**PRIVACY (obscure Glass)**  
Choose from a range of pattern for the appropriate areas like bathrooms without sacrificing natural light.

**DÈCOR GLAZING**  
Miglas can supply coloured glass as well as integrate your lead light design into the double glazed unit. Allowing you to fulfil nearly every design dream. Please ask for details.

*Note: Double Glazing values stated are not representative for whole-of-window. Glass thickness and toughened glass can influence performance and look of the product.*

# Energy



Thermal efficient design is one of the major aspects of modern architecture driven by your expectations and the aspiration of sustainable living. Comfort means making windows work for you – Conserving valuable warmth inside and blocking out unwanted heat for truly thermally efficient windows and doors.

Up to 87% of solar heat gain can be caused by the glazed area in a home and roughly 50 % of warmth can be lost through air leakage in a building. Looking at the right insulation value (U Value), the right solar heat gain coefficient (SHGC) and air infiltration is the key to energy savings and comfort in your home.

While the energy rating (NFRC-100) will give you framing material, glazing and a certain U Value and SHGC configuration you will have to fulfil for your residential

project, the true value of a window should exceed these basics. The WERS rating utilises the NFRC ratings to rate windows in terms of their whole-house energy improvement when compared to the base-case window (a single-glazed clear window with a thermally unbroken aluminium frame). The ratings are then used to generate star ratings for cooling (summer and solar control performance) and heating (winter performance) improvement. Besides U Value and SHGC you will also find a figure for air leakage which describes the tightness of the product which has a further impact on thermal and noise insulation not expressed by the U Value. The lower the air leakage the better – making windows and doors that leak with < 0,1 litres/s/m<sup>2</sup> preferable.

All this means you will have the control

over the room climate. By looking at the components and important values you will understand the unique Miglas advantage beyond ratings and general regulations.

SAVING ENERGY IS NOT JUST FOR THE ENVIRONMENT, IT IS GOOD FOR YOUR POCKET.

Meeting and exceeding the energy guidelines of all Australian states. Allowing you to design a home that can perform well beyond the minimum 5 star requirements.

## U Value

Defines how well a window keeps heat inside a building and insulates it against summer heat.

## CONDUCTION

Movement of heat through a material. Low conductive glass, like double glazing with insulation air gap of 10-20mm and low conductive frame, like timber, minimises conduction.

## SOLAR HEAT GAIN COEFFICIENT

The SHGC that shows how well a product blocks heat caused by sunlight rays. It is the fraction of incidental solar radiation admitted through a window, both directly transmitted, and absorbed and subsequently released inward.

The SHGC is expressed as a value between 0 and 1. The lower a SHGC, the less solar heat is transmitted.

## AIR INFILTRATION

Siphons about half of an average home's heating and cooling energy to the outdoors. Air leakage through and around windows is responsible for much of this loss. Advanced sealing with compressible gaskets and tight hardware reduce air leakage.



# Meeting Standards

## 2011 WERS Certified Products Directory - AFRC

### NOTES

1. Uw is the whole window U-value
2. SHGCw is the whole window solar heat gain coefficient
3. Tvw is the whole window visible (light) transmittance
4. Percentage improvement figures are compared with using base-case Generic Window 1 (3mm clear in standard aluminium frame)
5. A negative percentage improvement figure indicates performance worse than the base-case window
6. A positive percentage improvement figure indicates performance better than the base-case window
7. Maximum air infiltration is 5.0L/s.m2 at a positive pressure difference of 75 Pa as measured according to AS 2047
8. Static performance (Uw SHGCw Tvw Tdw) calculated using Window 5.2 and Therm 5.2 software (LBNL), 2000-2003
9. Annual energy performance (stars and % improvements) calculated using Nationwide House Energy Rating Software (AccuRate) according to procedures of WERS 2008.
10. Results disclosed at National Fenestration Rating Council (NFRC) regulations.



Miglas Australia				Cool %	Heat %	Total Window - NFRC				
Window ID	Glazing	Cooling Stars	Heating Stars			Uw	SHGC	Tvw	Air Inf.	
Miglas - Aليclad Casement window										
MIG-001-01	<a href="#">4/14/4</a>	★ ★ ★ ☆	★ ★ ★ ★ ★ ☆	52%	71%	2.8	0.49	0.52	0.07	
MIG-001-02	<a href="#">4/14/4EA</a>	★ ★ ★ ★	★ ★ ★ ★ ★ ★	56%	74%	2.4	0.46	0.48	0.07	
MIG-001-03	<a href="#">4Gy/14/4EA</a>	★ ★ ★ ★ ★	★ ★ ★ ★ ★ ★	65%	66%	2.4	0.32	0.30	0.07	
MIG-001-04	<a href="#">4/12Ar/6LE80i</a>	★ ★ ★ ★ ☆	★ ★ ★ ★ ★ ☆	62%	72%	2.2	0.38	0.47	0.07	
MIG-001-05	<a href="#">4Gy/12Ar/6LE80i</a>	★ ★ ★ ★ ★ ☆	★ ★ ★ ★ ★ ★	70%	65%	2.2	0.27	0.29	0.07	
MIG-001-06	<a href="#">4/14Ar/4EA</a>	★ ★ ★ ★	★ ★ ★ ★ ★ ★	56%	76%	2.2	0.46	0.48	0.07	
MIG-001-07	<a href="#">4Gy/14Ar/4EA</a>	★ ★ ★ ★ ★	★ ★ ★ ★ ★ ☆	66%	68%	2.2	0.32	0.30	0.07	
MIG-001-08	<a href="#">4/14Ar/4S500</a>	★ ★ ★ ★	★ ★ ★ ★ ★ ★	56%	75%	2.3	0.46	0.48	0.07	
MIG-001-09	<a href="#">4Gy/14Ar/4S500</a>	★ ★ ★ ★ ★	★ ★ ★ ★ ★ ☆	66%	67%	2.3	0.32	0.30	0.07	
MIG-001-10	<a href="#">4/12Ar/6LE50i1</a>	★ ★ ★ ★ ☆	★ ★ ★ ★ ★ ☆	63%	71%	2.2	0.36	0.29	0.07	
MIG-001-11	<a href="#">4/12Ar/6LE54i1</a>	★ ★ ★ ★ ☆	★ ★ ★ ★ ★ ☆	64%	71%	2.2	0.36	0.31	0.07	
WERS Generic Standard Industry Typical Timber Window - Double Glazed										
WER-005-05	<a href="#">3/6/3</a>	★ ★ ☆	★ ★ ★ ★ ☆	38%	47%	3.3	0.61	0.65	5.00	
WER-005-06	<a href="#">3/12/3</a>	★ ★ ☆	★ ★ ★ ★ ★	40%	51%	3.0	0.61	0.65	5.00	
WER-005-07	<a href="#">3/12/4LE</a>	★ ★ ★	★ ★ ★ ★ ★ ☆	48%	59%	2.1	0.58	0.59	5.00	
WER-005-08	<a href="#">5SuperToned/6/5</a>	★ ★ ★ ☆	★ ★ ★ ★	55%	37%	3.3	0.41	0.34	5.00	

Miglas does not just meet, but exceeds the minimum hurdles of most relevant Australian standards.

- Water Penetration
- Wind Load Ratings
- Deflection / Maximum Strength
- Bushfire (upto BAL-40)

# Beating the Elements



Playing a major role within the building envelope it is critical that windows and doors protect your home from the impact of our harsh environment and changing climate. Innovative design providing lasting solutions, durability and strength against sun, wind and rain. Ali-Clad meets the challenge of the Australian climate.

Miglas AliClad windows and doors are designed for all Australian climate conditions to ensure optimal performance.



#### COASTAL

Higher performance coastal specification AliClad will deliver comfort & protection while you enjoy your location. Performance against unrelenting wind and rain to be maintained over time. Making stainless steel hardware and durable powder coating a necessity as well as the right sealing system. With an N6 Australian Standards window rating, tested to 200kph wind loads and 1200pa water penetration Miglas windows and doors are the ideal coastal solution.



#### ALPINE

Total energy design and superior sealing allows the system to outperform others in the most demanding conditions. Strength, durability and condensation resistance are major influences on selection of the right alpine product. With 30 years of experience supplying windows into Australian Alpine regions Miglas clients know how well the AliClad system performs.



#### ACOUSTICS

Intrusive noise is a severe problem of modern living where traffic is constant and neighbours are closer. Glazing is critical and products with air leakage over 1.0 lt./s/m<sup>2</sup> are not suitable. Miglas provide minimum air leakage and the right glazing options to manage noise intrusion. Remember to give special attention to bedroom windows and doors as lower dB values are desirable.

Note: Standard 4/12/4 double glazing is not suitable for noise reduction applications.



#### BUSHFIRE

Miglas invested heavily in finding a solution to reduce your homes, your families and your risk of becoming a victim to bushfire. By combining advanced seals, special glazing and superior hardware components Miglas is the first company to achieve a shutter free solution for bushfire areas of upto BAL-40. Miglas are also currently developing a system to comply with the highest BAL rating, BAL - FZ, which should be available in the coming months.

# Built in Security

## **Ali-Clad beats the elements but there is more to your protection than weathering every storm.**

Security is an obvious must if your home is to be a safe haven. It is a basic need to protect you, your family and your belongings.

In times of rising burglary statistics security becomes a more inherent issue, but hasn't been answered nor adopted by Australian standards and home building regulations. In other countries it is already mandatory to provide additional security. This and the demand of clients for more safety was reason enough to source hardware components from the leading world markets. There are also special security glazing options available when required.

**It is windows and doors that work for you – day & night.**



The “Miglas difference” is that we ensure that these components are matched with the requirements of specific door sizes and weights - with all components factory fitted to ensure air tightness and a perfect fit.

## **IMPRESSIVE MULTI-POINT LOCKING**

The up to seven locking points are dominated by the robust metal hooks that don't just look like they do their job – THEY DO. V-shaped hooks that pull the door leaf tight into the seal and frame to create a strong barrier against forced entry. Opening windows are also fitted with a multi-point locking system.

Like all hardware components they contribute to the superior thermal and noise insulation of the range.

## **HINGED AND SLIDING DOORS**

Not regulated in Australia but well established around the world, and mandatory in countries with similar burglary statistics. Door hinges are drill protected and sliding doors have top and bottom tracks that make lifting and break-in virtually impossible.

**Converting a common weakness in homes into a strong and perfect fit for optimal comfort and protection.**

# Build in Safety

## IS MY FAMILY SAFE?

Protecting your family and possessions brings up the question of safety. It maybe pool safety, bushfire safety, accidental or forced breakage safety. Self-closing doors, pressure controlled automation, restricted openings and high performance glazing options allow Miglas to offer a solution that meets your requirements. Meeting and exceeding the standards for window manufacturing and complying with the building codes make windows and doors one less issue and concern when building your home. Safe automation, safe locking, safe glazing – product design that satisfies modern requirements. Regulations and personal preference can vary individually and it is crucial to discuss the requirements with our sales team to guarantee a suitable and economic solution.

Choosing glazing is purpose related – depending on project individual requirements it is beneficial to consider the advantages of different options.

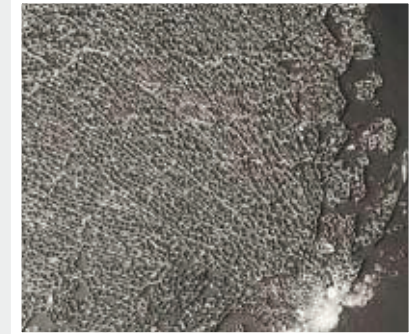


### LAMINATED GLASS

When broken the interlayer retains the units integrity and continues to act as a barrier. It also cuts out 99% of UV.

- UV Control
- Noise Control
- Impact Resistance

The various lamination options improve the performance for intrusion resistance and noise reduction. Security glazing is 20 times harder to break, laminated with a heavier interlayer that resist impact and forced entry.



### TOUGHENED GLASS

Is 4-5 times stronger than standard glass. Instead of big sharp shards it breaks into small granules

- Bushfire Control
- Strength
- Thermal Stress Resistance

Where views are important the extra strength allows larger glazed areas. It also provides necessary safety against heat from bushfires.

# Window hardware

Having seen the importance of air leakage, security and safety for comfort and protection the selection of hardware is critical to the overall performance of the window. Ease of use, smooth operation, freedom of colour and non-intrusive looks that integrate well with your interior design are important. Besides the more visible aspects of hardware selection it is the durability and reliability that distinguishes the products over time.

Miglas sources its hardware components from around the world and locally where possible for best performance. The Truth

window winders and hinges are fitted to carry the weight of double glazing and are matched to the individual sash size for best performance.

With additional sash locking the AliClad is one of the most secure window systems in the market without creating a deadlock in fire situations. The hardware actively contributes to the air tight closure - a further performance advantage beyond the computer generated window energy ratings. The closure pressure support reduces unwanted drafts and further heat loss, as well as increases the noise insulation.

Very often the noise insulation weakness of a window system is not the glazing, but the air tightness of the system which make superior hardware and seals a very important aspect.

All opening windows come with concealed operators and can be automated on request. The non-intrusive, concealed sash locks and the foldable winder allow clear curtain lines as well as giving the timber the chance to become a feature in your room. The internal fitted insect screen can be powder coated to suit your interior design and requirements for mesh types can be

met. Optional stainless steel hardware components allow the product to perform at its best in all Australian conditions beyond suburban living. Harsh coastal climate, challenging bushfire risk areas or alpine mountains. The Ali-Clad series has a perfectly matched hardware system to perform – NOW, TOMORROW AND BEYOND!

### SASH LOCKS

- Concealed Mechanism
- Freedom of Colour
- Multi-point Locking

Creating a clear non-intrusive line with a modern colour range that matches your interior décor the sash lock reflects the simplicity of modern interior design. It allows for easy painting, secure locking and gives the timber the chance to become the feature of your interior.

### SASH OPERATOR

- Concealed Operating Arm
- Freedom of Operator Cover Colour
- Smooth and Easy Operation

With hinges and operating arm selected to cater for each individual sash sizes and weight Miglas ensure hassle free operation. Like the sash lock the colours available enable you to match the operators with your interior design. The foldable handle overcome the issue fiddly winding giving enough torque for less turns to fully open and close the window. The corrosion resistant option is the upgrade that gives the extra protection for harsh coastal climates.

### INSECT SCREEN/ Mesh Type

Choose a mesh that meets your requirements including coastal and bushfire areas.



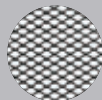
BRONZE



FIBREGLASS



STAINLESS STEEL



ALUMINIUM

### COLOUR SELECTION

We are convinced that you will be able find the right colour for your project from a range of painted and decorative. Based on requirements and budget the selection is unlimited. Even the standard range has great modern colours that integrate well with the window system as well as your indoor design.

### AUTOMATION

- Fully Concealed
- Stainless Chain
- Maximum convenience

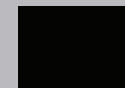
Ideal for hard to reach top lights, public buildings with central indoor climate management or just for the convenience of a fully automated modern home. Window automation is on the rise and the German engineered stainless chain winder system is ideal for all applications. Tested to 10.000 cycles with strong chain and options for large sashes we can automate casement and awning windows.

### SCREEN FRAME COLOUR

12 Standard colours match your insect screen frame with your operator



Apo Grey



Black



Bronze



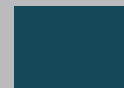
Brown



Mist Green



Heritage Green



Mountain Blue



Claret



Primrose



Magnolia



Stone Beige



Pottery

*Note: Miglas are customisation specialists, if you should not be able to find the right colours please consult our sales team for further options. Please refer to the latest sales information in regard to all options as they might have changed.*



## MIGLAS

### **DOUBLE-GLAZED TIMBER WINDOWS...**

with a powder coated aluminium exterior that never needs painting!  
Eco-friendly comfort in all components –combining energy efficiency  
and low maintenance for truly high performance.

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It's sure to give you many ideas on choosing the right styles and options, as well as improving look and value of your home.  
Also providing additional information and ratings, fittings and third party opinions.  
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