



AWS
ARCHITECTURAL WINDOW SYSTEMS

SOLUTIONS FOR 7 STAR PERFORMANCE



ENERGY EFFICIENT SOLUTIONS FOR RESIDENTIAL BUILDS

DISCLAIMER

Whilst every effort has been made to ensure the accuracy of the data contained within this publication, Architectural Window Systems Pty Ltd (AWS) assumes no responsibility for errors or omissions or any consequences of reliance solely on this publication. AWS reserves the right to modify designs without notice – for the latest designs and information visit our website, awsaustralia.com.au



INCREASING ENERGY RATINGS TO 7 STARS

After more than a decade, Australian Residential building standards have been significantly updated with the review of the National Construction Code (NCC) 2022.

NCC 2022 requires all new Australian houses and apartments to meet a minimum energy efficiency rating of 7-Stars under the Nationwide House Energy Rating Scheme (NatHERS).

Lifting the rating aims to not only improve energy efficiency and reduce carbon emissions but also make homes more comfortable for their occupants.

Adoption of the NCC is determined by state and territory building administrations.

Some jurisdictions may choose to expand, remove or vary specific requirements and as such, we recommend you check with your jurisdiction's building authority for local advice on transitional provisions.

According to the Climate Council's 2022 Tents to Castles Report*, the 7-star standard for all new homes will save households an average of \$450 a year in energy costs and reduce residential carbon emissions by 12%.

Using NatHERS to pass Energy Efficiency Requirements in the National Construction Code (NCC)

7.0
The maximum
NATIONWIDE HOUSE
ENERGY RATING SCHEME
107.9 MJ/m²
For more information on energy ratings visit: www.nat.org.au/guide

Thermal Star Rating
First achieve thermal rating at the minimum or above National Construction Code (NCC) requirement. A NatHERS thermal rating (stars out of 10) is based on information about the home's design, construction materials and the climate where it is being built and assesses the thermal performance (heating and cooling needs) of a home's construction.

Whole of Home Rating
It is a NCC requirement to meet or exceed the minimum Whole of Home ratings. Once your thermal rating is established you can add home appliances and onsite energy generation to generate your Whole of Home rating out of 100.

60 out of 100
Improving energy performance

Thermal Shell

Heating and Cooling Appliances

Hot Water

Lighting

Pool/Spa Equipment

On site energy generation and storage

Whole of Home



BUILDINGS AFFECTED BY NATHERS 7 STARS

The new residential energy efficiency provisions to meet NatHERS 7-Star requirements apply to;

- » Houses and other low rise multiple dwelling projects (Class 1 buildings.)
- » Apartment buildings (Class 2 sole-occupancy units and Class 4 parts of buildings).

There are 2 key elements to the changes.

1. Thermal Performance

The minimum level of thermal performance of new homes is raised to the equivalent of 7-Stars as determined under the NatHERS. This will deliver a significant improvement in thermal comfort for occupants.

2. Annual Energy Use Budget

A new whole-of-home, annual energy use budget now needs to be met by new homes.

This budget applies to the energy use of a home's heating and cooling equipment, hot water systems, lighting and pumps for swimming pools and spa pumps. Renewable energy systems, such as rooftop solar panels, can be installed to offset a home's energy use to meet the required energy use budget.

DEMONSTRATING COMPLIANCE

There are two compliance pathways which can determine whether a home meets the Performance Requirements of the NCC 2022.

1. Deemed to Satisfy (DTS) elemental provisions.

- » Updated to reflect the increase in thermal performance to the equivalent of 7-Stars and the new annual energy use budget.

NatHERS accredited software

- » AccRate Home
- » BERS Pro
- » FirstRate5
- » Hero

* Products are being added to NatHERS accredited software on a regular basis. Please refer to WERS for the latest product data.

2. Performance Solutions.

Verification Methods

- » Improvements to the existing reference building Verification Method for houses which is based on using non-NatHERS energy modelling software.
- » A new reference building Verification Method for Class 2 apartments which is also based on the use of non-NatHERS energy modelling software.

WHAT CAN OWNERS AND OCCUPANTS EXPECT?

The increase to the equivalent of NatHERS 7-Stars is going to deliver a significant improvement in thermal comfort for occupants.

Here are some of the improvements we are likely to see as a result of more stringent energy provisions:

- » Lower heating and cooling demands for residential homes due to more energy-efficient builds.
- » Reduced heat loss and gain through thermal bridging of roofs, walls, windows and floors.
- » Window and door requirements more appropriate for the specific climate in which the home is built.
- » Reduced heat gain through the implementation of lighter colour roofing and external walls in warmer climates.
- » New ceiling fan requirements for warmer climates (efficient and effective cooling).

SOLUTION

Windows and doors can play a large role in the new 7-Star provisions. In summer, windows and doors can let in up to 87% of heat and let out up to 40% of heat during winter. Therefore, the right choice of windows and doors is essential when building a new home under these new Thermal Performance Requirements.

Architectural Window Systems (AWS) offer a wide range of window and door solutions which meet the energy provisions of NCC 2022. We offer a selection of technologies to achieve outstanding thermal efficiency regardless of your budget.

VANTAGE® - STANDARD TECHNOLOGY

Choosing a glass type specific to the climate and facade orientation of your project may offer the compliance outcome your project is looking for without any change in the framing systems being used.

COMFORTEDGE™ - EMBEDDED FRAME TECHNOLOGY

Developed in Australia by AWS, ComfortEDGE™, is a patented, double glazed, embedded window and door framing system.

This is the next step in improving thermal efficiency by insulating the frame and where necessary, combining a high performance glazing product.

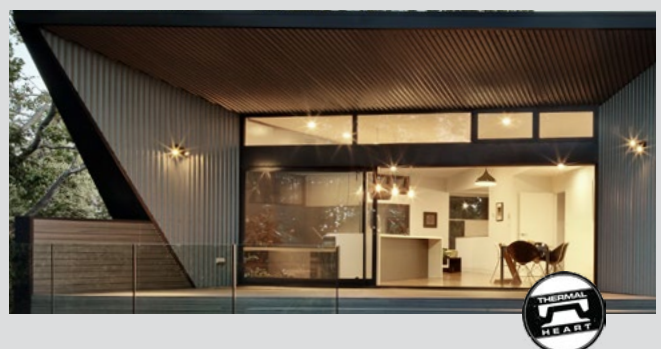
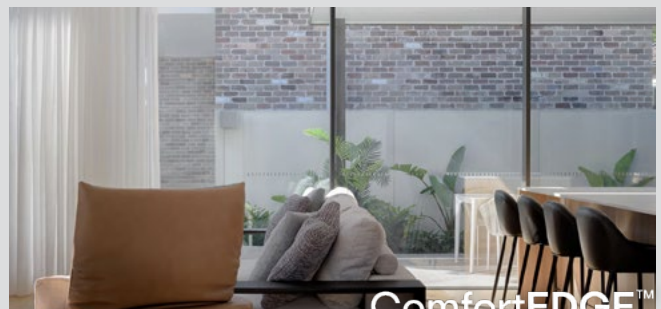
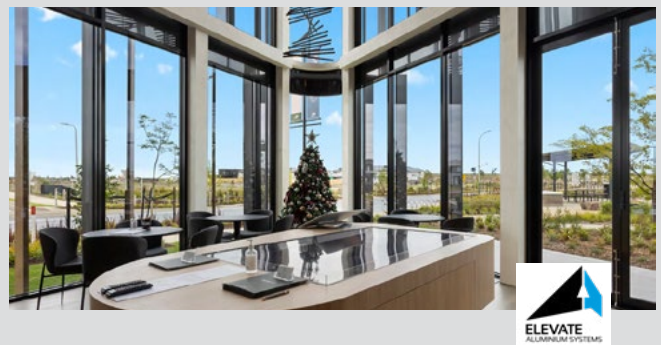
Embedding the frame in the timber reveal provides a natural insulation to heat transfer while maintaining the strength, durability and sustainability of aluminium framing systems.

These are residential systems which are cost effective and suitable for most homes and a large number of apartment applications.

THERMALHEART™ - THERMALLY BROKEN TECHNOLOGY

Thermally Broken framing systems such as ThermalHEART™ incorporate a thermal “break” into the framing system in the form of a polyamide strip. This structural, composite strip secures the interior and exterior sections of aluminium frame together while serving as an insulating “break” to interrupt the heat transfer through the aluminium frame.

ThermalHEART™ offers bold frames that have the ability to expand to commercial span sizes due to the strength and durability of its design.



IDENTIFYING THE BEST SOLUTION

The Window Energy Rating Scheme (WERS) is a national data base of window and door framing systems and details their energy performance values when combined with various glazing solutions.

WERS indicates the performance of a window system by highlighting the simulated U-Value and Solar Heat Gain Coefficient (SHGC) which are the two thermal performance indicators for windows and doors in the NCC 2022.

The U-Value is the measure of how much heat energy is transferred through the glass and frame section of a whole window or door. The lower the U-Value, the better the window or door is at keeping the heat or cold out.

SHGC is a measure of how much solar radiation passes through a window. The lower the number, the lower the solar heat gained through the window itself. However, this can be a beneficial requirement in colder climates and is dictated by the glass selected.

The tables shown below are extracts from the AWS product listings on the WERS certified products database.

They illustrate the significant performance gains achieved using double glazed embedded frames (ComfortEDGE™) and Thermally Broken frames (ThermalHEART™) versus standard, single glazed, Residential frames with no energy efficiency design features.



*"WE CHOSE
THERMALHEART
BECAUSE IT MEANT WE
COULD HAVE MORE
GLASS AND LESS WALL
FACING THE OCEAN"*

**PATRICK DANGERFIELD,
HOME OWNER,
AFL CHAMPION**

Product Name	Technology	Glass Type	Uw	SHGC	Tvw	Max Glass Thickness	WERS ID
Series 504 Vantage® Residential Series Sliding Window	Standard	Clr5/10/5	3.3	0.45	0.60	20mm	AWS-003-309
Series 516 Vantage® Residential Series Awning Window	Standard	Clr5/10/5	3.4	0.43	0.55	20mm	AWS-008-025
Series 516 Vantage® Residential Series Fixed Window	Standard	Clr 5/12/5	2.2	0.52	0.7	20mm	AWS-067-017
Series 541 Vantage® Residential Series Sliding Door	Standard	Clr5/10/5	3.00	0.47	0.63	20mm	AWS-013-021
Series 753 ComfortEDGE™ Sliding Window	Embedded	Clr5/10/5	2.8	0.49	0.66	20mm	AWS-093-027
Series 755 ComfortEDGE™ Awning Window	Embedded	Clr5/10/5	2.4	0.46	0.61	20mm	AWS-088-017
Series 755 ComfortEDGE™ Fixed Window	Embedded	Clr5/10/5	2.00	0.50	0.67	20mm	AWS-090-027
Series 759 ComfortEDGE™ Sliding Door	Embedded	Clr 5/12/5	2.4	0.53	0.69	24mm	AWS-110-073
Series 726 ThermalHEART™ Awning Window	Thermally Broken	Ntl 6/12/6	2.8	0.27	0.34	32mm	AWS-035-117
Series 726 ThermalHEART™ Fixed Window	Thermally Broken	Ntl 6/12/6	2.1	0.36	0.47	32mm	AWS-049-008
Series 729 ThermalHEART™ Hinged Door	Thermally Broken	Ntl 6/12/6	2.5	0.28	0.34	32mm	AWS-034-115
Series 730 ThermalHEART™ Bi-fold Door	Thermally Broken	Ntl 6/12/6	2.5	0.28	0.34	32mm	AWS-034-115
Series 731 ThermalHEART™ Sliding Door	Thermally Broken	Ntl 6/12/6	2.3	0.31	0.40	32mm	AWS-037-102
Series 804 Commercial ThermalHEART™ Fixed Window	Thermally Broken	Clr6/12/6	1.9	0.51	0.69	28mm	AWS-052-55**
Series 824 Commercial ThermalHEART™ Fixed Window	Thermally Broken	Clr6/12/6	1.9	0.52	0.69	28mm	AWS-052-55**

*The performance values above have been illustrated using a consistent glass configuration where possible. Performance values will differ when alternative glass types are selected. **Old WERS ID - Series 804 and 824 not available on new WERS site at present.

SOLUTIONS FOR 7 STAR PERFORMANCE

VANTAGE® - STANDARD TECHNOLOGY

Beautiful, high-quality Vantage® windows and doors are locally designed and manufactured with the Australian climate in mind.

They're built to last, with contemporary designs engineered and tested to comply to Australian standards, Vantage® offers premium customisation to suit any home.

SERIES 504



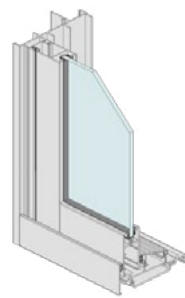
Residential Sliding Window

SERIES 516



Residential Awning Window

SERIES 541



Residential Sliding Door

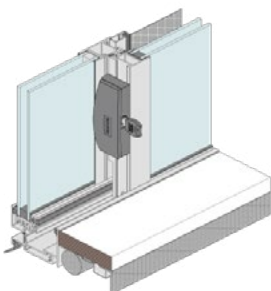


COMFORTEDGE™ - EMBEDDED TECHNOLOGY

ComfortEDGE™ is a double glazed residential system which utilises embedded frame technology to minimise the exposed aluminium frame to reduce heat transfer from inside and out.

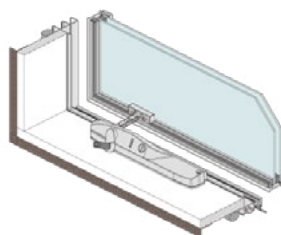
The timber reveal acts as a natural insulator while delivering a minimalist design aesthetic making it ideal for our harsh Australian climate and contemporary design preference.

SERIES 753



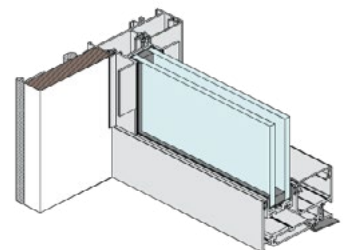
ComfortEDGE™ Sliding Window

SERIES 755



ComfortEDGE™ Awning Window

SERIES 759



ComfortEDGE™ Sliding Door

SOLUTIONS FOR 7 STAR PERFORMANCE
AWS PRODUCT SOLUTIONS

THERMALHEART™ - THERMALLY BROKEN TECHNOLOGY

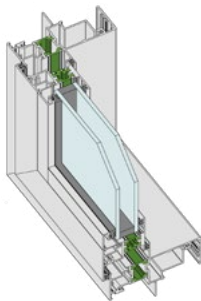
Designer Series with ThermalHEART™ technology is a unique suite of thermally broken aluminium window and door systems designed for (dependent on building requirements and standards) outstanding energy efficiency and greater freedom of construction design choice.

Developed as our first thermally efficient window and door solution in response to growing environmental concern and requirement for energy efficient building designs, Designer Series with ThermalHEART™ offers significantly improved thermal performance and savings in artificial savings in artificial energy use.

ThermalHEART™ is ideal for applications where minimising heat and cool transfer is a priority and the design calls for larger window and door spans. This innovative range is 32% more thermally efficient than standard double-glazed windows and doors.

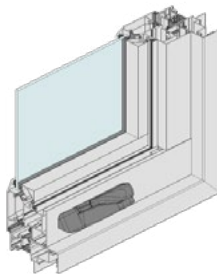
Due to the nature of its design using 2 separate frame profiles, homeowners have the choice of dual colour options to match the internal and external colours of the home answering the need for an aesthetic appeal.

SERIES 726



ThermalHEART™ Awning Window

SERIES 726TR



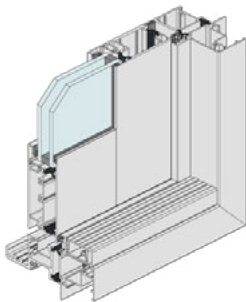
ThermalHEART™ Awning Window with TRUTH™ hardware

SERIES 729



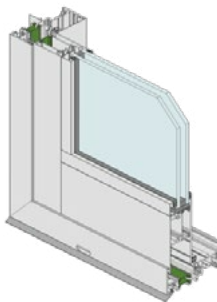
ThermalHEART™ Hinged Door

SERIES 730



ThermalHEART™ Bi-Fold Door

SERIES 731

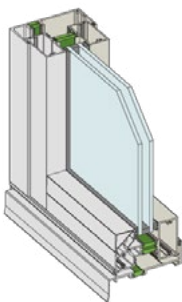


ThermalHEART™ Sliding Door

FOR TECHNICAL SUPPORT & FABRICATOR LOCATIONS

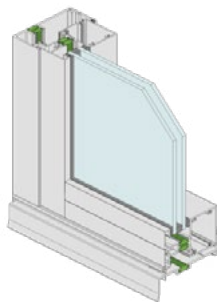


SERIES 804



CentreGLAZE™ Framing

SERIES 824



ThermalHEART™ Sliding Door

WEBSITE: specifyaws.com.au
 CALL 1300 026 189
 EMAIL: marketing@awsaustralia.com.au

HEAD OFFICE
 76-78 Jemma Road Prestons NSW 2170

PO BOX
 311 Liverpool NSW 1871, Australia